NTU-52V/VC. User manual (user)

Optical network terminal
NTU-52V
NTU-52VC
Firmware version 1.3.3

IP address: http://192.168.1.1
Login: user
Password: user

Introduction

A GPON is a network of passive optical networks (PON) type. It is one of the most effective state-of-the-art solutions of the last mile issue that enables cable economy and provides information transfer downlink rate up to 2.5 Gbps and uplink rate up to 1.25 Gbps. Being used in access networks, GPON-based solutions allow end users to have access to new services based on IP protocol in addition to more common ones.

The key GPON advantage is the use of one optical line terminal (OLT) for multiple optical network terminals (ONT). OLT converts Gigabit Ethernet and GPON interfaces and is used to connect a PON network with data communication networks of a higher level. ONT device is designed to connect user terminal equipment to broadband access services. It can be used in residential areas and office buildings.

The range of ONT NTU equipment produced by ELTEX comprises of terminals with two UNI interfaces of 10/100/1000Base-T and supports for FXS, USB[1], RF[2] interfaces:

- NTU-52V, NTU-52VC

This user manual describes intended use, main specifications, configuration, monitoring, and firmware update for NTU-52V/VC optical terminals.

Notes and warnings

Notes contain important information, tips, or recommendations on device operation and setup.

Warnings inform users about hazardous conditions which may cause injuries or device damage and may lead to the device malfunctioning or data loss.

[1] For NTU-52V

[2] For NTU-52VC

Product Description

Purpose

NTU-52V/VC GPON ONT (Gigabit Ethernet Passive Optical Network) devices represent high-performance user terminals designed to establish a connection with upstream passive optical network equipment and to provide broadband access services to the end user. GPON connection is established through the PON interface, while Ethernet interfaces are used for connection of terminal equipment.

The key GPON advantage is the optimal use of bandwidth. This technology is considered as the next step in provisioning of new high-speed Internet applications at home and office. Being developed for network deployment inside houses or buildings, these ONT devices provide robust connection with high throughput and at long distances for users living and working at remote apartment and office buildings.

An integrated router allows local network equipment to be connected to a broadband access network. The terminals protect PCs from DoS and virus attacks with the help of firewall and filter packets to control access based on ports and MAC/IP addresses of source and target. Users can configure a home or office web site by adding a LAN port into DMZ. The 'Parental Control' feature provides filtering of Web sites with inappropriate content, domain blocking. Virtual private network (VPN) provides mobile users and branch offices with a protected communication channel for connection to a corporate network.

FXS port enable IP telephony and provide various useful features such as display of caller ID, three-way conference call, phone book, and speed dialling. This makes dialling and call pick-up user friendly.

USB ports can be used for USB-enabled devices (USB flash drives, external HDD).

NTU-52VC device has an integrated RF output, to which a TV is connected to watch analog or digital cable television (if the service is provided by the carrier).

Models

NTU-52V/VC series devices are designed to support various interfaces and features, see Table 1.

Table 1 – Models

Model name	WAN	LAN	FXS	TV	USB
NTU-52V	1xGPON	1xFastEthernet, 1xGigabit Ethernet	1	-	1
NTU-52VC	1xGPON	1xFastEthernet, 1xGigabit Ethernet	1	1	-

Device Specification

Device is equipped with the following interfaces:

- Ports to connect network devices (FXS):
  - 1 RJ-11 port[1];
  - 1 RJ-45 port[2].
- 1xPON SC/APC port for connection to provider's network (WAN);
- Ethernet RJ-45 LAN ports for connection of network devices (LAN):
  - 1 port of RJ-45 10/100Base-T (for details see Section 3. Design);
  - 1 port of RJ-45 10/100/1000Base-T (for details see Section 3. Design);
- 1 USB 2.0 port for external USB or HDD storages[2].
- 1 RF port for cable television (CaTV) connection[1].

[1] *Only for NTU-52VC*

[2] *Only for NTU-52V*

The device supports the following functions: The terminal uses an external adapter for 220V/12V power supply.

- *Network functions:*
  - bridge or router operation mode;
  - PPPoE (auto, PAP, CHAP, MSCHAP authorization);
  - IPoE (DHCP-client and static);
  - static IP address and DHCP (DHCP client on WAN side, DHCP server on LAN side);
  - DNS (Domain Name System);
  - DynDNS (Dynamic DNS);
  - UPnP (Universal Plug and Play);
  - IPsec (IP Security);
  - NAT (Network Address Translation);
  - Firewall;
  - NTP (Network Time Protocol);
  - QoS;
  - IGMP snooping;
  - IGMP proxy;
  - Parental Control;
  - Storage service;
  - SMB, FTP, Print Server;
  - VLAN in accordance with IEEE 802.1Q.
- *VoIP*
  - SIP
  - audio codecs: G.729 (A), G.711(A/U), G.723.1;
  - echo cancellation (G.164 and G.165 guidelines);
  - Voice activity detection (VAD);
  - Comfort noise generator (CNG);
  - DTMF signal detection and generation
  - DTMF transmission (INBAND, RFC2833, SIP INFO)
  - Fax transmission: G.711, T.38
  - Caller ID display.
- *Firmware updates via web interface, TR-069, OMCI.*
- *Remote monitoring, configuration and setup*:
  - TR-069;
  - Web interface;
  - OMCI.
- *CaTV*[1].

[1] *Only for NTU-52VC*

The figures below illustrate applications schemes of NTU-52V/VC.

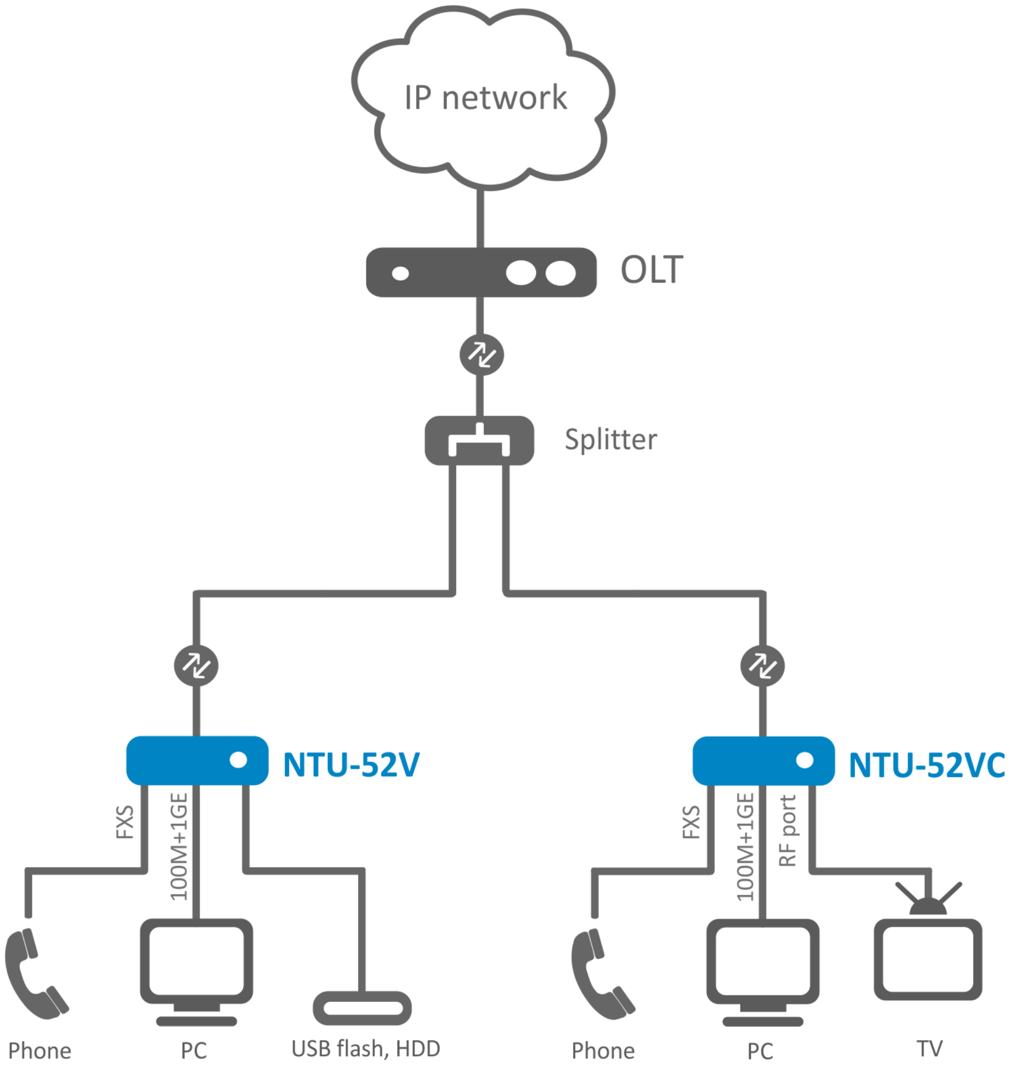


Figure 1 – NTU-52V and NTU-52VC application diagram

Key Specifications

Table 2 shows main specifications of the terminals:

Table 2 — Main Specifications

VoIP protocols

Supported protocols	SIP

Audiocodecs

Codecs	G.729, annex A G.711(A/µ) G.723.1 (5,3 Kbps) Fax transmission: G.711, T.38

Ethernet LAN interface parameters

Number of interfaces	2
Socket	RJ-45
Data rate	Auto-negotiation, 10/100/1000 Mbps, duplex/half-duplex

Standards	IEEE 802.3i 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3x Flow Control IEEE 802.3 NWay auto-negotiation

PON interface parameters

Number of interfaces	1
Standards	ITU-T G.984.x Gigabit-capable passive optical networks (GPON) ITU-T G.988 ONU management and control interface (OMCI) specification IEEE 802.1Q Tagged VLAN (The following VLANs are used for internal operation and cannot be used to create WAN services: 0, 4032, 4039, 4022, 4023, 4024, 4027, 4026, 4000~4005, 4095) IEEE 802.1P Priority Queues IEEE 802.1D Spanning Tree Protocol
Connector type	SC/APC in accordance with ITU-T G.984.2, ITU-T G.984.5 Filter, FSAN Class B+, SFF-8472
Transmission environment	Fiber optical cable SMF—9/125, G.652
Splitting ratio	Up to 1:128
Maximum range of coverage	20 km
Transmitter:	1310 nm
• **Upstream connection speed**	1244 Mbps
• **Transmitter power**	+0,5 to +5 dBm
• **Optical spectrum width (RMS)**	1 nm
Receiver:	1490 nm
• **Downstream connection speed**	2488 Mbps
• **Receiver sensitivity**	from -8 to -28, BER1.0x10-10
Receiver optical congestion	-4 dBm

Subscriber analogue ports parameters

Number of ports	NTU-52V	NTU-52VC
	1	1
Loop resistance	Up to 2 k	
Call reception	Pulse/frequency (DTMF)	

Caller ID display	Yes

Control

Local control	Web interface
Remote control	Telnet, TR-069, OMCI
Firmware update	OMCI, TR-069, HTTP
Acces restriction	By password

General parameters

Model	NTU-52V	NTU-52VC
Power supply	12 VDC/220 VAC power adapter	12 VDC/220 VAC power adapter
RF port	-	1
Max. power consumption	10 W	
Operating temperature	From +5 to +40°	
Relative humidity	80% max.	
Dimensions	147×110×24 mm	160×120×40 mm
Weight	0,3 kg	

Design

Subscriber terminal is designed as desktop device in plastic housing.

The rear panel layout of the devices is depicted in Fig. 2, 3.

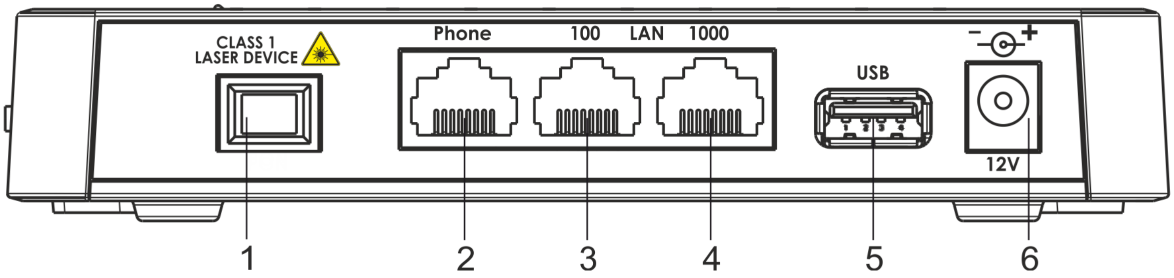


Figure 2 — NTU-52V rear panel layout

Connectors and controls located on the rear panel of 52V are listed in Table 3.

Table 3 – Description of the connectors and controls on the rear panel

#	Rear panel element	Description
1	***PON***	SC port (socket) for PON with GPON interface
2	***Phone***	RJ-45 connector for analogue phone connection
3	***LAN 10/100***	RJ-45 port for network devices connection (Ethernet/Fast Ethernet)
4	***LAN 10/100/1000***	RJ-45 port for network devices connection (Gigabit Ethernet)
5	***USB***	Connector for external drives and other USB devices
6	***12V***	Power adapter connector

Connectors and controls located on the rear panel of 52VC are listed in Table 4.

Table 4 – Description of the connectors and controls on the rear panel

#	Rear panel element	Description
1	*On/Off*	Power button
2	*12V*	Power adapter connector
3	*F*	A functional key that reboots the device and resets it to factory settings
4	*TV*	RF port for connecting a coaxial cable
5	*LAN 10/100*	RJ-45 port for network devices connection (Ethernet/Fast Ethernet)
6	*LAN 10/100/1000*	RJ-45 port for network devices connection (Gigabit Ethernet)
7	*Phone*	RJ-11 connector for analogue phone connection
8	*PON*	SC port (socket) for PON with GPON interface

The side panel layout of the NTU-52V is depicted in figure below.

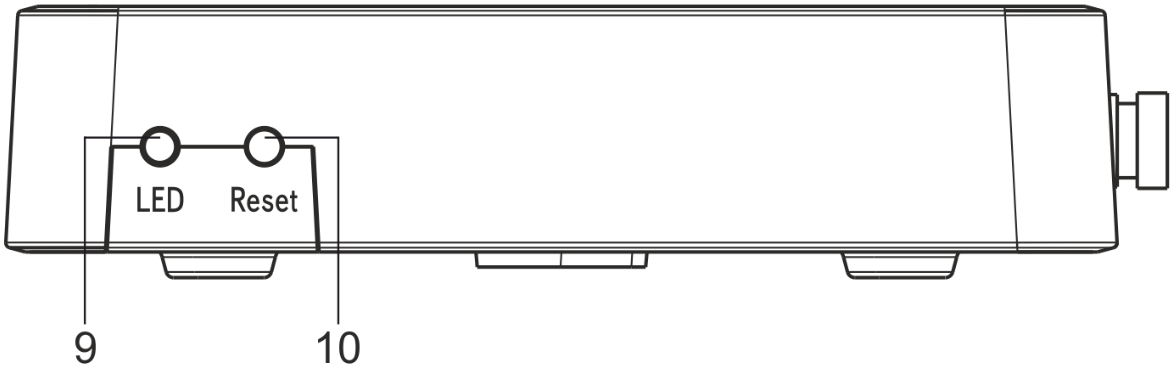


Figure 4 — NTU-52V side panel layout

See Table 5 for detailed information about buttons located on the side panel of the device.

Table 5 – Description of the side panel LED indicators

#	Side panel element	Description
1	*LED*	LED on/off button
2	*Reset/restore*	A functional key that reboots the device and resets it to factory settings

Light Indication

The top panel layout of the NTU-52V is depicted in Fig. 5, the front panel layout is depicted in Fig. 6.

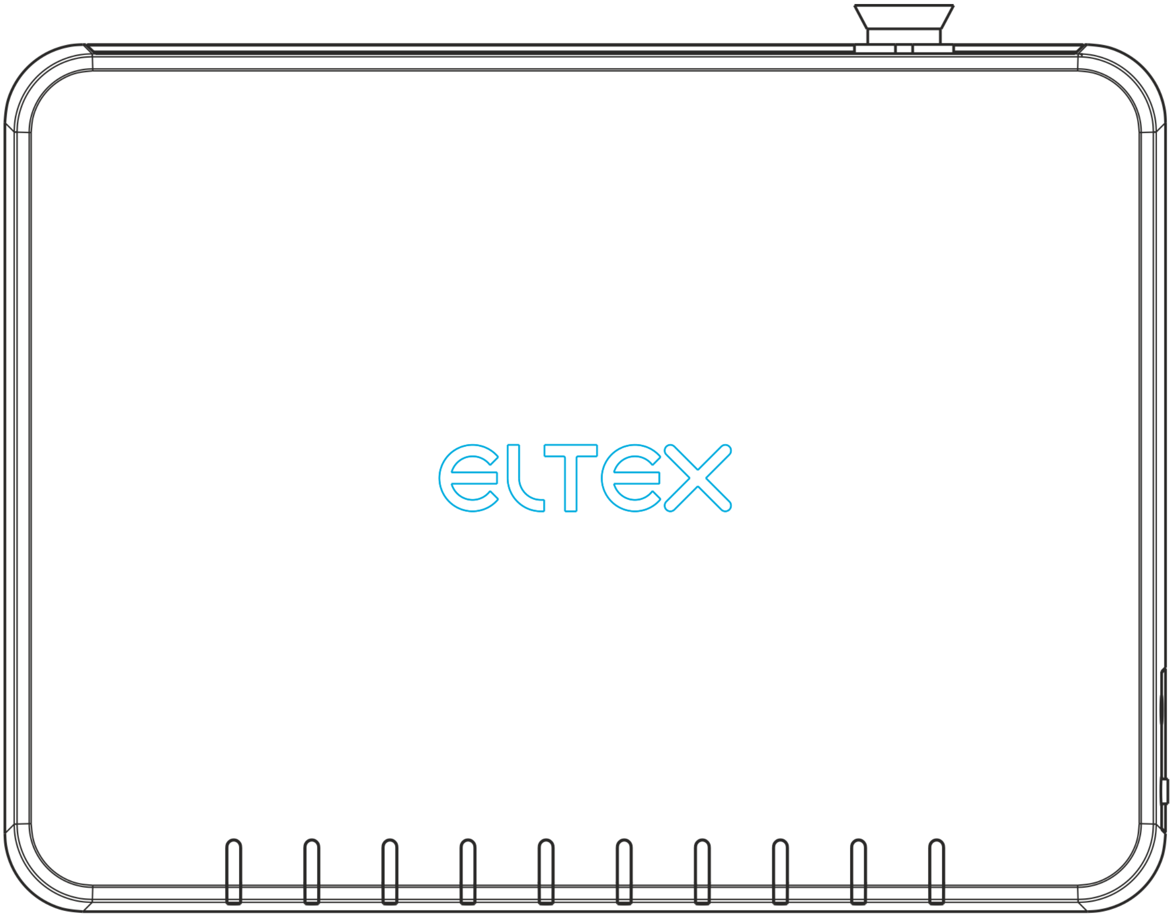


Figure 5 — NTU-52V top panel layout

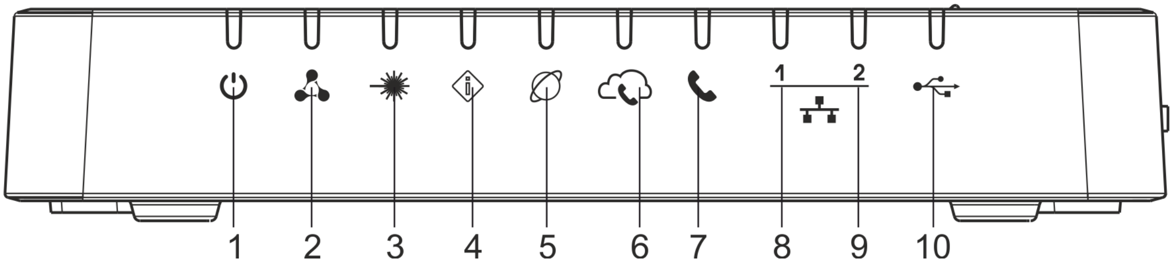


Figure 6 — NTU-52V front panel layout

The LED indicators located on the top and front panels show the current device status. Table 6 lists possible statuses of the LEDs.

Table 6 – Description of NTU-52V front and top panel LEDs

#	Front panel element	LED Status	Description
1	***- power indicator***	green	power is connected
		off	power is not connected
2	***- operation status indicator***	flashes slowly	the firmware update process is in progress
		orange	device startup is completed, the default configuration is set
		green	device startup completed, the current device configuration differs from the default
3	**- optical interface operation indicator**	off	the device is not connected to OLT
		flashes green	the device is in the registration process on OLT
		green	the device is connected and registered on OLT
4		off	the device is connected to OLT

	- optical interface status indicator	flashes red	laser is off at LT side
		red	there is no signal from OLT
5	*- 'Internet' status indicator*	off	there is no active connection to Internet
		green	the device is ready, connection established
		flashes green	the device is in connection process
6	*- SIP registration indicator*	off	VoIP service is not configured
		green	VoIP service is successfully activated
		flashes green	port is not registered or SIP authentication is not completed on server
7	*- FXS port activity indicator*	off	phone is off hook
		flashes green	receiving a call
		green	phone is on hook
8-9	*- 1..2 – Ethernet port activity indicator*	green	established 10/100 Mbps connection
		orange	established 1000 Mbps connection
		flashes green/orange rapidly	data transfer is in progress
10	*- USB port operation indicator*	off	USB device is not connected
		green	USB device is connected
		flashes green	data transfer is in progress

The front panel layout of the NTU-52VC is depicted in Figure 7.

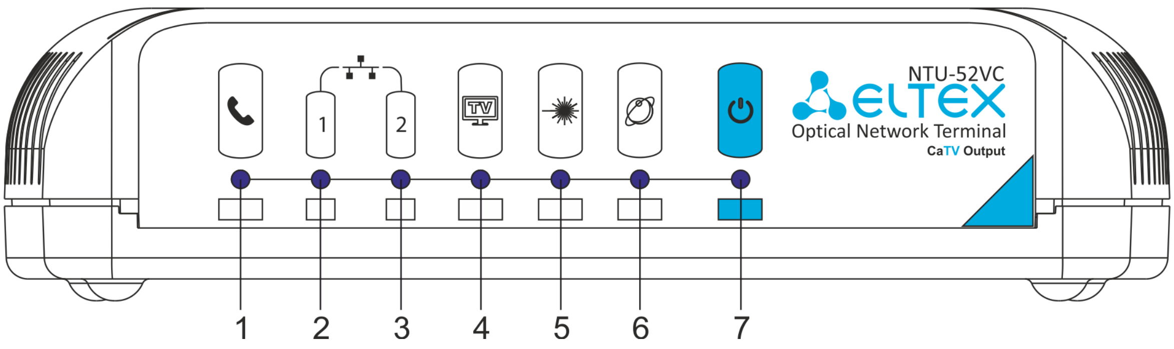


Figure 7 — NTU-52VC front panel layout

The LED indicators located on the front panel show the current state of the device. Table 7 provides possible statuses of the LEDs.

Table 7 – Description of NTU-52VC front panel LEDs

#	Front panel element	LED Status	Description
1	*– FXS port activity indicator*	off	phone is off hook
		flashes green	receiving a call
		green	phone is on hook
2-3	*-1 – 10/100 Mbps Ethernet port operation indicator*	green	established 10/100 Mbps connection
		flashes green rapidly	data transfer is in progress
	-2 – 10/100/1000 Mbps Ethernet port operation indicator	green	established 10/100 Mbps connection
		orange	established 1000 Mbps connection
		flashes green/orange rapidly	data transfer is in progress
4	*– TV operation status indicator*	off	RF port is disabled
		orange	CaTV signal power is in the range from -10 dBm..-8 dBm or +2 dBm..+3 dBm
		green	-8dBm < CaTV signal power < +2dBm
5	*– optical interface activity indicator*	off	device is rebooting
		flashes red	the device is not connected to OLT

		flashes green	the device is in the registration process on OLT
		green	the device is connected and registered on OLT
6	🌐 *– 'Internet' operation status indicator*	off	there is no active connection to Internet
		green	the device is ready, connection established
		orange	the device is in connection process
7	⏻ *– power indicator*	off	power is disconnected or device is fault
		green	device startup completed, the current device configuration differs from default
		orange	device startup is completed, the default configuration is set
		red	device is booting
		flashes slowly	the firmware update process is in progress

Reboot and Reset to Factory Settings

To reboot the device, press the 'Reset' button located on its side panel. In order to reset the device to the factory settings, press the 'Reset' button and hold it for 7-10 seconds until the indicator glows red and all other LEDs go out. Factory settings for IP address are: LAN - *192.168.1.1*, subnet mask – *255.255.255.0.* Access can be provided from LAN 1 and LAN 2.

Delivery Package

The NTU-52V/VC standard delivery package includes:

- NTU-52V/VC optical network terminal;
- 220V/12V power adapter;
- User manual.

NTU-52V/VC architecture

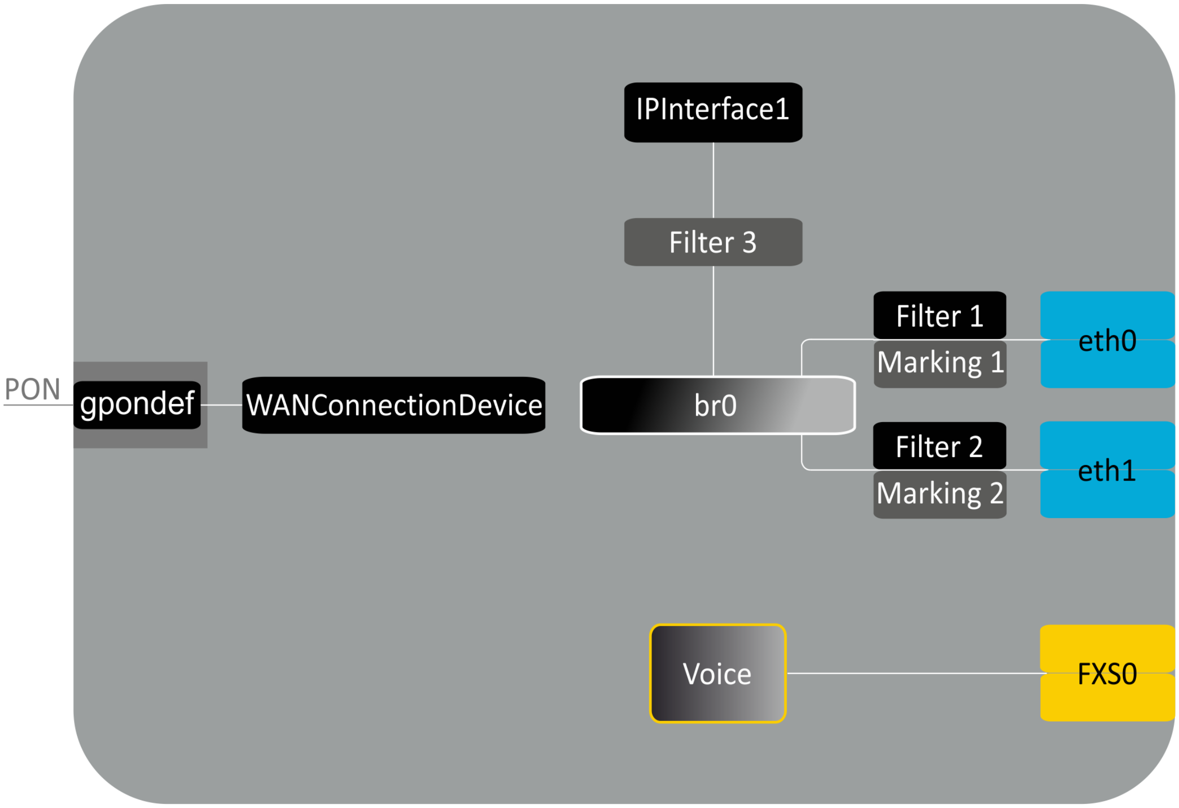


Figure 8 – Logical architecture of a device with factory settings

Main Components of the Device:

- **Optical receiver/transmitter (SFF module)** for conversion of an optical signal into an electric one;

- **Processor (PON chip)** which converts Ethernet and GPON interfaces**;**

A device with factory (initial) settings have the following logical blocks (see Fig.8):

- Br0;
- Voice (VoIP block);
- eth0…1;
- FXS0;
- IPInterface1.

Br0 block here is used to combine LAN ports into a single group.

The **eth0..1** blocks physically represent Ethernet ports with RJ-45 connector for connection of PC, STB, or other network devices. They are logically included into **br0** block

FXS0 block is a port with RJ-11 connectors for connection of analogue phone. It is logically included into the Voice block. The Voice block can be controlled through web interface or remotely with ACS server via TR-069 standard. The block specifies VoIP service parameters (SIP server address, phone number, VAS, etc.).

Filter and **Marking blocks** enable inclusion of local interfaces into a single group (to **br0** block). They deal with the traffic transmission rules, **Filter** blocks are responsible for the incoming traffic on the interface, **Marking** blocks – for the outgoing one.

IPInterface1 block is a logical entity on which IP address providing the access in LAN and DHCP server distributing addresses to clients are located.

Device configuration via Web interface. Administrator Access

Getting Started

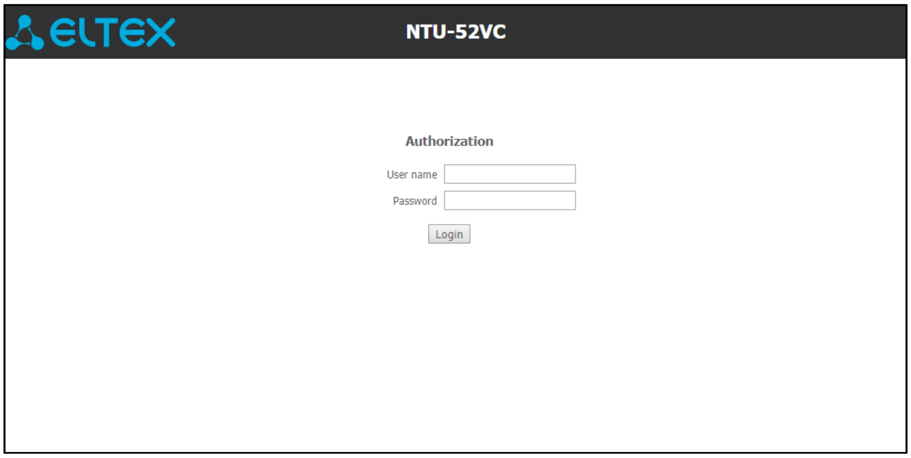
To configure the device, it is necessary to connect to it through Web browser:

1. Open the Web browser (program for viewing hypertext documents), for example, Firefox, Google Chrome and etc.

2. Enter the device IP address in the browser address line

Factory default IP address: *192.168.1.1*, subnet mask: *255.255.255.0*

When the device is successfully connected, username and password request page will be shown in the browser window:



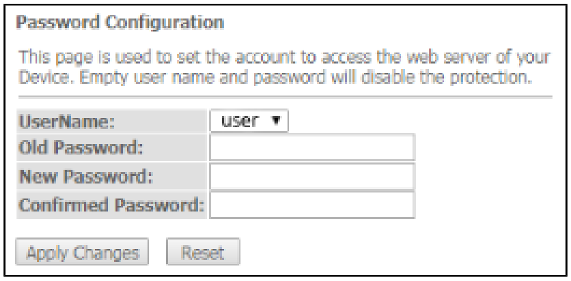
3. Enter your username into ‘User Name’ and password into ‘Password’ field.

Username: *user*, password: *user*.

4. Click the ‘Login’ button. In the browser window, the home page of the device’s web interface will open.

Password changing

To prevent unauthorized access to device in the future, it is recommended to change password. To change the password enter the new password in the *'Admin'* menu, *'Password'* section in the *'New Password'* and *'Confirm new password'* fields.



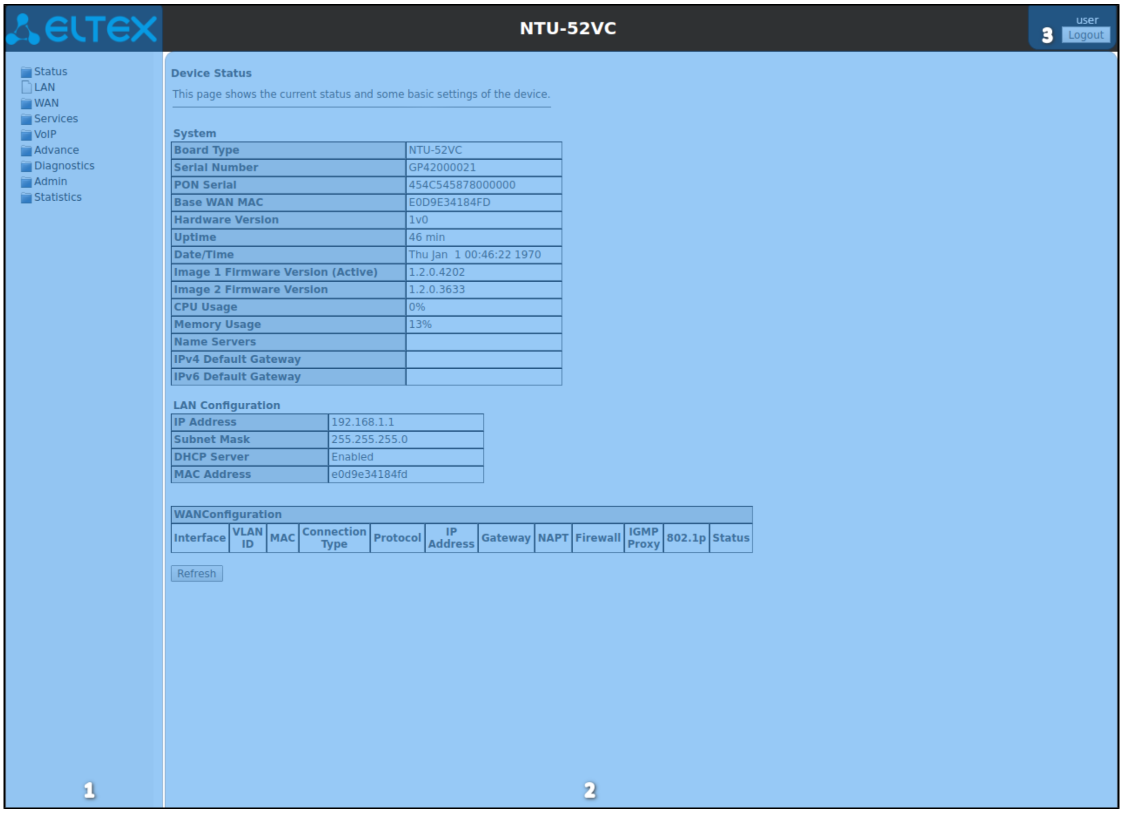
Password Configuration

This page is used to set the account to access the web server of your Device. Empty user name and password will disable the protection.

UserName:	user ▼
Old Password:	
New Password:	
Confirmed Password:	

Main elements of the web interface

General view of the device configuration window is depicted below.



Device Status

This page shows the current status and some basic settings of the device.

System

Board Type	NTU-52VC
Serial Number	GP42000021
PON Serial	454C545878000000
Base WAN MAC	E0D9E34184FD
Hardware Version	1v0
Uptime	46 min
Date/Time	Thu Jan 1 00:46:22 1970
Image 1 Firmware Version (Active)	1.2.0.4202
Image 2 Firmware Version	1.2.0.3633
CPU Usage	0%
Memory Usage	13%
Name Servers	
IPv4 Default Gateway	
IPv6 Default Gateway	

LAN Configuration

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
MAC Address	e0d9e34184fd

WANConfiguration

Interface	VLAN ID	MAC	Connection Type	Protocol	IP Address	Gateway	NAPT	Firewall	IGMP Proxy	802.1p	Status

The user interface window can be divided into 3 parts:

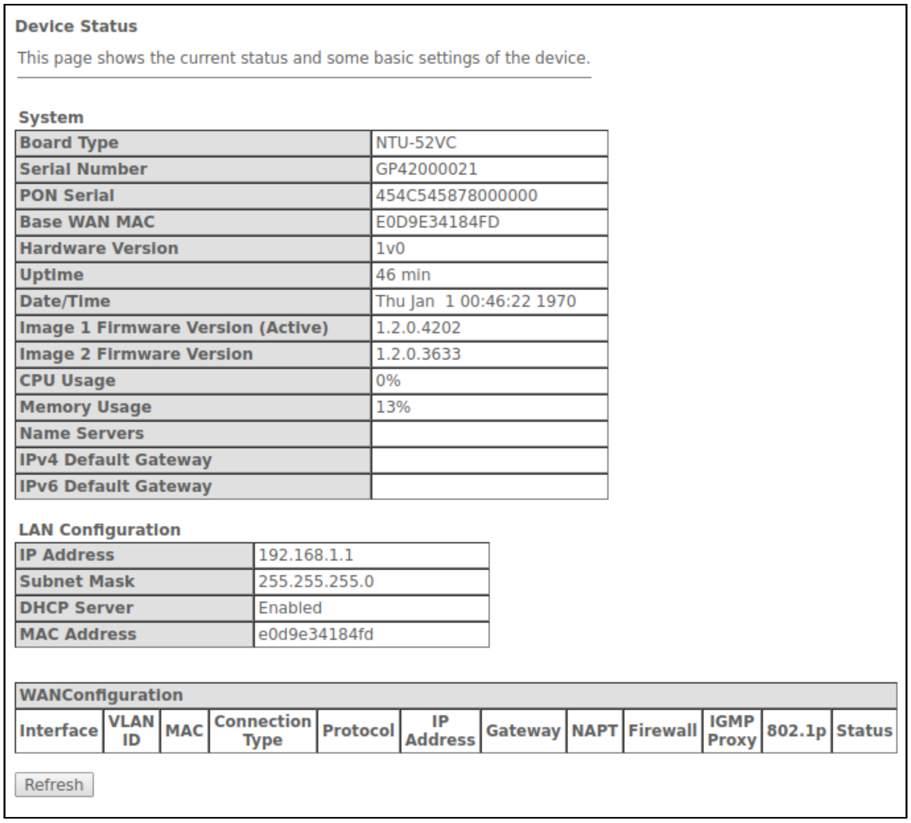
1. The navigation tree on the device settings menu.
2. The main settings window for the selected section.
3. User change button.

The 'Status' menu. Device Information

The 'Device status' submenu. Device General Information

This section displays general information about the device, the main parameters of the LAN and WAN interfaces.

Status Device status



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LAN Configuration

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled
MAC Address	e0d9e34184fd

WANConfiguration

Interface	VLAN ID	MAC	Connection Type	Protocol	IP Address	Gateway	NAPT	Firewall	IGMP Proxy	802.1p	Status

System

- *Board Type* – device model;
- *Serial Number* – device serial number;
- *PON Serial* – device serial number in the PON network;
- *Base WAN MAC* – WAN MAC address of the device;
- *Hardware Version* – hardware version;
- *Uptime* – device uptime;
- *Date/Time* – current time on the device;
- *Image 1 Firmware Version (Active)* – current firmware version;
- *Image 2 Firmware Version* – backup firmware version;
- *CPU Usage* – CPU utilization percent;
- *Memory Usage* – memory utilization percent;
- *Name Servers* – DNS server name;
- *IPv4 Default Gateway* – IPv4 default gateway;
- *IPv6 Default Gateway* – IPv6 default gateway.

LAN Configuration

- *IP Address* – device IP address;
- *Subnet Mask* – device subnet mask;
- *DHCP Server* – DHCP server state;
- *MAC Address* – device MAC address.

WAN Configuration

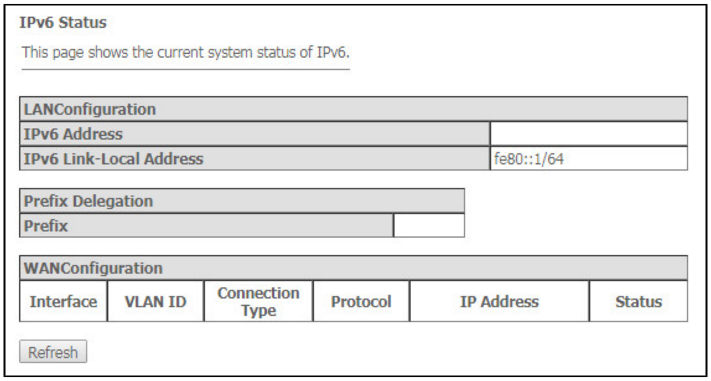
- *Interface* – interface name;
- *VLAN ID* – interface VLAN ID;
- *MAC* – interface MAC address;
- *Connection Type* – connection type;
- *Protocol* – protocol used;
- *IP Address* – Interface IP address;
- *Gateway* – gateway;
- *Status* – interface status.

Click the 'Refresh' button to update the page.

The 'IPv6 Status' submenu. Information about IPv6 system

The tab displays the current status of IPv6 system.

Status IPv6



IPv6 Status

This page shows the current system status of IPv6.

LANConfiguration	
IPv6 Address	
IPv6 Link-Local Address	fe80::1/64

Prefix Delegation	
Prefix	

WANConfiguration

Interface	VLAN ID	Connection Type	Protocol	IP Address	Status

LAN Configuration

- *IPv6 Address* – IPv6 address;
- *IPv6 Link-Local Address* – local IPv6 address.

Prefix Delegation

- *Prefix* – IPv6 address prefix.

WAN Configuration

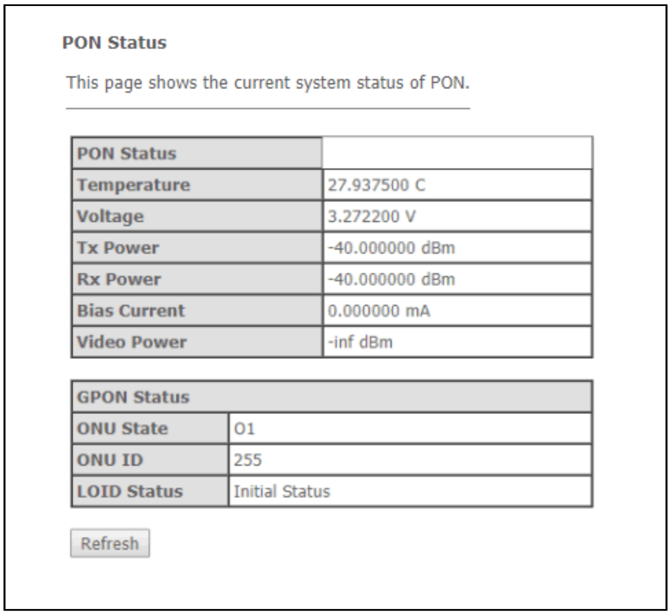
- *Interface* – interface name;
- *VLAN ID* – interface VLAN ID;
- *Connection Type* – connection type;
- *Protocol* – protocol used;
- *IP Address* – interface IP address;
- *Status* – interface status.

Click the 'Refresh' button to update the page.

The 'PON' submenu. Optical module status information

The tab displays the current status of PON interface system.

Status PON



PON Status

This page shows the current system status of PON.

PON Status	
Temperature	27.937500 C
Voltage	3.272200 V
Tx Power	-40.000000 dBm
Rx Power	-40.000000 dBm
Bias Current	0.000000 mA
Video Power	-inf dBm

GPON Status	
ONU State	O1
ONU ID	255
LOID Status	Initial Status

PON Status

- *Temperature* – current temperature;
- *Voltage* – voltage;
- *Tx Power* – transmission signal power;
- *Rx Power* – reception signal power;
- *Bias Current* – bias current;
- *Video Power* – video signal power.

PON Status

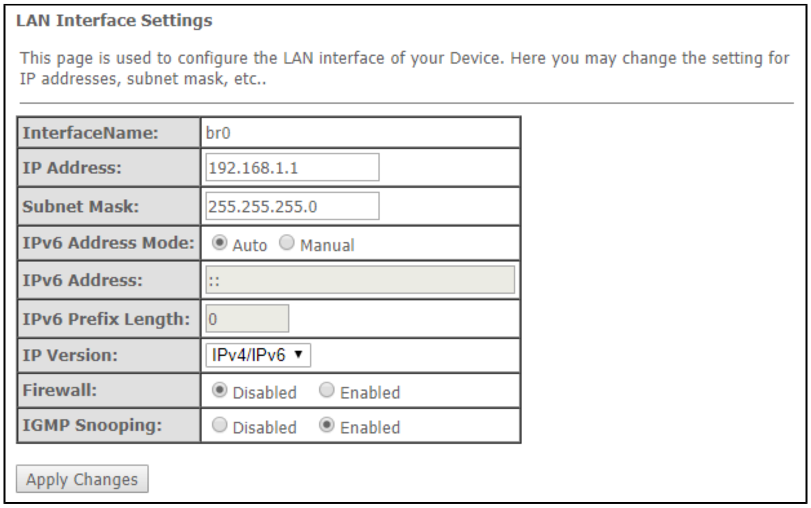
- *ONU State* – ONU status;
- *ONU ID* – ONU ID;
- *LOID Status* – LOID status.

Click the 'Refresh' button to update the page.

The 'LAN' menu LAN interface configuration

You can configure main parameters of LAN interfaces in this section.

LAN



LAN Interface Settings

This page is used to configure the LAN interface of your Device. Here you may change the setting for IP addresses, subnet mask, etc..

InterfaceName:	br0
IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0
IPv6 Address Mode:	● Auto ○ Manual
IPv6 Address:	::
IPv6 Prefix Length:	0
IP Version:	IPv4/IPv6 ▾
Firewall:	● Disabled ○ Enabled
IGMP Snooping:	○ Disabled ● Enabled

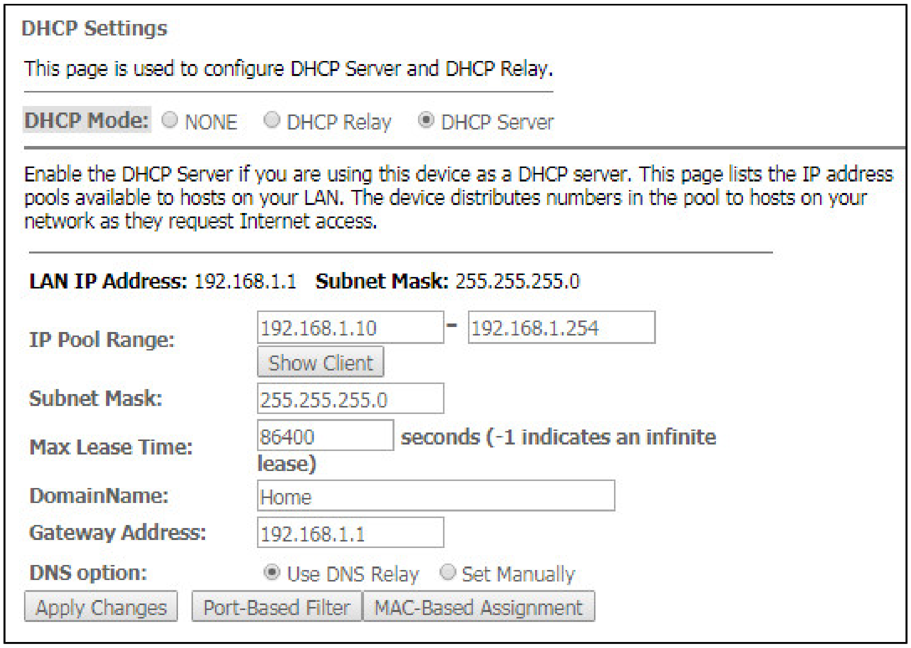
- *Interface name* – interface name;
- *IP Address* – interface IP address;
- *Subnet Mask* – interface subnet mask;
- *IPv6 Address Mode* – access to the device via IPv6 address:
  - *Auto* – when checked, the access to the device via IPv6 address will be granted automatically;
  - *Manual* – when checked, you need to specify the IPv6 address manually :
- *IPv6 Address* – IPv6 address;
- *IPv6 Prefix Length* – length of the IPv6 address;
- *IP Version* – IP protocol version used (IPv4 or IPv4/IPv6);
- *Firewall (Enabled/Disabled)* – enable/disable firewall for LAN interface;
- *IGMP Snooping (Enabled/Disabled)* – enable/disable IGMP Snooping.

The Services menu. Service configuration

The 'DHCP Setting' submenu. DHCP configuration

The menu allows DHCP server and DHCP repeater configuration.

Services DHCP (Server)



DHCP Settings

This page is used to configure DHCP Server and DHCP Relay.

DHCP Mode: ○ NONE ○ DHCP Relay ● DHCP Server

Enable the DHCP Server if you are using this device as a DHCP server. This page lists the IP address pools available to hosts on your LAN. The device distributes numbers in the pool to hosts on your network as they request Internet access.

LAN IP Address: 192.168.1.1 **Subnet Mask:** 255.255.255.0

IP Pool Range: 192.168.1.10 - 192.168.1.254

Subnet Mask: 255.255.255.0

Max Lease Time: 86400 **seconds (-1 indicates an infinite lease)**

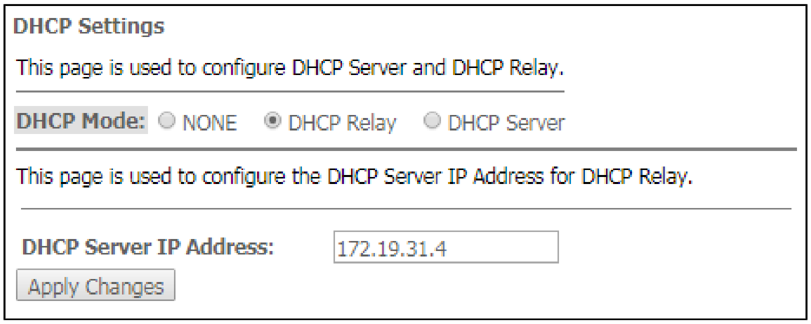
DomainName: Home

Gateway Address: 192.168.1.1

DNS option: ● Use DNS Relay ○ Set Manually

- *DHCP Mode*– select operation mode:
  - *NONE* – DHCP disabled;
  - *DHCP Server* – operation in DHCP server mode;
  - *DHCP Relay* – operation in DHCP repeater mode.
- *IP Pool Range* – range of addresses distributed among clients;
- *Show Client* – button to view clients who leased the addresses. When clicking, a table with information about DHCP clients leased by a DHCP server is displayed;
- *Subnet Mask* – subnet mask;
- *Max Lease Time* – maximum lease time, -1 for endless lease;
- *DomainName*– domain name;
- *Gateway Address* – gateway address;
- *DNS option* – defines DNS operation:
  - *Use DNS relay* – ONT address will be returned as DNS and all queries will be relayed via ONT;
  - *Set manually* – set DNS manually.

Services DHCP (Relay)



DHCP Settings

This page is used to configure DHCP Server and DHCP Relay.

DHCP Mode: ○ NONE ● DHCP Relay ○ DHCP Server

This page is used to configure the DHCP Server IP Address for DHCP Relay.

DHCP Server IP Address: 172.19.31.4

- *DHCP Server IP Address* – IP address of the remote DHCP server.

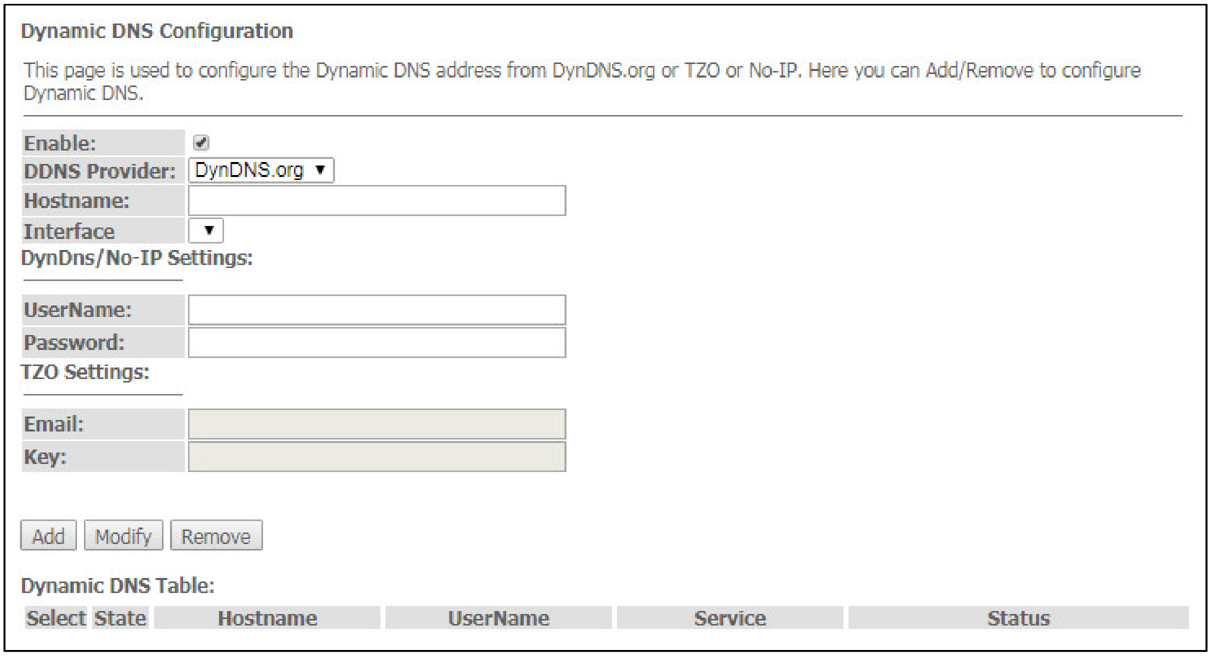
To save the changes, click the 'Apply Changes' button. 'Port-Based Filter' and 'MAC-Based Assignment' buttons allow configuring port-based and MAC-based filtering, respectively.

The 'Dynamic DNS' submenu. Dynamic DNS Configuration

Dynamic DNS (domain name system) allows information to be updated on DNS server in real time and (optionally) automatically. It is applied for assignment of a constant domain name to a device (computer, router, e.g. NTU-52V/VC) having a dynamic IP address. The IP address can be assigned by IPCP in PPP connections or in DHCP.

Dynamic DNS is frequently used in local networks where clients are obtaining IP addresses through DHCP and then are registering their names on a local DNS server.

Services DNS Dynamic DNS



Dynamic DNS Configuration

This page is used to configure the Dynamic DNS address from DynDNS.org or TZO or No-IP. Here you can Add/Remove to configure Dynamic DNS.

Enable:	☑
DDNS Provider:	DynDNS.org ▼
Hostname:	
Interface	▼

DynDns/No-IP Settings:

UserName:	
Password:	

TZO Settings:

Email:	
Key:	

Dynamic DNS Table:

Select	State	Hostname	UserName	Service	Status

- *Enable* – when selected, enable DHCP server (IP addresses from the following range will be dynamically assigned to network devices);
- *D-DNS Provider* – select the type of D-DNS service (provider): DynDNS.org, TZO.com, No-IP.com
- *Custom* – another provider selected by user. In this case, you need to specify the provider's name (*Hostname*) and address (*Interface*).

DynDns/No-IP Settings:

- *UserName* – user name;
- *Password* – authorization password on the service selected for operation with D-DNS.

'Dynamic DNS Table' table with the list of available DNS displayed in this section. To add a record, click the 'Add' button. To remove/modify a record, click the 'Remove'/'Modify' button for the selected record.

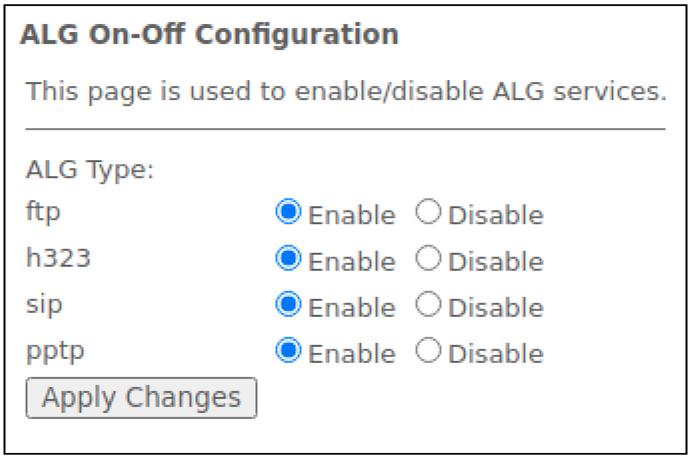
The 'Firewall' submenu. Firewall configuration

The 'ALG' submenu. Enable/disable ALG services

This section is used to enable/disable ALG services.

Application-level gateway (ALG) — NAT router component that understands an application protocol and, when packets of that protocol pass through, modifies them so that users behind the NAT can use the protocol.

Services Firewall ALG



ALG On-Off Configuration

This page is used to enable/disable ALG services.

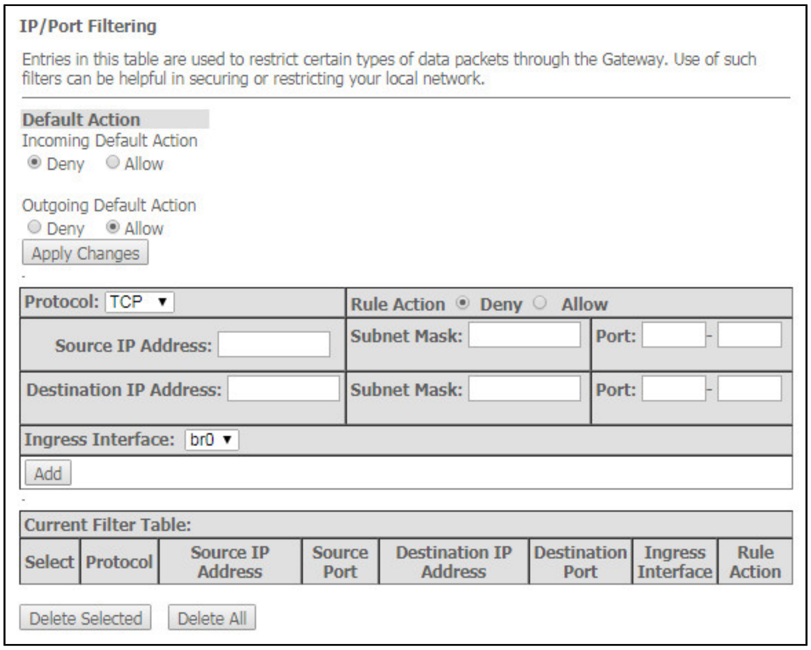
ALG Type:

ftp	● Enable	○ Disable
h323	● Enable	○ Disable
sip	● Enable	○ Disable
pptp	● Enable	○ Disable

The 'IP/Port Filtering' submenu. Address Filtering Settings

This section is used to configure address filtering. The IP Filtering function filters router traffic by IP addresses and ports.Using these filters can be useful to protect or restrict the local network.

Services Firewall IP/Port Filtering



IP/Port Filtering

Entries in this table are used to restrict certain types of data packets through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Default Action

Incoming Default Action
● Deny ○ Allow

Outgoing Default Action
○ Deny ● Allow

Protocol: TCP ▼	**Rule Action** ● Deny ○ Allow	
Source IP Address:	**Subnet Mask:**	**Port:** -
Destination IP Address:	**Subnet Mask:**	**Port:** -
Ingress Interface: br0 ▼		

Current Filter Table:

Select	Protocol	Source IP Address	Source Port	Destination IP Address	Destination Port	Ingress Interface	Rule Action

Default action

- *Incoming Default Action Deny/Allow* – filtering for incoming packets;
- *Outgoing Default Action Deny/Allow* – filtering for outgoing packets.

To save the changes, click the 'Apply Changes' button.

To add a filter, fill in the appropriate fields and click the 'Add' button:

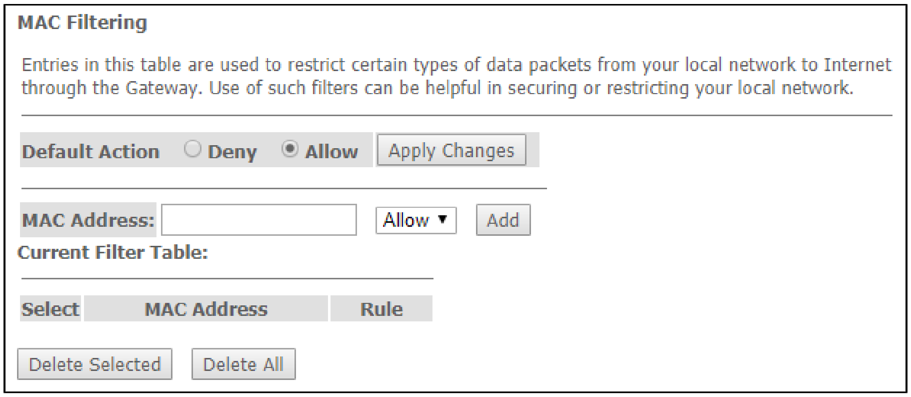
- *Protocol* – filtering protocol;
- *Rule Action Deny/Allow* – packet processing policy (deny/allow);
- *Source IP Address* – source IP address;
- *Destination IP Address* – destination IP address;
  - *Subnet mask* – subnet mask;
  - *Port* – port.
- *Ingress Interface* – ingress interface.

Added filters are displayed in the *'Current Filter Table'* located below. The entries in this table are used to restrict certain types of data packets pass through the gateway. To delete a specific filter, select the position and click the 'Delete selected' button, to delete all filters click 'Delete All'.

The 'MAC Filtering' submenu. Filtering Settings for MAC Addresses

MAC filtering allows traffic to be forwarded or blocked depending on source and destination MAC addresses. To change the mode click the 'Apply Changes' button.

Services Firewall MAC Filtering



MAC Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Default Action ○ Deny ● Allow

MAC Address: Allow ▼

Current Filter Table:

Select	MAC Address	Rule

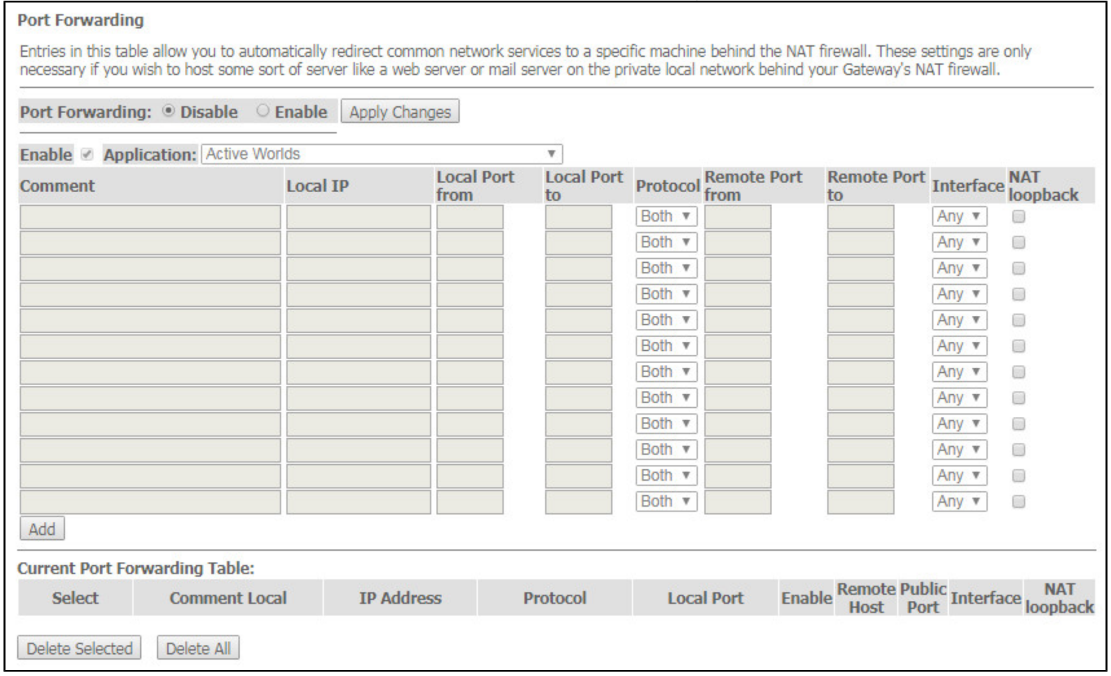
- *Default Action* – default settings:
    - *Deny* – when checked, traffic pass is prohibited by default;
    - *Allow* – when checked, traffic pass is allowed by default;
- *MAC Address* – MAC address for which limitation/access should be imposed.

Added filters are displayed in the *'Current Filter Table'* located below. The *'Rule'* field displays the type of created rule (*'Allow' - allowing* or *'Deny' - forbidding).* To remove selected items in the list, click 'Delete Selected'; click 'Delete All' to remove the whole list.

The 'Port Forwarding' submenu. Port forwarding configuration

'Current Port Forwarding Table' with port forwarding information is displayed in this section. Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your router's NAT firewall. To save the changes, click the 'Apply Changes' button.

Services Firewall Port Forwarding



Port Forwarding

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

Port Forwarding: ● **Disable** ○ **Enable** Apply Changes

Enable ☑ **Application:** Active Worlds ▼

Comment	Local IP	Local Port from	Local Port to	Protocol	Remote Port from	Remote Port to	Interface	NAT loopback
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□
				Both ▼			Any ▼	□

Add

Current Port Forwarding Table:

Select	Comment Local	IP Address	Protocol	Local Port	Enable	Remote Host	Public Port	Interface	NAT loopback

Delete Selected Delete All

To add the entry in the *'Current Port Forwarding Table'* check the *Enable* flag and fill in the corresponding fields:

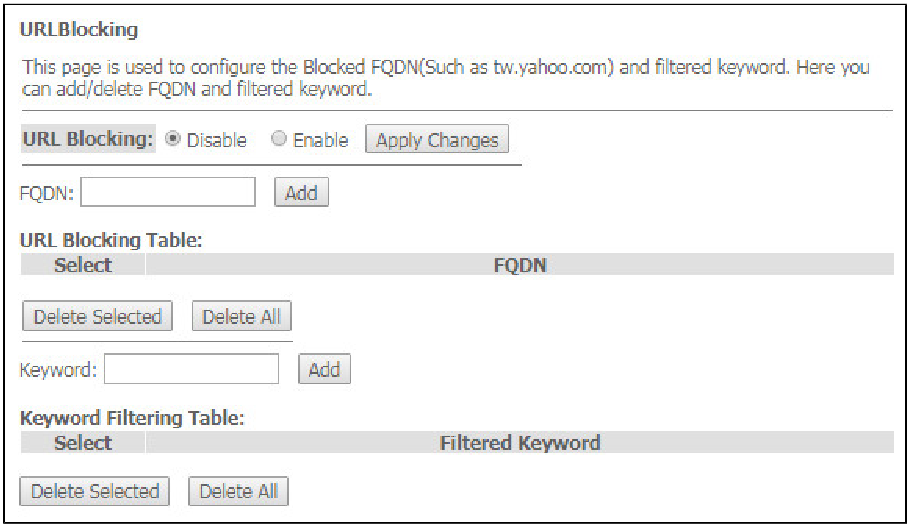
- *Port Forwarding (Enable/Disable)* – enable/disable port forwarding feature;
- *Application* – this menu has pre-settings for various applications port forwarding;
- *Comment* – comment;
- *Local IP* – local IP address to which forwarding is performed;
- *Local port from/to* – specify the range of local device ports for forwarding;
- *Protocol* – select protocol (TCP, UDP or both);
- *Remote port from/to* – specify the initial port of incoming connection. The *'Remote port to'* field will be filled automatically;
- *Interface* – select interface;
- *NAT-loopback* – NAT loop allows transferring queries from LAN to the router, thus, for example, you can check the work of rules created.

After filling the fields click the 'Add' button to add the entry. To delete a selected position, click the 'Delete Selected' button; to delete the whole table, click the 'Delete All' button.

The 'URL Blocking' submenu. Internet access restriction configuration

URL filter performs complete analysis and provides access control to specific Internet resources. This section sets and displays a list of forbidden/allowed URLs to visit. Here you can add the forbidden/allowed FQDN (Fully Qualified Domain Name) with the 'Add' button, filtering by keywords is also possible. The added restrictions are displayed in the *'URL Blocking Table'* and the *'Keyword Filtering Table'*. To remove a specific URL or keyword from the table, click on it and then on the 'Delete Selected' button. To delete all restrictions click the 'Delete All' button.

Services Firewall URL Blocking



URLBlocking

This page is used to configure the Blocked FQDN(Such as tw.yahoo.com) and filtered keyword. Here you can add/delete FQDN and filtered keyword.

URL Blocking: ● Disable ○ Enable [Apply Changes]

FQDN: [ ] [Add]

URL Blocking Table:

Select	FQDN

[Delete Selected] [Delete All]

Keyword: [ ] [Add]

Keyword Filtering Table:

Select	Filtered Keyword

[Delete Selected] [Delete All]

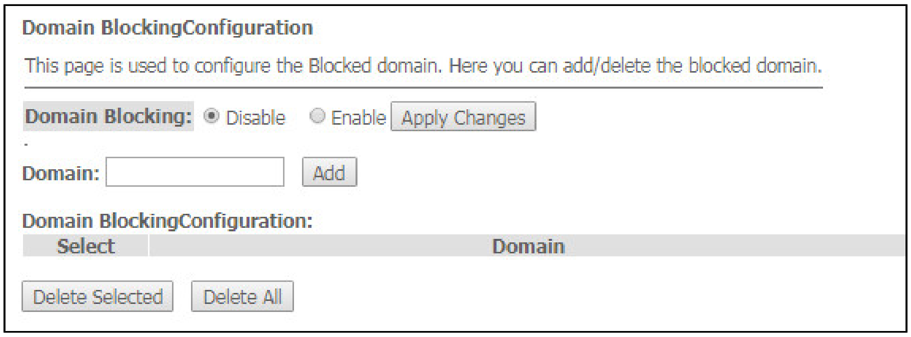
- *URL Blocking (Enable/Disable)* – enable/disable URL Blocking operation;
- *FQDN* – Fully Qualified Domain Name;
- *Keyword* – keyword.

To save the changes, click the 'Apply Changes' button.

The 'Domain Blocking' submenu. Domain blocking configuration

This section is used to set domain blocking.

Services Firewall Domain blocking



Domain BlockingConfiguration

This page is used to configure the Blocked domain. Here you can add/delete the blocked domain.

Domain Blocking: ● Disable ○ Enable [Apply Changes]

Domain: [ ] [Add]

Domain BlockingConfiguration:

Select	Domain

[Delete Selected] [Delete All]

To block the domain check *Enable*, fill the *Domain* field and click the 'Add' button.

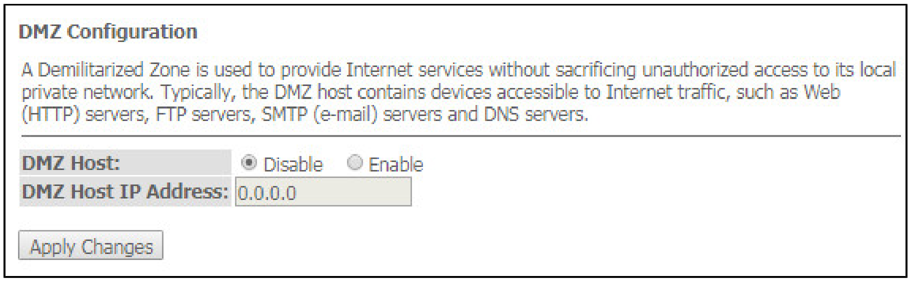
- *Domain Blocking (Enable/Disable)* – enable/disable blocking;
- *Domain* – domain name.

To save the changes, click the 'Apply Changes' button. All blocked domains are listed in the *'Domain BlockingConfiguration'* table, to remove a blocking for one domain, select it and click the 'Delete Selected' button, to remove all restrictions, click the 'Delete All' button.

The 'DMZ' submenu. Demilitarized Zone configuration

When an IP address is set in the *'DMZ host IP address field'*, all requests from external network, that do not satisfy the *'Port Forwarding'* rules, will be redirected to a DMZ host (a trusted host with the specified address in the local network).

Services Firewall DMZ



DMZ Configuration

A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

DMZ Host:	● Disable ○ Enable
DMZ Host IP Address:	0.0.0.0

[Apply Changes]

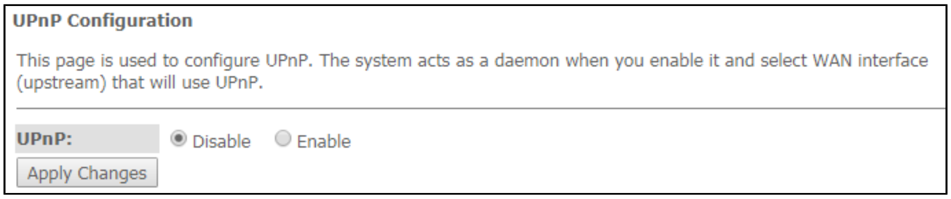
- *DMZ Host (Enable/Disable)* – enable/disable the host;
- *DMZ Host IP Address* – IP address.

To save the changes, click the 'Apply Changes' button.

The 'UPnP' submenu. Automated Setup of Network Devices

In this section you can configure Universal Plug and Play (UPnP™) function. UPnP ensures compatibility with network equipment, software and peripheral devices.

Services UPnP



UPnP Configuration

This page is used to configure UPnP. The system acts as a daemon when you enable it and select WAN interface (upstream) that will use UPnP.

UPnP: ● Disable ○ Enable

The use of UPnP requires NAT setup on an active WAN interface.

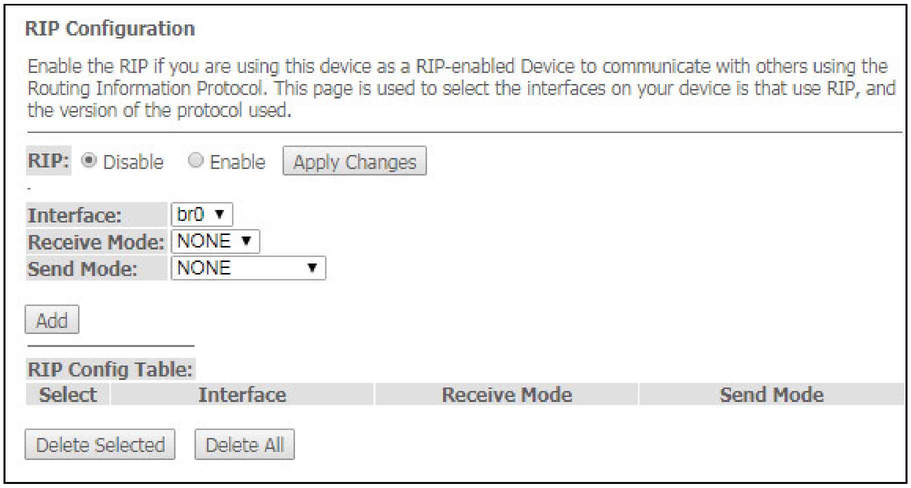
- *UPnP (Enable/Disable)* – enable/disable the UPnP function;
- *WAN Interface* – WAN interface on which the UPnP function will operate;

To save the settings, click the 'Apply Changes' button.

The 'RIP' submenu. Dynamic routing configuration

This section is used to select the interfaces on your device is that use RIP, and the version of the protocol used. Enable the RIP if you are using this device as a RIP-enabled Device to communicate with others using the Routing Information Protocol.

Services RIP



RIP Configuration

Enable the RIP if you are using this device as a RIP-enabled Device to communicate with others using the Routing Information Protocol. This page is used to select the interfaces on your device is that use RIP, and the version of the protocol used.

RIP: ● Disable ○ Enable

Interface: br0

Receive Mode: NONE

Send Mode: NONE

RIP Config Table:

Select	Interface	Receive Mode	Send Mode

- *RIP (Enable/Disable)* – enable/disable the use of dynamic routing protocol RIP;

To accept and save the settings, click the 'Apply Changes' button.

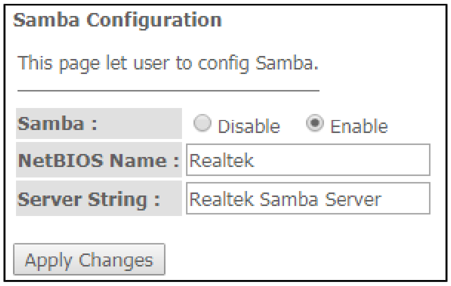
- *Interface* – interface on which RIP will be started;
- *Receive Mode* – incoming packets processing mode (NONE, RIP1, RIP2, both);
- *Send Mode* – sending mode (NONE, RIP1, RIP2, RIP1 COMPAT).

Interfaces with the support for RIP are displayed in the *'RIP Config Table'*. To delete all entries in the table click the 'Delete All' button; to delete one position from the list select it and click 'Delete Selected'.

The 'Samba' submenu. Configuration of Samba users

In this submenu you can configure Samba users.

Services Samba Samba



Samba Configuration

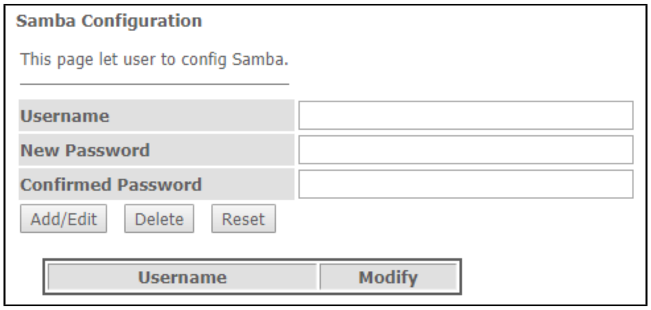
This page let user to config Samba.

Samba :	○ Disable ● Enable
NetBIOS Name :	Realtek
Server String :	Realtek Samba Server

- *Samba Enable/Disable* – enable/disable Samba configuration;
- *Server String* – server name.

In the *'Accounts'* section you can create personal Samba accounts.

Services Samba Accounts



Samba Configuration

This page let user to config Samba.

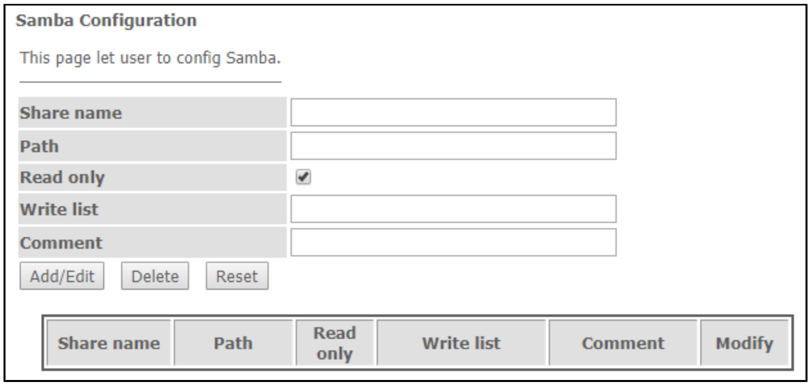
Username	
New Password	
Confirmed Password	

Username	Modify

- *Username* – account name;
- *New password* – password;
- *Confirmed Password* – password confirmation.

The *'Shares'* section is used to add Samba library.

Services Samba Shares



Samba Configuration

This page let user to config Samba.

Share name	
Path	
Read only	☑
Write list	
Comment	

Share name	Path	Read only	Write list	Comment	Modify

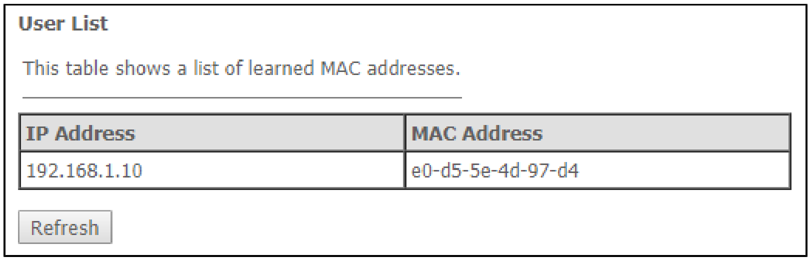
- *Share name* – library name;
- *Path* – path to library;
- *Read only* – read only;
- *Write list* – list of accounts who can change files in the library;
- *Comment* – comment for the library.

The 'Advance' menu. Advanced settings

The 'ARP Table' menu. View ARP cache

This section shows a list of learned MAC addresses. The ARP efficiency depends a lot on ARP cache presented in every host. The cache contains Internet addresses and corresponding hardware addresses. Every record created in the cache is stored for 5 minutes.

Advance ARP table



User List

This table shows a list of learned MAC addresses.

IP Address	MAC Address
192.168.1.10	e0-d5-5e-4d-97-d4

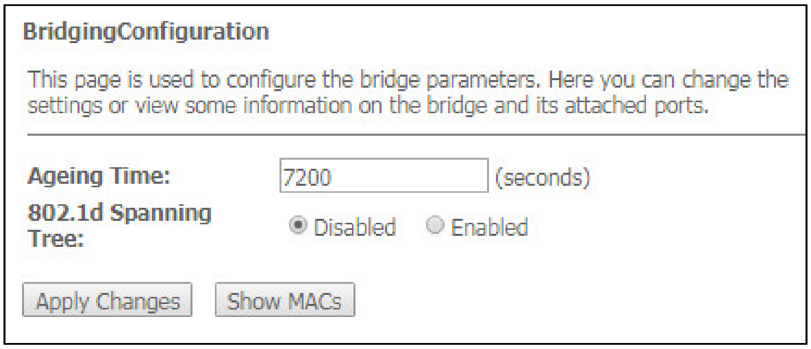
- *IP Address* – IP address of the client;
- *MAC Address* – address of the client.

To update the information, click the 'Refresh' button.

The 'Bridging' submenu. Bridging parameters configuration

In this section you can configure bridge parameters. Here you can configure aging time of addresses in MAC table as well as to enable/disable 802.1d Spanning Tree.

Advance Bridging



BridgingConfiguration

This page is used to configure the bridge parameters. Here you can change the settings or view some information on the bridge and its attached ports.

Ageing Time: 7200 (seconds)

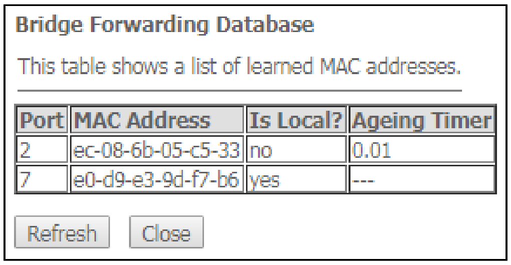
802.1d Spanning Tree: ● Disabled ○ Enabled

- *Ageing Time* – address lifetime (s);
- *802.1d Spanning Tree (Enable/Disable)* – enable/disable 802.1d Spanning Tree protocol.

To save the changes, click the 'Apply Changes' button.

To view the information about bridge and its connected ports click the 'Show MACs' button.

Advance Bridging Show MACs



Bridge Forwarding Database

This table shows a list of learned MAC addresses.

Port	MAC Address	Is Local?	Ageing Timer
2	ec-08-6b-05-c5-33	no	0.01
7	e0-d9-e3-9d-f7-b6	yes	---

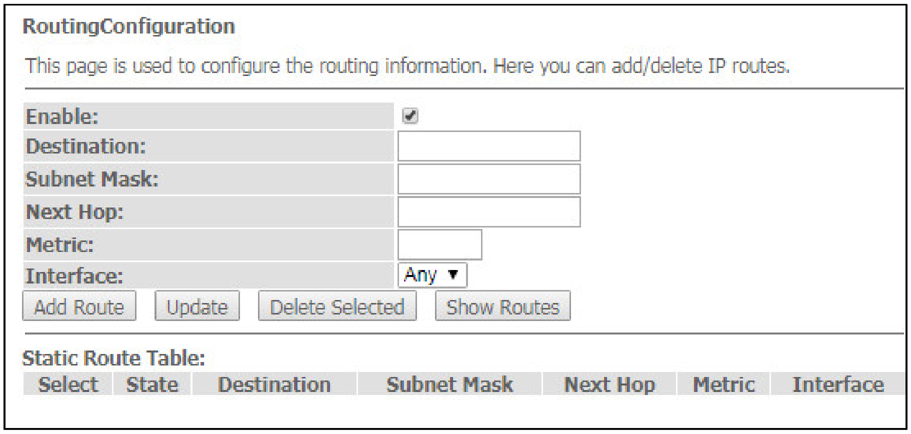
- *Port* – port number;
- *MAC Address* – MAC address;
- *Is Local* – local address;
- *Ageing Timer* – address lifetime.

To update the information in the table, click the 'Refresh' button, to close the table, click 'Close'.

The 'Routing' submenu. Routing configuration

This submenu is used to configure static routing.

Advance Routing



RoutingConfiguration

This page is used to configure the routing information. Here you can add/delete IP routes.

Enable:	☑
Destination:	
Subnet Mask:	
Next Hop:	
Metric:	
Interface:	Any ▼

Static Route Table:

Select	State	Destination	Subnet Mask	Next Hop	Metric	Interface

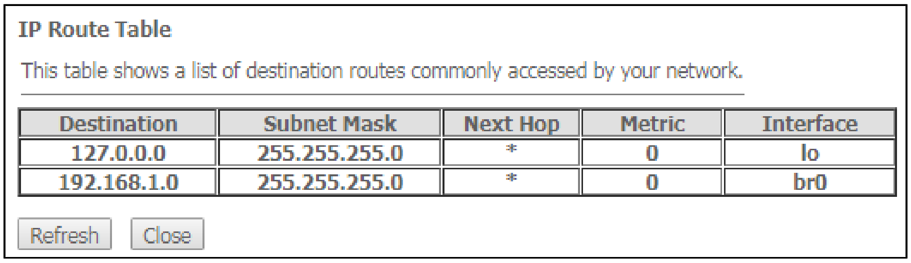
To add the static route check *'Enable'*, fill the corresponding fields and click 'Add Route'.

- *Enable* – flag for route adding;
- *Destination* – destination address;
- *Subnet Mask* – subnet mask;
- *Next Hop* – next host;
- *Metric* – metric;
- *Interface* – interface.

Added static routes are displayed in the *'Static Route Table'*. To update the information in the table, click the 'Update' button, to delete the position from the table select it and click 'Delete Selected''.

To view the routes that the device often accesses, click the 'Show Routes' button, then the *'IP Route Table'* will be displayed.

Advance Routing Show Routes



IP Route Table

This table shows a list of destination routes commonly accessed by your network.

Destination	Subnet Mask	Next Hop	Metric	Interface
127.0.0.0	255.255.255.0	*	0	lo
192.168.1.0	255.255.255.0	*	0	br0

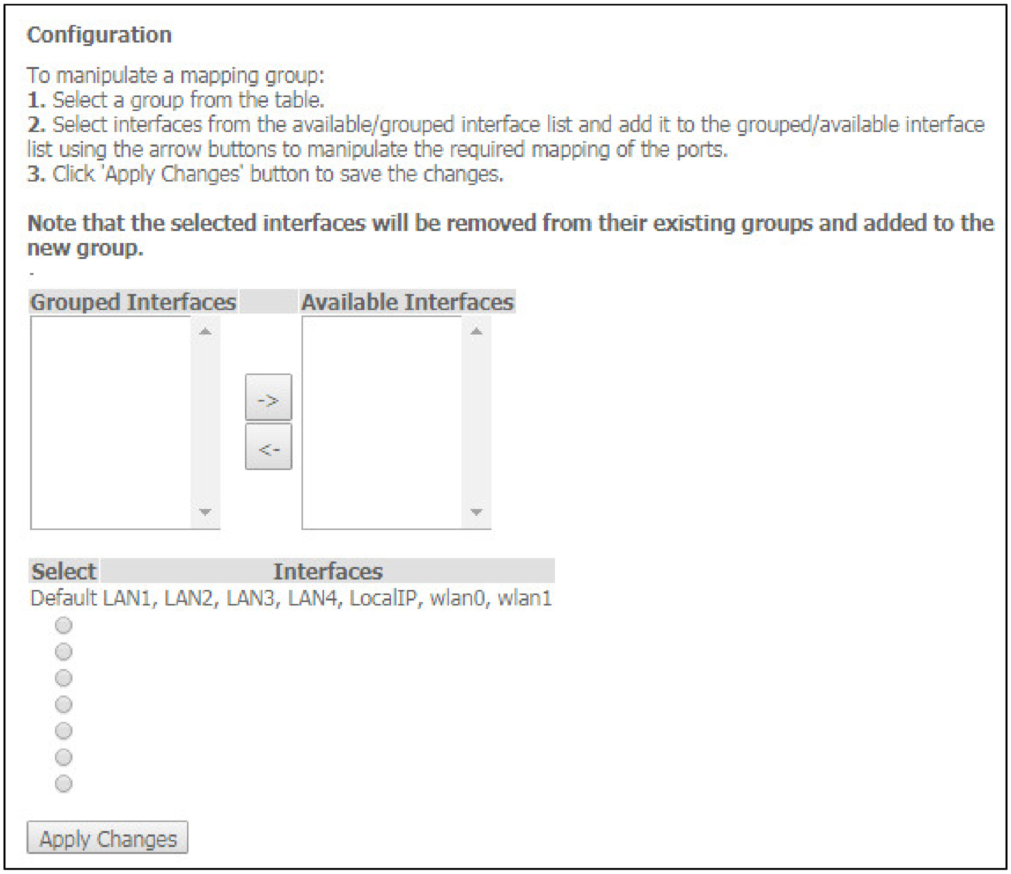
To update the information in the table, click the 'Refresh' button, to close the table, click 'Close'.

The 'Bridging grouping' submenu. Interface grouping

In this section you can group the interfaces. By default all interfaces are in the same group. To place an interface to a new group, you should:

1. Select a new group from the list below;
2. Select interfaces from the 'Available Interface' list;
3. Click the arrow to transfer the interfaces into the group;
4. Apply the actions by clicking the 'Apply Changes' button

Advance Bridge grouping



Configuration

To manipulate a mapping group:
1. Select a group from the table.
2. Select interfaces from the available/grouped interface list and add it to the grouped/available interface list using the arrow buttons to manipulate the required mapping of the ports.
3. Click 'Apply Changes' button to save the changes.

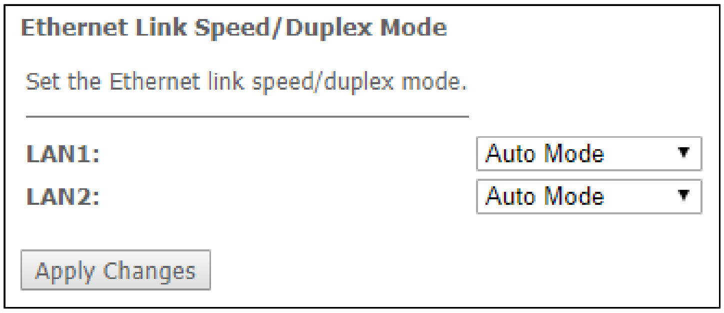
Note that the selected interfaces will be removed from their existing groups and added to the new group.

Select	Interfaces
Default	LAN1, LAN2, LAN3, LAN4, LocalIP, wlan0, wlan1
○	
○	
○	
○	
○	
○	
○	

The 'Link mode' submenu. LAN ports configuration

In this submenu you can set the LAN ports operation mode. *LAN1/2* – operation mode configuration; available modes: *10M Half Mode, 10M Full Mode, 100M Half Mode, 100M Full Mode* and *Auto Mode* (auto-negotiation mode).

Advance Link mode



Ethernet Link Speed/Duplex Mode

Set the Ethernet link speed/duplex mode.

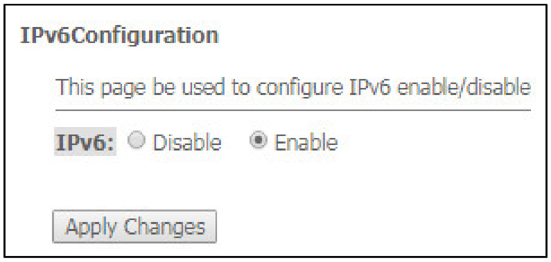
LAN1: Auto Mode
LAN2: Auto Mode

To save the changes, click the 'Apply Changes' button.

The 'IPv6' submenu. IPv6 configuration

In this section you can enable/disable IPv6 operation. For this you should check *'Enable/Disable'*.

Advance IPv6 IPv6



IPv6Configuration

This page be used to configure IPv6 enable/disable

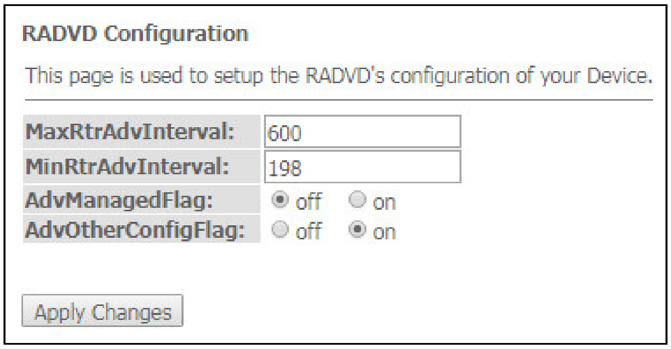
IPv6: ○ Disable ● Enable

To save the changes, click the 'Apply Changes' button.

The 'RADVD' submenu. RADVD configuration

In this submenu you can configure RADVD (Router Advertisement Daemon).

Advance IPv6 RADVD



RADVD Configuration

This page is used to setup the RADVD's configuration of your Device.

MaxRtrAdvInterval:	600
MinRtrAdvInterval:	198
AdvManagedFlag:	● off ○ on
AdvOtherConfigFlag:	○ off ● on

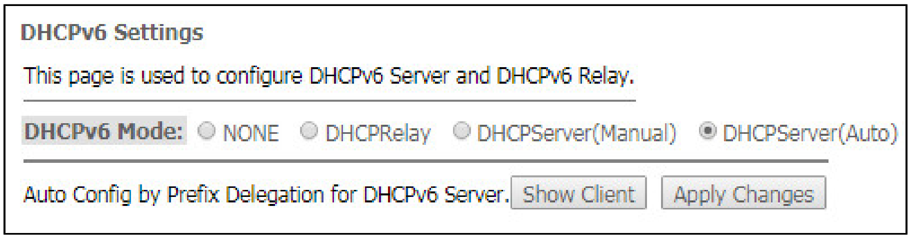
- *MaxRtrAdvInterval* – maximum RA (Router Advertisement) sending interval;
- *MinRtrAdvInterval* – minimum RA sending interval;
- *AdvManagedFlag* – enable/disable 'Managed' flag sending in RA;
- *AdvOtherFlag* – enable/disable Other RA flag sending.

To save the changes, click the 'Apply Changes' button.

The 'DHCPv6 setting' submenu. DHCPv6 server configuration

This submenu is used to configure DHCPv6 server. By default, it operates in auto configuration mode (DHCPServer(Auto)) via prefix delegation.

Advance IPv6 DHCPv6



DHCPv6 Settings

This page is used to configure DHCPv6 Server and DHCPv6 Relay.

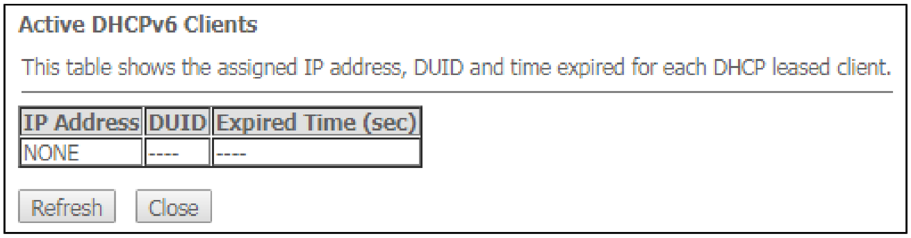
DHCPv6 Mode: ○ NONE ○ DHCPRelay ○ DHCPServer(Manual) ● DHCPServer(Auto)

Auto Config by Prefix Delegation for DHCPv6 Server.

- *DHCPv6 Mode* – select mode:
  - *NONE* – operation without DHCP server;
  - *DHCPRelay* – DHCP repeater operation mode;
  - *DHCPServer (Manual)* – manual configuration of DHCP server;
  - *DHCPServer(Auto)* – DHCP server auto-provisioning.

To save the changes, click the 'Apply Changes' button. After clicking on the 'Show Client' button, a table of active DHCPv6 server IP addresses will be displayed.

Advance IPv6 DHCPv6 Show Client



Active DHCPv6 Clients

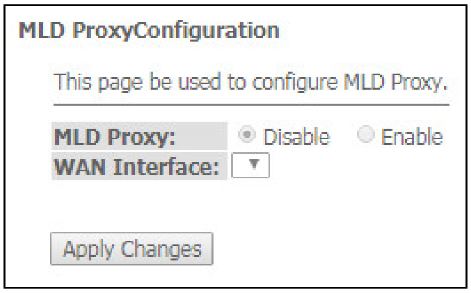
This table shows the assigned IP address, DUID and time expired for each DHCP leased client.

IP Address	DUID	Expired Time (sec)
NONE	----	----

The 'MLD proxy' submenu. MLD proxy function configuration

In this section you can enable/disable MLD-proxy operation. For this you should check *'Enable/Disable'*.

Advance IPv6 MLD proxy



MLD ProxyConfiguration

This page be used to configure MLD Proxy.

MLD Proxy: ● Disable ○ Enable

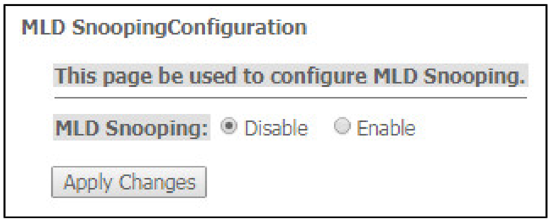
WAN Interface: ▼

To save the changes, click the 'Apply Changes' button.

The 'MLD snooping' submenu. MLD snooping function configuration

In this section you can enable/disable MLD-snooping operation. For this you should check *'Enable/Disable'*.

Advance IPv6 MLD snooping



MLD SnoopingConfiguration

This page be used to configure MLD Snooping.

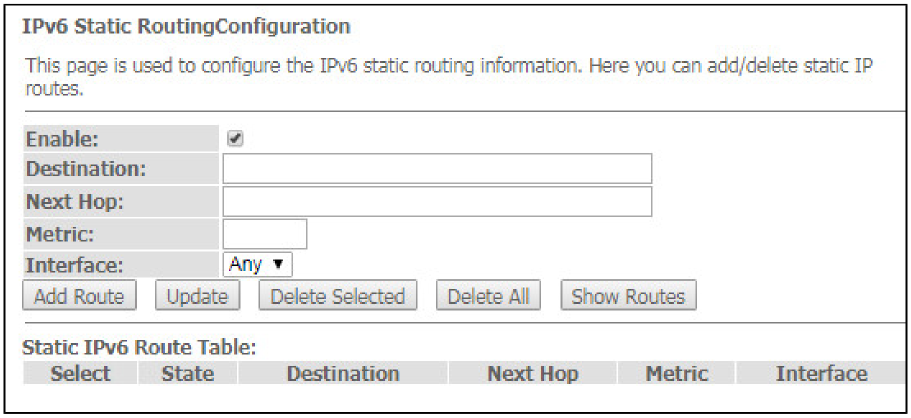
MLD Snooping: ● Disable ○ Enable

To save the changes, click the 'Apply Changes' button.

The 'IPv6 routing' routing. IPv6 routes configuration

This section configures static IPv6 routes.

Advance IPv6 IPv6 routing



IPv6 Static RoutingConfiguration

This page is used to configure the IPv6 static routing information. Here you can add/delete static IP routes.

Enable:	☑
Destination:	
Next Hop:	
Metric:	
Interface:	Any ▼

Static IPv6 Route Table:

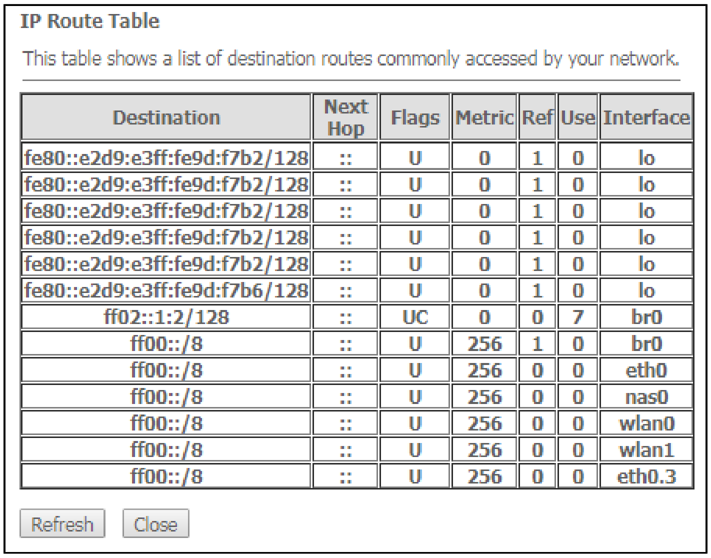
Select	State	Destination	Next Hop	Metric	Interface

- *Enable* – flag for route adding;
- *Destination* – destination address;

- *Next Hop* – next host;
- *Metric* – metric;
- *Interface* – interface.

To add IPv6 Routing, fill in the appropriate fields and click the 'Add Route' button: Added routes are displayed in the *'Static IPv6 Route Table'*, to update the information click the 'Update' button. To delete the whole table, click the 'Delete All' button; To delete one route, select it and click the 'Delete Selected' button. The 'Show Routes' button displays a table of static IPv6 routes that the network typically accesses.

Advance IPv6 IPv6 routing Show Routes



IP Route Table

This table shows a list of destination routes commonly accessed by your network.

Destination	Next Hop	Flags	Metric	Ref	Use	Interface
fe80::e2d9:e3ff:fe9d:f7b2/128	::	U	0	1	0	lo
fe80::e2d9:e3ff:fe9d:f7b2/128	::	U	0	1	0	lo
fe80::e2d9:e3ff:fe9d:f7b2/128	::	U	0	1	0	lo
fe80::e2d9:e3ff:fe9d:f7b2/128	::	U	0	1	0	lo
fe80::e2d9:e3ff:fe9d:f7b2/128	::	U	0	1	0	lo
fe80::e2d9:e3ff:fe9d:f7b6/128	::	U	0	1	0	lo
ff02::1:2/128	::	UC	0	0	7	br0
ff00::/8	::	U	256	1	0	br0
ff00::/8	::	U	256	0	0	eth0
ff00::/8	::	U	256	0	0	nas0
ff00::/8	::	U	256	0	0	wlan0
ff00::/8	::	U	256	0	0	wlan1
ff00::/8	::	U	256	0	0	eth0.3

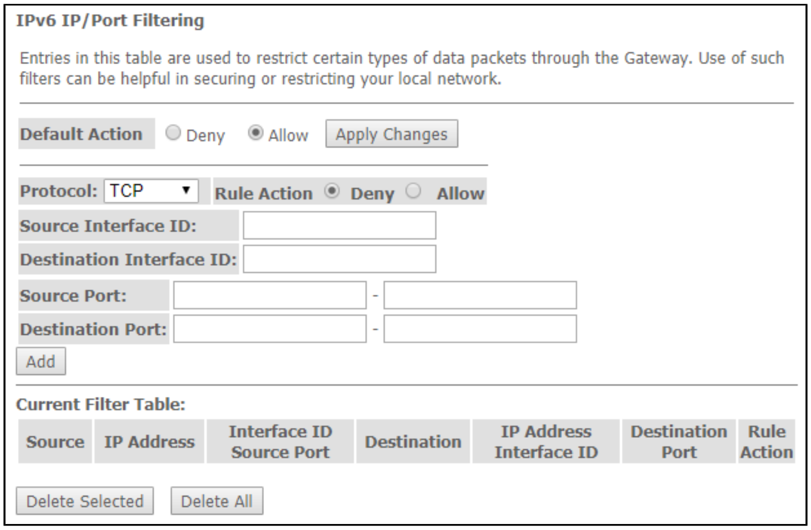
- *Destination* – destination network;
- *Next Hop* – nest host
- *Flags* – flags;
- *Metric* – metric;
- *Ref* – route source;
- *Use* – route usage;
- *Interface* – interface through which the specified route is available.

To update the table click 'Refresh'; to close it click 'Close'

The 'IPv6 IP/ Port filtering' submenu. Packet filtering configuration

Use this page to configure the filtering of data packets transmitted through the gateway.

Advance IPv6 IP/Port filtering



IPv6 IP/Port Filtering

Entries in this table are used to restrict certain types of data packets through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Default Action ○ Deny ● Allow

Protocol: TCP ▾ Rule Action ● Deny ○ Allow

Source Interface ID:

Destination Interface ID:

Source Port: -

Destination Port: -

Current Filter Table:

Source	IP Address	Interface ID Source Port	Destination	IP Address Interface ID	Destination Port	Rule Action

- *Default Action* – default action:
  - *Deny* – when checked, traffic pass is prohibited by default;
  - *Allow* – when checked, traffic pass is allowed by default;
- *Protocol* – select protocol;
- *Source Interface ID* – source interface;

- *Destination Interface ID* – destination interface;
- *Source Port* – source port;
- *Destination Port* – destination port.

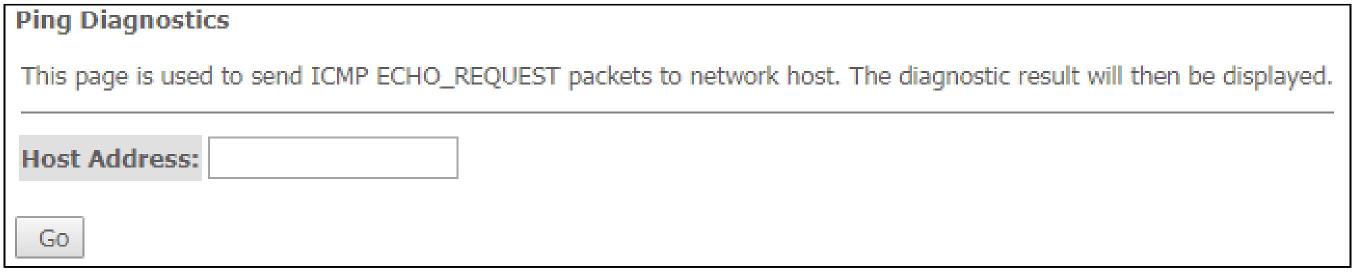
To add a filter fill the corresponding fields and click the *'Add'* button. Added filters are displayed in the *'Current Filter Table'*. To delete the whole table, click the 'Delete All' button; To delete one filter, select it and click the 'Delete Selected' button.

The 'Diagnostics' menu

The 'Ping' submenu. Checking the Availability of Network Devices

Use this menu to test the availability of network devices with Ping utility.

Diagnostics Ping



Ping Diagnostics

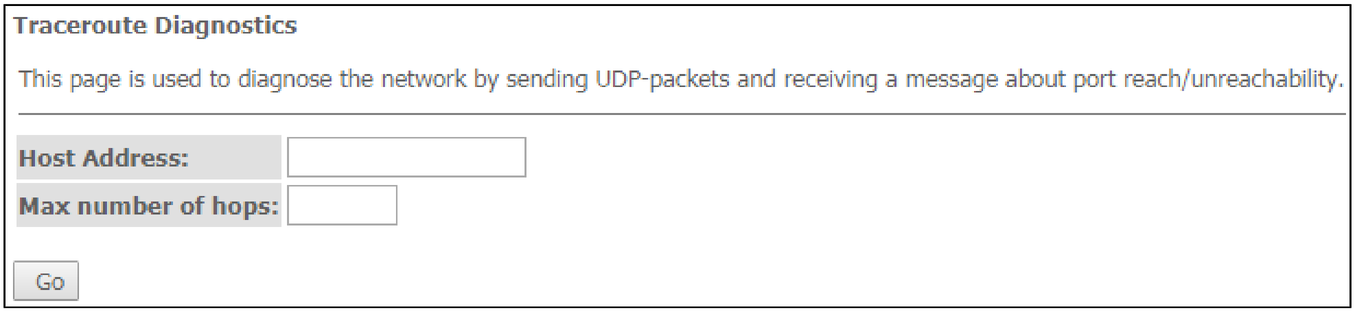
This page is used to send ICMP ECHO_REQUEST packets to network host. The diagnostic result will then be displayed.

To test the availability of the connected device, enter its IP address into the *'Host Address'* field and click the 'Go' button.

The 'Traceroute' submenu

This submenu is intended for network diagnostics by sending UDP packets and receiving a message about port availability/inaccessibility.

Diagnostics Traceroute



Traceroute Diagnostics

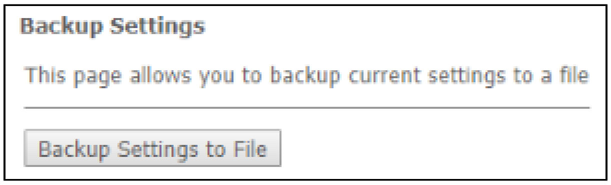
This page is used to diagnose the network by sending UDP-packets and receiving a message about port reach/unreachability.

The 'Admin' menu

Device management section. In this menu, you can configure passwords, time, configurations, etc.

The 'Settings' submenu. Configuration restore and reset

Admin Settings Backup Settings

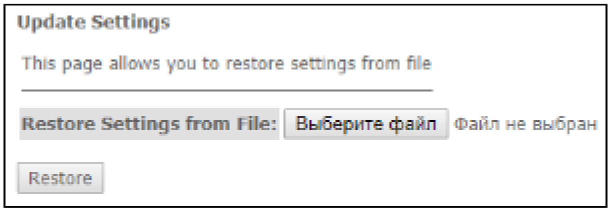


Backup Settings

This page allows you to backup current settings to a file

In this section, you can copy the current settings to a file *(Backup Settings)* by clicking on the 'Backup Settings to File' button.

Admin Settings Update Settings



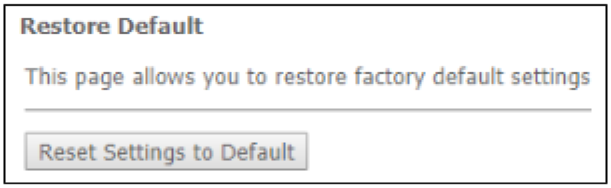
Update Settings

This page allows you to restore settings from file

Restore Settings from File: Файл не выбран

In this section, you can restore settings from a file that was previously saved *(Update Settings)* with the 'Restore' button.

Admin Settings Restore Default



Restore Default

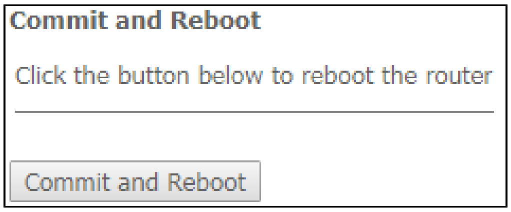
This page allows you to restore factory default settings

In this section you can reset the current settings to the factory default settings *(Restore Default)*, click the 'Reset Settings to Default' button.

The 'Commit/Reboot' submenu. Saving changes and rebooting the device

Click the 'Commit and Reboot' button to reboot the device or to save changes in system memory. The rebooting process takes a few minutes to complete.

Admin Commit/Reboot



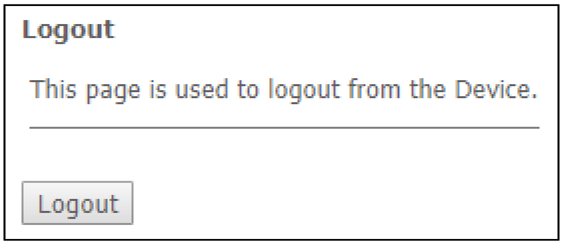
Commit and Reboot

Click the button below to reboot the router

The 'Logout' submenu

In this section it is possible to log out by clicking on the 'Logout' button.

Admin Logout



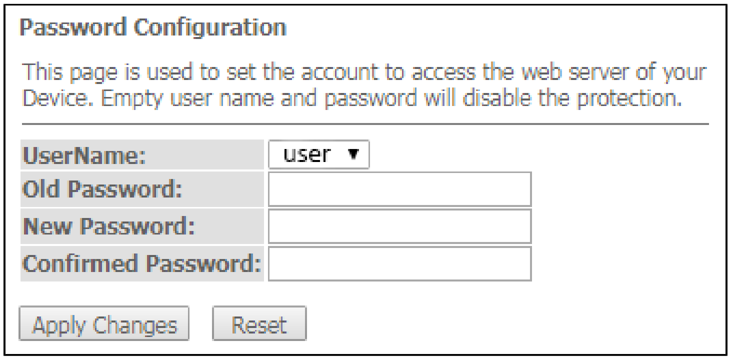
Logout

This page is used to logout from the Device.

The 'Password' submenu. Access control configuration (setting passwords)

In this section you can change a password to access the device.

Admin Password



Password Configuration

This page is used to set the account to access the web server of your Device. Empty user name and password will disable the protection.

UserName:	user ▼
Old Password:	
New Password:	
Confirmed Password:	

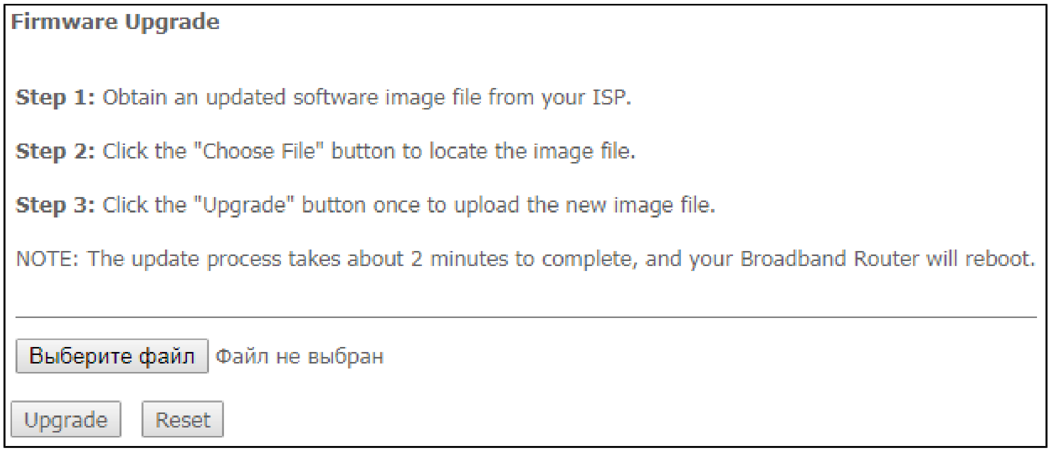
To change the password, you must enter the existing password in the *'Old Password'* field, then the new password in *'New Password'* and confirm it with *'C onfirmed Password'*.

To confirm and save changes, click the 'Apply changes' button. Click the 'Reset' button to reset the value.

The 'Firmware upgrade' submenu. Software Update

To update firmware, it is necessary to select firmware file by using the 'Select file' button and click 'Upgrade'. To reset the value, click the 'Reset' button.

Admin Firmware upgrade



Firmware Upgrade

Step 1: Obtain an updated software image file from your ISP.

Step 2: Click the "Choose File" button to locate the image file.

Step 3: Click the "Upgrade" button once to upload the new image file.

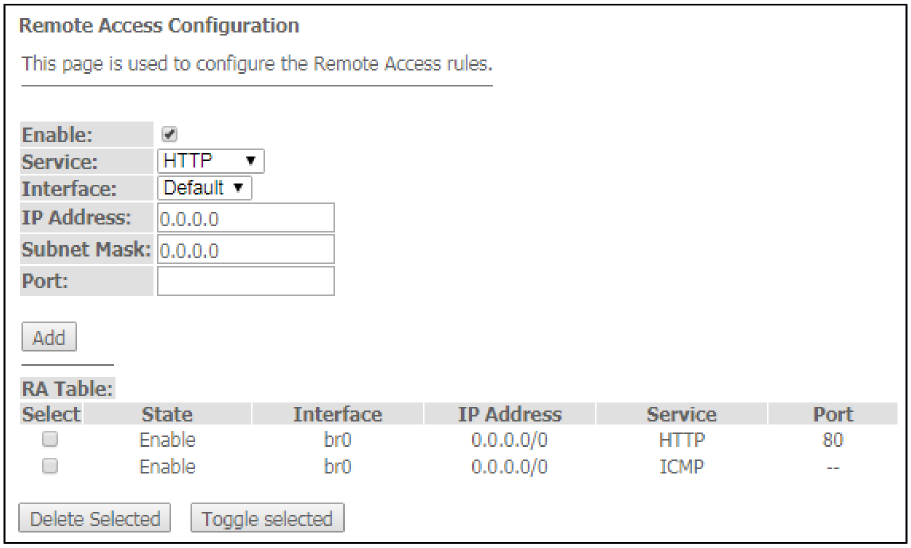
NOTE: The update process takes about 2 minutes to complete, and your Broadband Router will reboot.

Do not switch off or reboot the device during the update. The process may take several minutes. The device will be automatically rebooted when the update is completed.

The 'Remote Access' submenu. Remote access rules configuration

In this section you can configure remote access rules via HTTP/Telnet/ICMP protocols.

Admin Remote Access



Remote Access Configuration

This page is used to configure the Remote Access rules.

Enable:	☑
Service:	HTTP ▾
Interface:	Default ▾
IP Address:	0.0.0.0
Subnet Mask:	0.0.0.0
Port:	

RA Table:

Select	State	Interface	IP Address	Service	Port
□	Enable	br0	0.0.0.0/0	HTTP	80
□	Enable	br0	0.0.0.0/0	ICMP	--

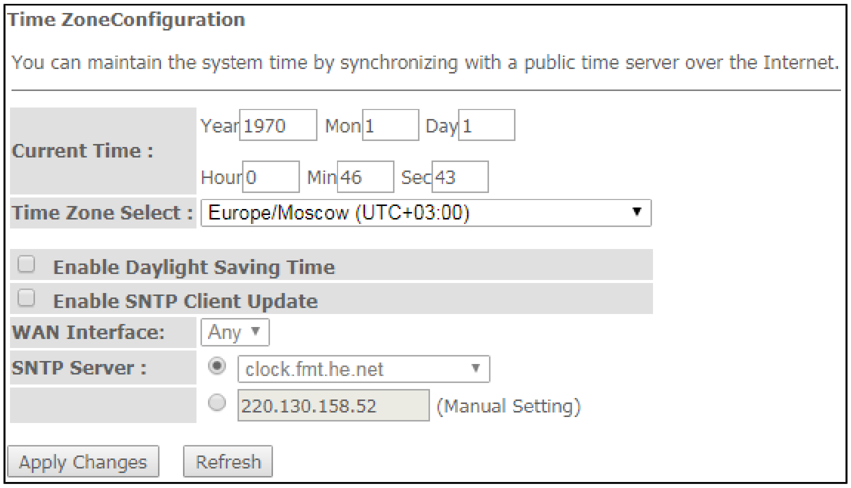
- Enable – enabling the rule to add;
- Service – selection of the protocol used;
- Interface – interface to which the rule applies;
- IP Address – source IP adress;
- Subnet Mask – subnet mask;
- Port – destination port.

To add a rule fill the corresponding fields and click the *'Add'* button. Added rules are displayed in the *'RA Table'*. To activate/deactivate the selected rule, click the *'Toggle selected'* button. To delete one rule, select it with a flag in the *Select* column and click the 'Delete Selected' button.

The 'Time zone' submenu. System time configuration

In this section you can configure the device system time. Synchronization with accurate online time-servers is available.

Admin Time zone



Time ZoneConfiguration

You can maintain the system time by synchronizing with a public time server over the Internet.

Current Time :	Year 1970 Mon 1 Day 1 Hour 0 Min 46 Sec 43
Time Zone Select :	Europe/Moscow (UTC+03:00) ▾
□ Enable Daylight Saving Time	
□ Enable SNTP Client Update	
WAN Interface:	Any ▾
SNTP Server :	● clock.fmt.he.net ▾
	○ 220.130.158.52 (Manual Setting)

- *Current time* – current time;
- *Time Zone Select* – timezone;
- *Enable Daylight Saving Time* – enable daylight saving time;
- *Enable SNTP Client Update* – enable time synchronization via SNMP;
- *WAN Interface* – interface for time update;
- *SNTP Server* – preferred time server.

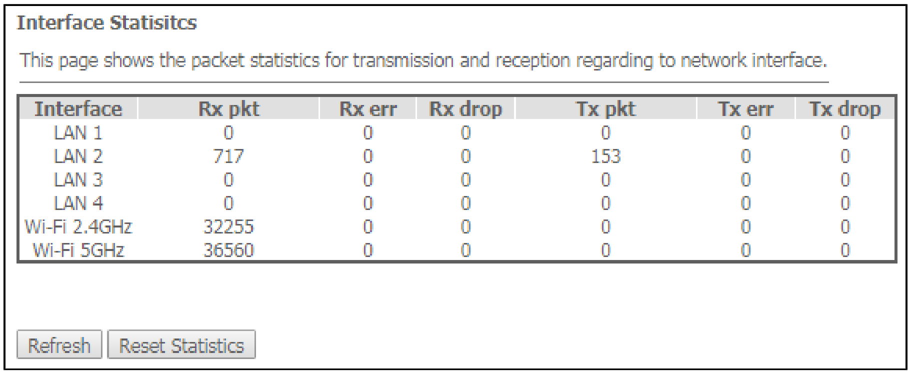
To save the changes click the 'Apply Changes' button, update the information click 'Refresh'.

The 'Statistics' menu. Traffic flow information for device ports

The 'Interface' submenu. Information about timers and errors

This section displays timers/errors for packets for each interface:

Statistics Interface



Interface Statisitcs

This page shows the packet statistics for transmission and reception regarding to network interface.

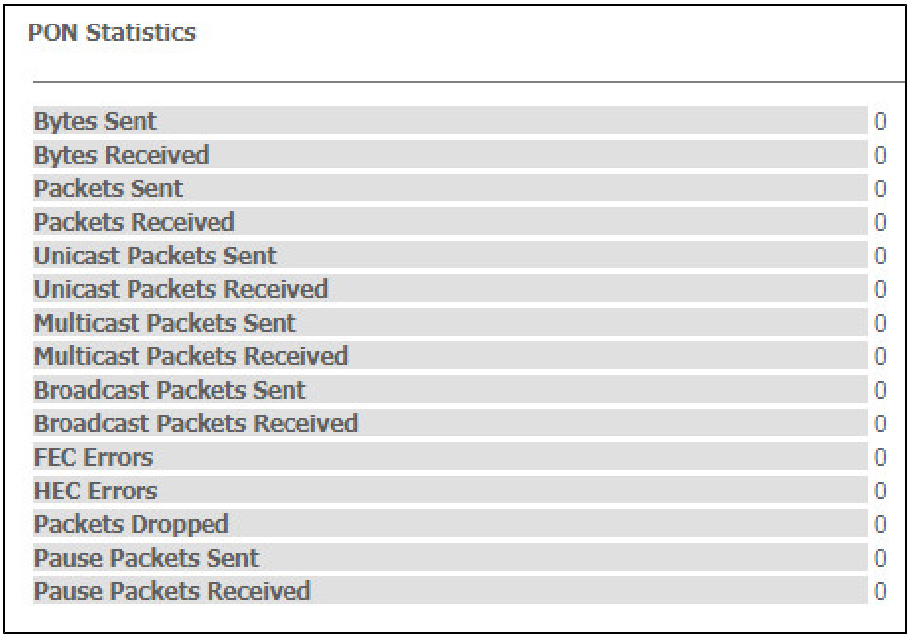
Interface	Rx pkt	Rx err	Rx drop	Tx pkt	Tx err	Tx drop
LAN 1	0	0	0	0	0	0
LAN 2	717	0	0	153	0	0
LAN 3	0	0	0	0	0	0
LAN 4	0	0	0	0	0	0
Wi-Fi 2.4GHz	32255	0	0	0	0	0
Wi-Fi 5GHz	36560	0	0	0	0	0

- *Interface* – interface;
- *Rx pkt* – packets received;
- *RX err* – errors on receive;
- *Rx drop* – rejected on receive;
- *Tx pkt* – packets sent;
- *Tx err* – transmission error;
- *Tx drop* – rejected on transmission.

The 'PON' submenu

This section displays timers for the optical interface:

Statistics PON



PON Statistics

Bytes Sent	0
Bytes Received	0
Packets Sent	0
Packets Received	0
Unicast Packets Sent	0
Unicast Packets Received	0
Multicast Packets Sent	0
Multicast Packets Received	0
Broadcast Packets Sent	0
Broadcast Packets Received	0
FEC Errors	0
HEC Errors	0
Packets Dropped	0
Pause Packets Sent	0
Pause Packets Received	0

- *Bytes Sent* – transmitted bytes;
- *Bytes Received* – received bytes;
- *Packets Sent* – packets transmitted;
- *Packets Received* – packets received;
- *Unicast Packet Sent* – Unicast packets transmitted;
- *Unicast Packet Received* – Unicast packets received;
- *Multicast Packets Sent* – Multicast packets transmitted;
- *Multicast Packets Received* – Multicast packets received;
- *Broadcast Packet Sent* – Broadcast packets transmitted;
- *Broadcast Packet Received* – Broadcast packets received;
- *FEC Errors* – FEC errors
- *Packets Dropped* – packets rejected.

The list of changes

Document version	Suitable firmware version	Issue date	Revisions
Version 1.3	1.3.3	06.2021	Synchronization with Firmware version 1.3.3
Version 1.2	1.3.2	11.2020	Synchronization with Firmware version 1.3.2
Version 1.1	1.3.0	04.2020	Second issue
Version 1.0	1.2.1	01.2020	First issue