FiberTechnic®

User Manual

v. 3.0

FiberTechnic® Ftech G-01

Contents

1 Note 1
1.1 Installation Precautions 1
1.2 Precautions for Use 1
2 Introduce 3
2.1 Product Feature 3
2.2 Environmental Requirements 4
2.3 Product Operation Introduction 4
2.4 Product Interface Definitions 5
2.5 Product LED Definitions 5
2.6 Device Connection 5
2.7 Network Application 6
3 ONU Local WEB login 6
3.1 ONU and PC physical Connection 6
3.2 Computer Access ONU Local WEB 7
4 ONU Registration Information Configuration(When adaptive to GPON mode) 8
4.1 ONU Registration Status View 8
4.2 ONU Optical Power Information View 8
4.3 ONU Registration LOID Configuration 9
4.4 ONU Registers SN Configuration 10
5 ONU Registration Information Configuration(When adaptive to EPON mode) 10
5.1 ONU Registration Status View 10
5.2 ONU Optical Power Information View 11
5.3 ONU Registration LOID Configuration 11
6 Internet Basic Configuration 12
6.1 Routing mode broadband Internet settings 13
6.1.1 PPPoE broadband Internet access in routing mode 13
6.1.2 DHCP broadband Internet access in routing mode 15
6.1.3 Static IP Broadband Internet Access In Routing Mode 18

6.2 Broadband Internet Access In Bridge Mode 21
6.3 View Broadband WAN Status 21
6.4 Delete Internet WAN Connection 22
7 ONU LAN configuration 22
7.1 LAN IP Address Configuration 23
8 Multicast / IPTV Service Basic Settings 24
9 ONU Device Management 24
9.1 Restore Default 24
9.2 Software Upgrade 25
9.3 Reboot Device 25
Concluding Remarks 26

1 Note

1.1 Installation Precautions

- Do not near flammable or conductive items, high temperature, direct sunlight or moist environment, or on PC chassis, and check whether other home equipment placed around stability
- Check the cable line. Test and confirm the ac or dc input voltage in the range of allowable, and direct current (dc) correct polarity.
- Unless the manufacturer has given permission, please use the volume and the types of the power supply with Ming products attached adapter
- To prevent lightning damage to the product, make sure that the power outlet and the power adapter ground are securely grounded. In the thunderstorm, be sure to unplug the power and all the connections.
- Equipment shall be less than 10% of the input voltage fluctuations, power plug with a refrigerator, hair dryer, electric iron not use the same socket.
- To avoid any damage to body by power socket overload, or damage to cause electric shock or fire plug, please check the power cord, if found damaged, please change immediately.
- Please place the equipment on the smooth plane and equipment cannot be placed on other items.
- Equipment is easy heat when working, should maintain the appropriate cooling space to avoid damage caused by overheating products. The elongated holes on the housing are designed for heat dissipation. Keep the ventilation clean and prevent the items from falling into the inside of the equipment. Doing so may cause damage or fire to the equipment. Do not spill liquid onto the surface of the equipment.

1.2 Precautions for Use

- Please read the user manual carefully before using the equipment and follow all the precautions on the user manual.
- Do not look straight at fiber which may damage the eyes. Please wear safet y glasses to effectively protect your eyes from damage. Wear the fiber cap wh en fiber no in use.
- Power off the device when it not in use.
- Please make sure the power switch is closed before plug the power supply, to avoid surge. Please be careful when remove the power supply, transformer temperature may be higher.
- For safety, please do not open the shell of equipment, especially equipment power on.

- Unplug the power supply before cleaning equipment. Use a soft dry cloth cleaning equipment, do not use the liquid or spray.
- Do not use this product connected to any electronic products unless got our engineer allow. because any wrong connection may cause electricity or fire danger.

2 Introduce

The double-mode series ONU is GPON/EPON adaptive terminal products to meet the telecom, radio and television FTTH fiber to the home multi-service access. This series of products based on mature and stable, cost-effective Gigabit GPON/EPON technology, integration Gigabit and Fast Ethernet switching technology and powerful routing and forwarding technology. With high bandwidth, high reliability, easy management and good quality of service (QoS) guarantee, the technical performance of the equipment meets the requirements of ITU G.984 equipment and other specifications.

It is easy to manage and can be flexibly upgraded, expanded, and networked. The equipment has been implemented with GPON/EPON central office equipment (Huawei / ZTE / FiberHome / Alcatel-Lucent) OLT) interoperability, composed of Gigabit systems, to meet access needs of the two-in-one video, data services, FTTH / FTTO.

2.1 Product Feature

- Support both GPON and EPON mode adaptation
- Internet service access
- Fully in line with GPON ITU-T G.984 standard, using GPON uplink 1.25G, downlink 2.5G standard
- Support G.984 standard, China Telecom CTC2.1&3.0
- Support bidirectional FEC, supports the RS (255, 239) FEC decoding
- Support PPPoE, DHCP, static IP broadband service access
- Support NAT, static routing, port forwarding
- Support data encryption, VLAN transparent, vlan tag, vlan trunk
- Support up and down traffic limit function
- Supports port loop detection / port link status detection / power dying gasp alarm
- Support OLT remote upgrade / WEB local upgrade function
- Supports broadcast storm suppression
- Support port flow control

- Support managed by different manufacturers OLT work as SNMP-agent. Easy to install and maintain
- Provide a variety of fault alarm function, easy to fault diagnosis
- Support AES-128 decryption, support key generation and switching
- Support DBA technology and priority Dual management model to ensure minimum bandwidth requirements for users

2.2 Environmental Requirements

Operation temperature：-0°C～50°C

Operation humidity：10%—90%(Non-condensing)

Power adapter input: 12V / 0.5A

Transmitted optical power: 0.5~5dBm

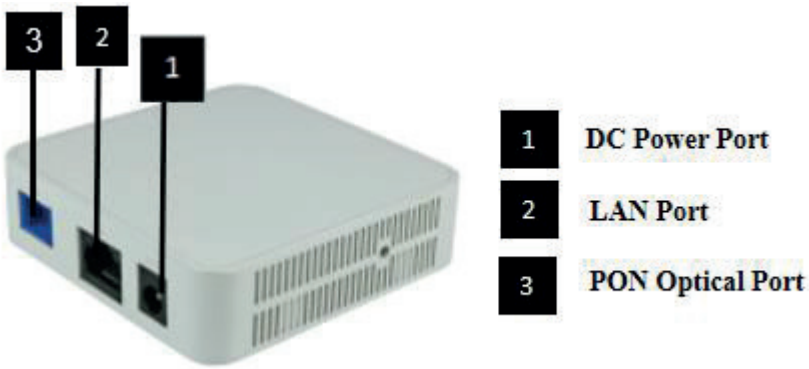
Input optical power: -8 ~ -28dBm

2.3 Product Operation Introduction

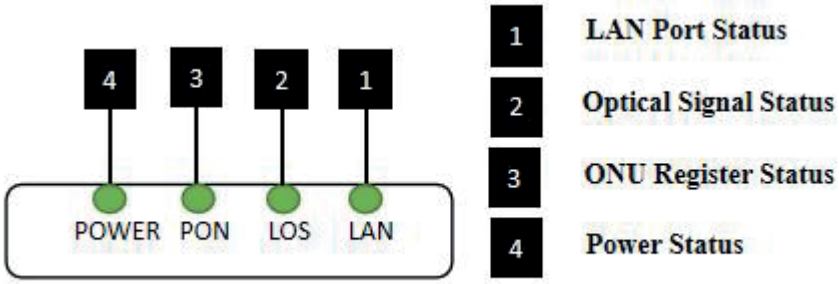
The dual-mode ONU is a "combination" of GPON and EPON ONU. Compared with the single-mode EPON/GPON ONU, the main difference lies in the registration process. The dual-mode ONU adds a pre-judgment to the current application system (EPON/GPON). That is, the dual-mode ONU first switches mode, and then starts and completes registration process in the corresponding mode. When the ONU runs normally in the current system, its configuration and processing of various messages are basically the same as single-mode EPON/GPON ONU.

This product mode switch depends on the packet sent by the front-end OLT device to the ONU. When ONU receives the packet sent by the EPON OLT, the ONU automatically switches to the EPON mode after detecting it. In this case, the ONU can be regarded as the EPON ONU. When the ONU receives the packet sent by the GPON OLT, the ONU automatically switches to the GPON mode after detecting it. In this case, the ONU can be used as the GPON ONU.

2.4 Product Interface Definitions



2.5 Product LED Definitions

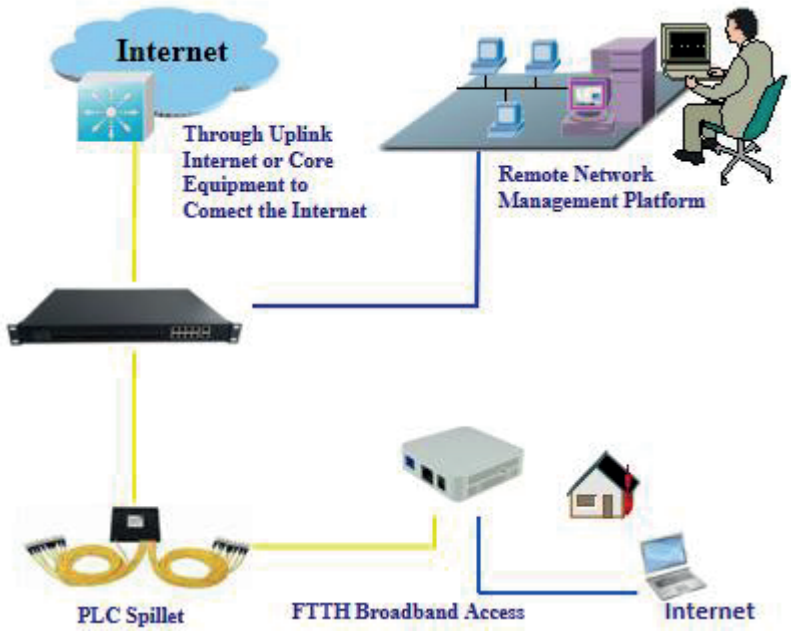


Indicator			Description
1	LAN	LAN port status	On: Ethernet connection is normal; king: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;
2	LOS	XPON optical signals	On: Optical power lower than receiver sensitivity ; Off: Optical in normal
3	PON	ONT Register	On: Success to register to OLT; Blinking: In process of registering to OLT; Off: Failed to register to OLT or no normal optical signal input;
4	PWR	Power status	On: The ONT is power on; Off: The ONT is Power off;

2.6 Device Connection

- Connecting the fiber: Insert the SC fiber connector into the PON connector on the rear panel of the ONU.
- Connect the Ethernet cable: Connect the RJ-45 Ethernet cable to any LAN port of the ONU and the home device, ie, the computer, IPTV set-top box.
- Connect the AC adapter: Plug the AC / DC adapter into the AC wall jack and the ONU 12V DC power jack.

2.7 Network Application

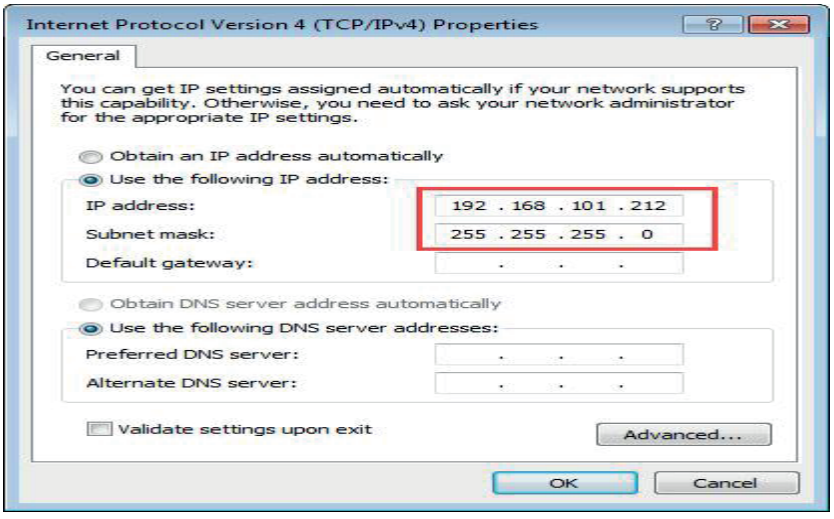


3 ONU Local WEB login

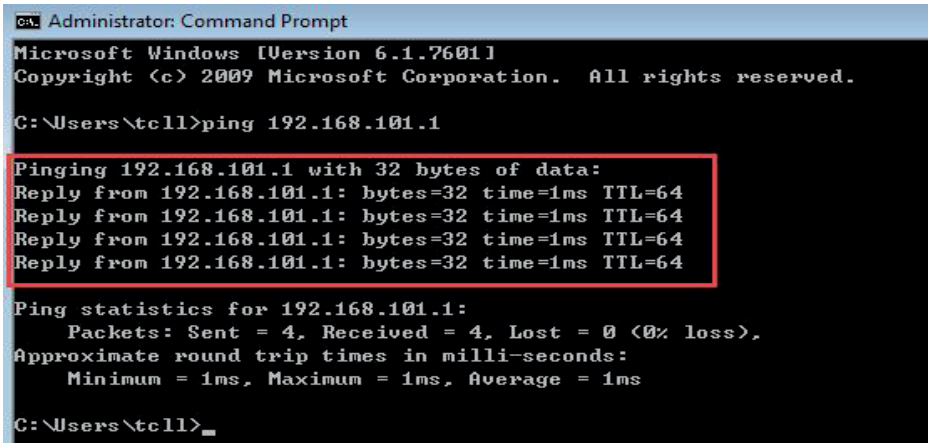
3.1 ONU and PC physical Connection

a) Connect your computer's local network card to the LAN port or ETH port of the ONU via a network cable.

b) Set the IP address of the computer's local network card to **192.168.101.X (X: 2-254)**.

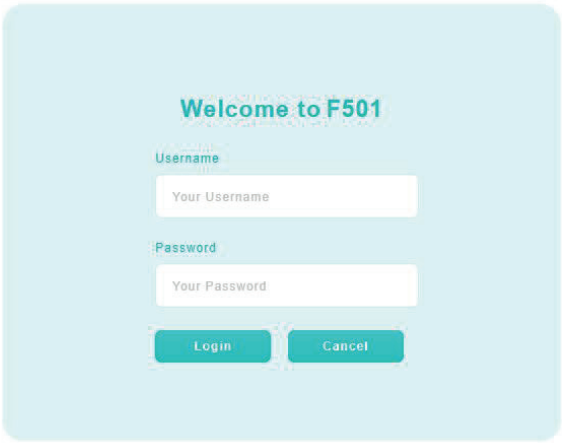


c) The computer opens the cmd window. To ensure that the computer can ping ONU management ip address **192.168.101.1**

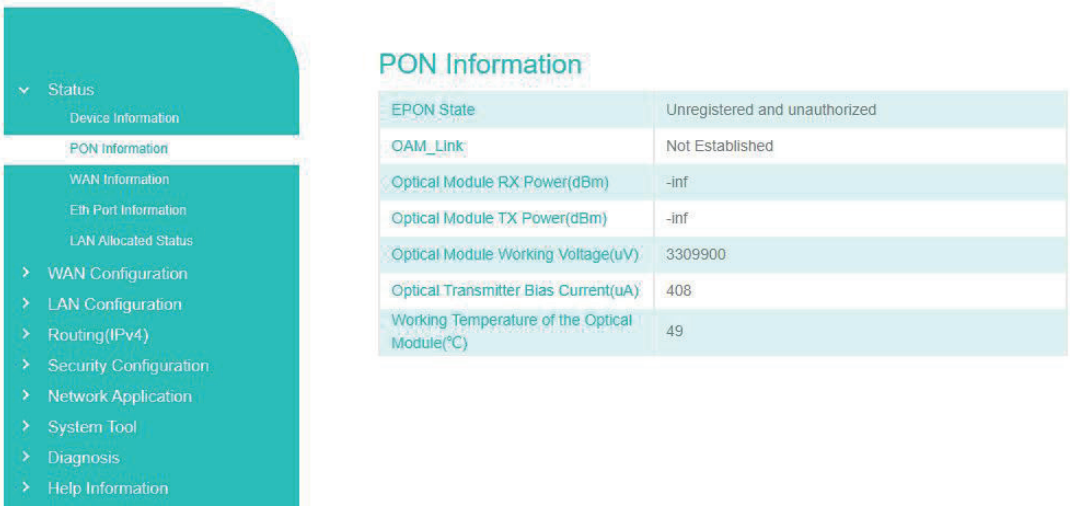


3.2 Computer Access ONU Local WEB

In the case # 3.1 computer can communicate with the ONU, open the computer's **Web browser (IE, Firefox, google)**, copy and paste the ONU access URL: http: //192.168.101.1, pop-up as follows ONU prompt landing page:



Enter the ONU super login user: **adminisp** password: **adminisp** Click "**Login**" button, there will be the following ONU main login interface:

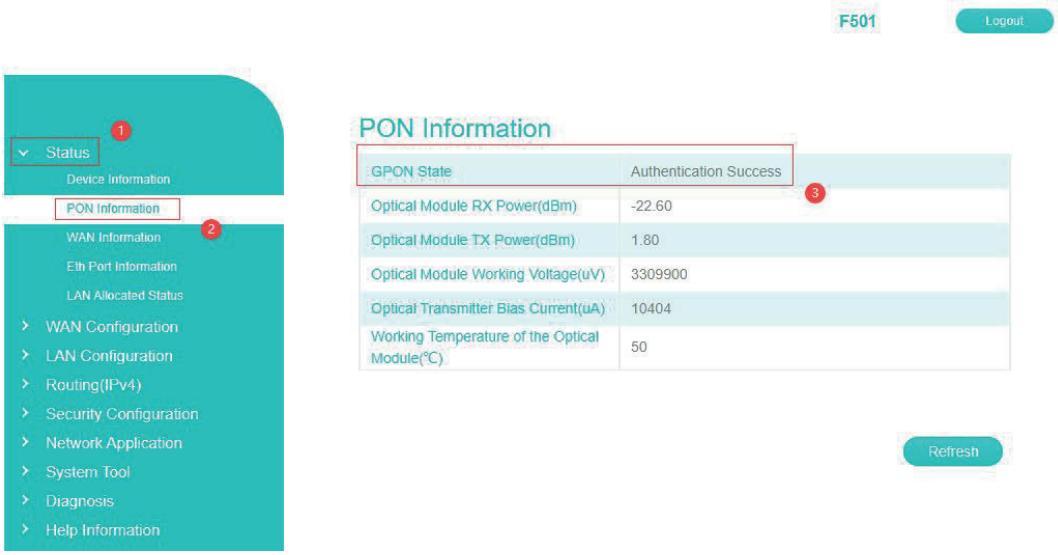


After entering the main interface of the ONU, the ONU can be set up further. For details, see the following setup guide.

4 ONU Registration Information Configuration(When adaptive to GPON mode)

4.1 ONU Registration Status View

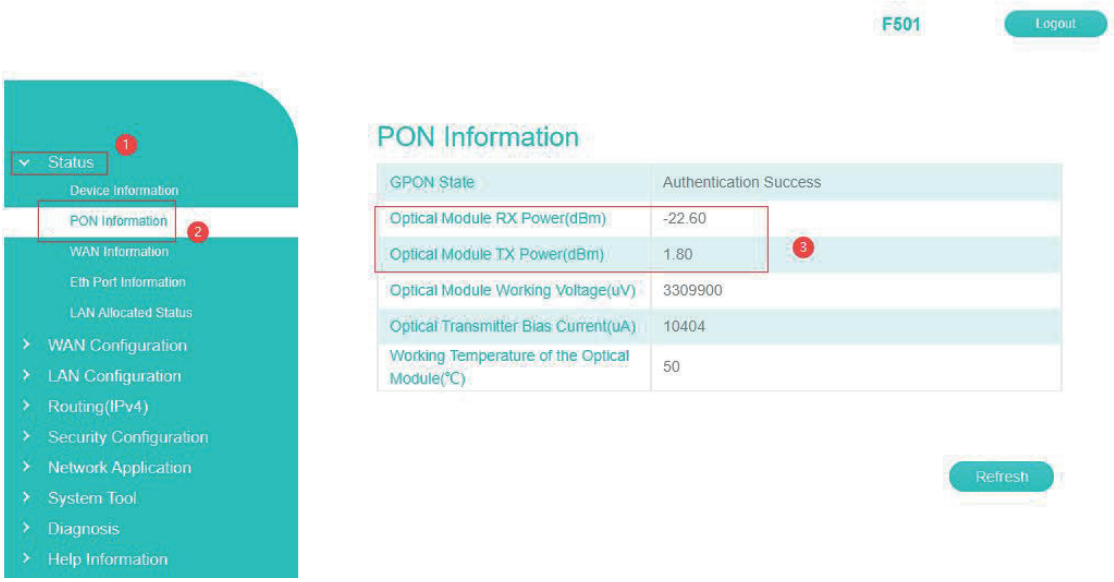
web login ONU select the **Status -> PON inform**, you can check whether the ONU registered successfully:



4.2 ONU Optical Power Information View

web login ONU select the **Status ->PON inform,** you can view the ONU input

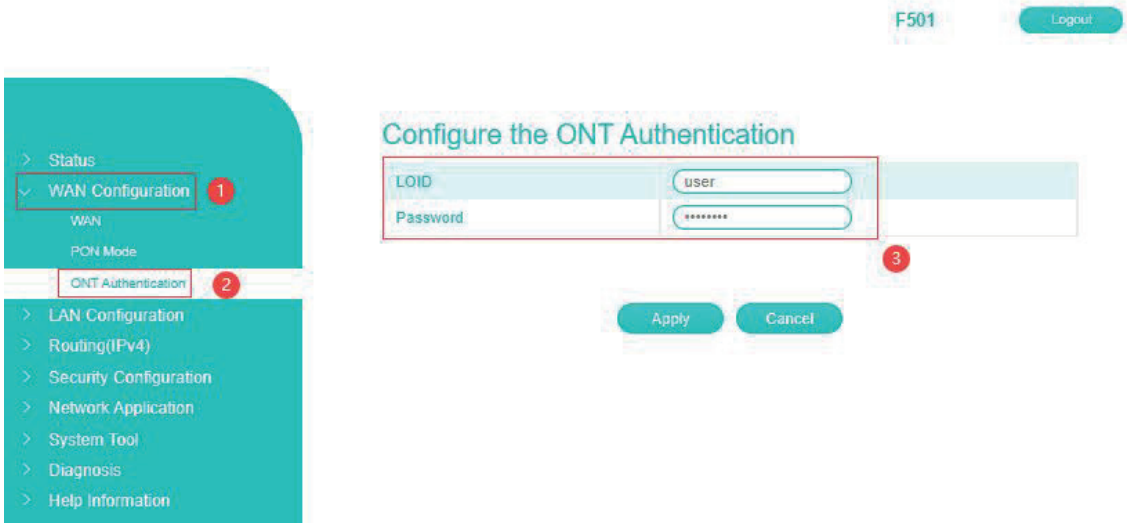
and output optical power information:



4.3 ONU Registration LOID Configuration

The LOID of the ONU is mainly applicable to the authentication mode of LOID and LOID + Password. General ONU authentication mose is SN, and rarely use the LOID authentication mode, so normal circumstances do not need to configure the LOID. The LOID of the ONU is configured as follows:

1.web login ONU select the **WAN Configuration-> ONT Authentication,** you can set and view the ONU LOID and password:

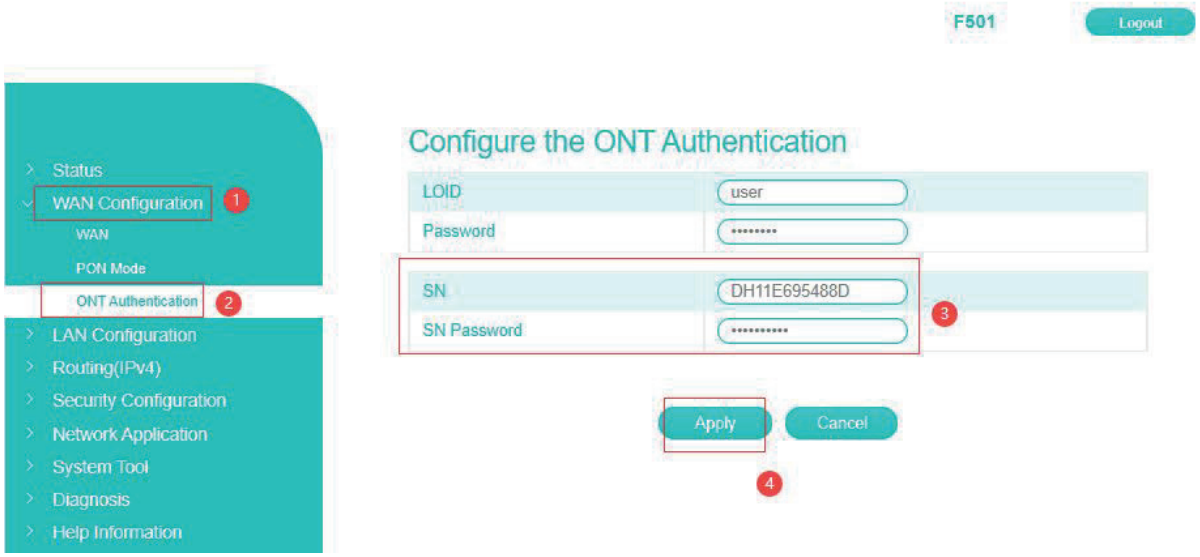


2.After completing the LOID and password settings, you can click the "Apply" button below to complete the setup.

4.4 ONU Registers SN Configuration

The SN of the ONU is mainly applicable to the OLT SN authentication mode by default. Sometimes it may be related to the problem of compatibility, need to modify the default SN of the ONU, you can refer to the following ways to modify, SN by 4 characters prefix (letters) + 8 ASCII code. The standard specifies this length.

1.web login ONU and select the **WAN Configuration-> ONT Authentication,** you can set and view the ONU SN and password (generally do not need to modify):

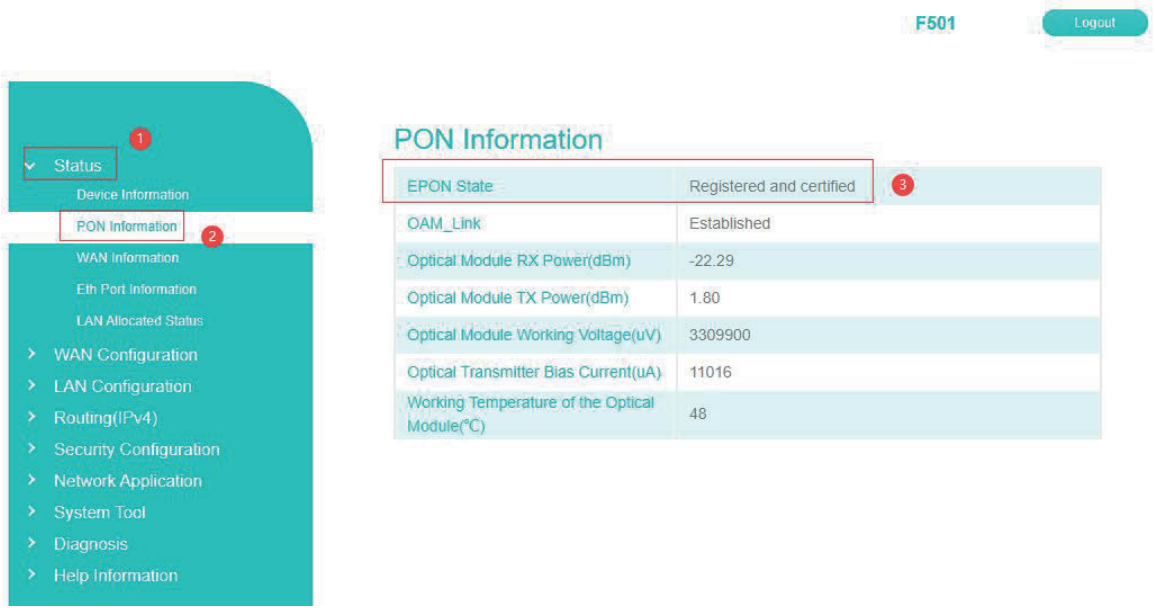


2.After completing the SN and password settings, you can click the "Apply" button below to complete the setup.

5 ONU Registration Information Configuration(When adaptive to EPON mode)

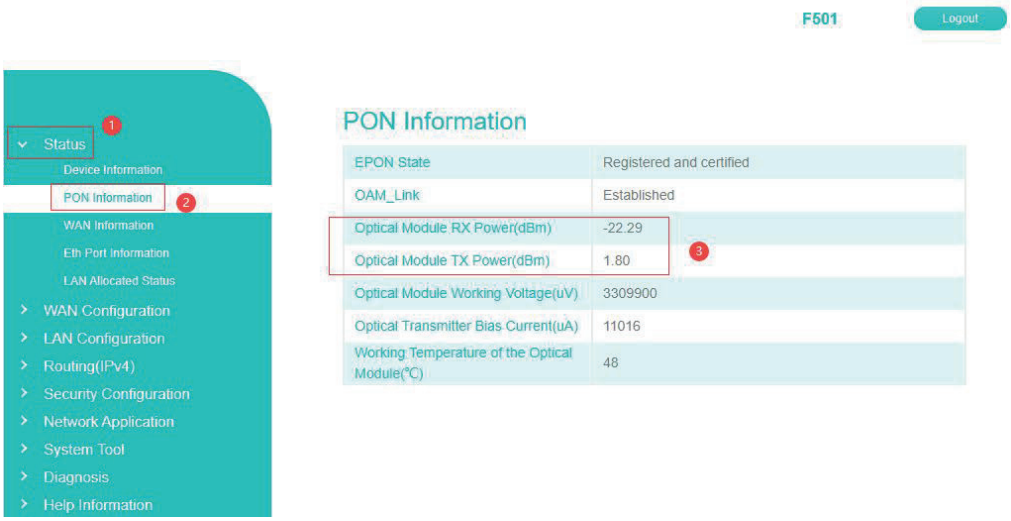
5.1 ONU Registration Status View

web login ONU select the **Status ->PON inform**, you can check whether the ONU registered successfully:



5.2 ONU Optical Power Information View

web login ONU select the **Status ->PON inform,** you can view the ONU input and output optical power information:

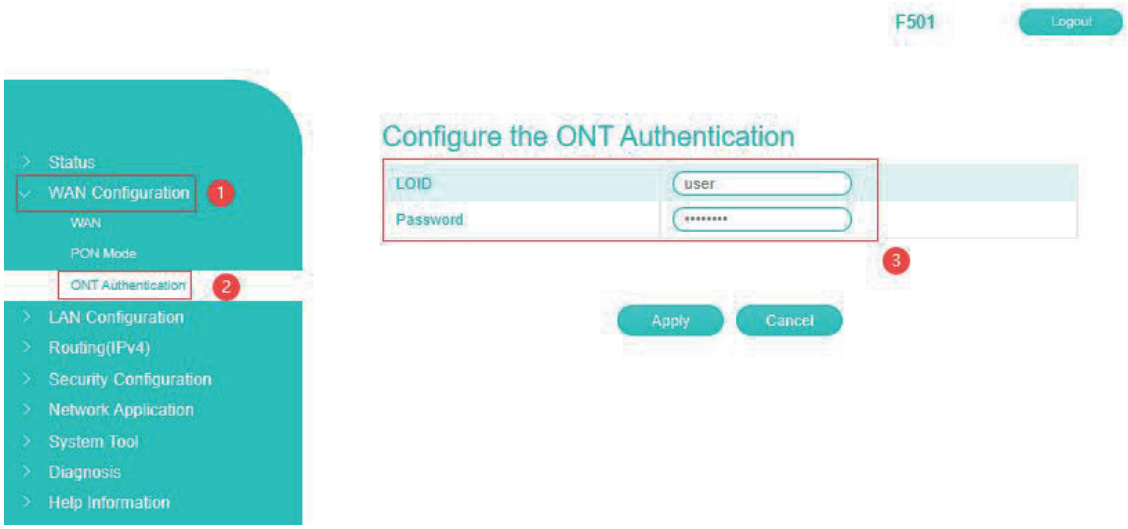


5.3 ONU Registration LOID Configuration

The LOID of the ONU is mainly applicable to the authentication mode of LOID and LOID + Password. General EPON ONU authentication method is MAC address, and rarely use the LOID authentication mode, so normal circumstances do not need to configure the LOID. The LOID of the ONU is configured as follows:

1.web login ONU select the **WAN Configuration-> ONT Authentication,** you

can set and view the ONU LOID and password:



2.After completing the LOID and password settings, you can click the "Apply" button below to complete the setup.

6 Internet Basic Configuration

ZTE ONU series of products support route function, Internet can work by route mode or bridge mode, the difference between the two modes are as follows:

Routing mode Broadband Internet access: ONU as a home gateway equipment, ONU on route mode can obtained IP address in three ways: **DHCP**, **static IP** and **PPPoE**. The IP address of the user terminal device (PC, etc.) obtained by the ONU own DHCP address pool or manually set the static IP address the same as DHCP address pool.

Bridging mode broadband Internet access: ONU itself will not get the IP address assigned by the upper device, or can not manually set the static IP address, then ONU as a relay device. The IP address of the user device (PC) connecting the ONU LAN port obtained by the OLT upper layer server. The PC is connected to the Internet through DHCP, PPPoE, and static ip address.

6.1 Routing mode broadband Internet settings

6.1.1 PPPoE broadband Internet access in routing mode

1. web login ONU and select **WAN Configuration->WAN->NEW,** and then set the following parameters:

【Connection Name】Enter a qualified name.

【Enable】Check this option,It makes the WAN you configured take effect

【WAN Mode】Select “Route”.

【Mode】Select “PPPOE”.

【IP Protocol】Select ‘Ipv4’; If there is Ipv6 in the network, we can select ‘Ipv4/Ipv6’.

【Service Type】Check “INTERNET”.

【Enable Vlan】Configure this option according to our network plan.If the network plans the vlan of broadband Internet, this item needs to choose ;If the network has no vlan planning for broadband Internet access, this option is not to choose.

【Vlan ID】This will appear after the selection "tag", and the vlan id of the network plan should be filled in.

【802.1p】Set the priority of vlan, The same as "enable Vlan", depending on the network vlan planning to configure. The default priority is 0.

【PPP TransType】Select "PPPoE".

【Username】Enter the PPPoE Internet PPPoE account provided by the network operator.

【Password】Enter the PPPoE password provided by the network operator.

【Authentication Type】Select "Auto".

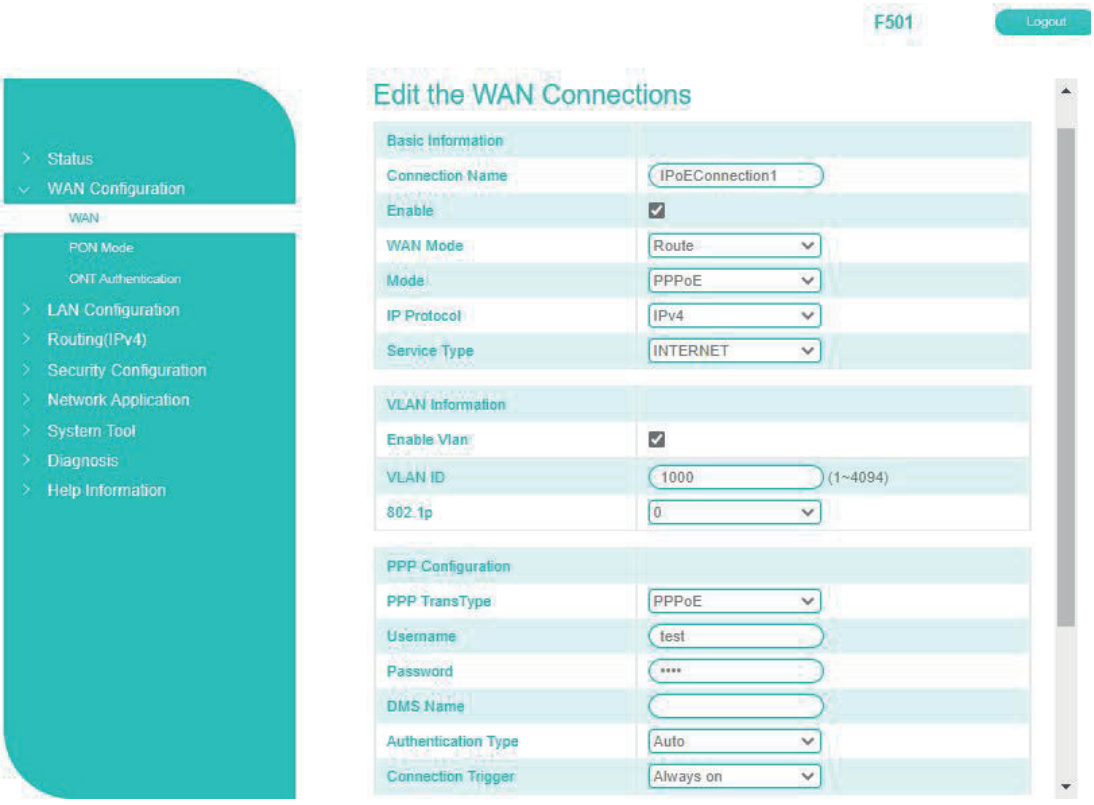
【Connection Trigger】The default is “Always On”.

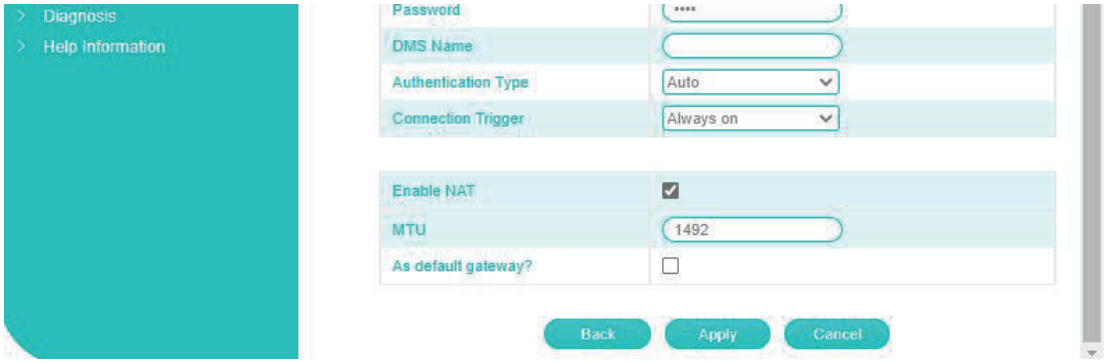
【Enable NAT】Check the "Enable NAT" function; NAT function is mainly used for internal network and external network communication address translation function, the default is checked enabled state, if not check the network ONU not get the network.

【MTU】The default is 1492 does not need to modify; if you meet can ping DNS but the web browser can not access the site. Modify MTU smaller, such as: 1400.

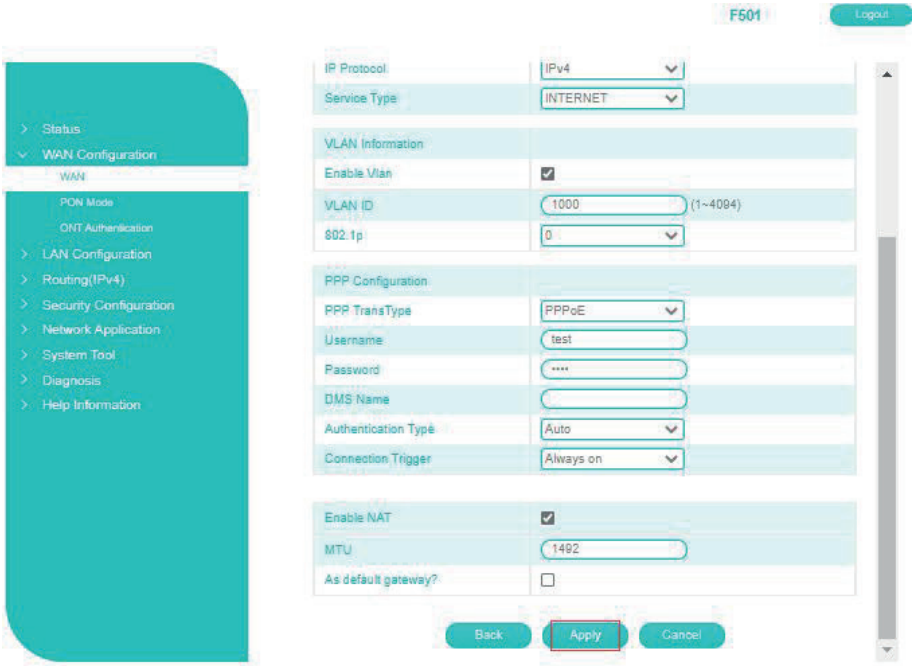
【As default gateway】Choose to tick according to your needs

Note: ZTE solution ONU series of products is no port binding function, because the ONU is SFU (pure data)+ Routing, the ONU either works in SFU mode, or is working in routing mode.





2. After the above configuration, click "Apply" button to complete the PPPoE broadband Internet access settings:



6.1.2 DHCP broadband Internet access in routing mode

1. web login ONU and select **WAN Configuration->WAN->NEW,** and then set the following parameters:

【Connection Name】Enter a qualified name.

【Enable】Check this option,It makes the WAN you configured take effect

【WAN Mode】Select “Route”.

【Mode】Select “IPOE”.

【IP Protocol】Select ‘Ipv4’; If there is Ipv6 in the network, we can select ‘Ipv4/Ipv6’.

【Service Type】Check “INTERNET”.

【Enable Vlan】Configure this option according to our network plan.If the network plans the vlan of broadband Internet, this item needs to choose ;If the network has no

vlan planning for broadband Internet access, this option is not to choose.

【Vlan ID】This will appear after the selection "tag", and the vlan id of the network plan should be filled in.

【802.1p】Set the priority of vlan, The same as "enable Vlan", depending on the network vlan planning to configure. The default priority is 0.

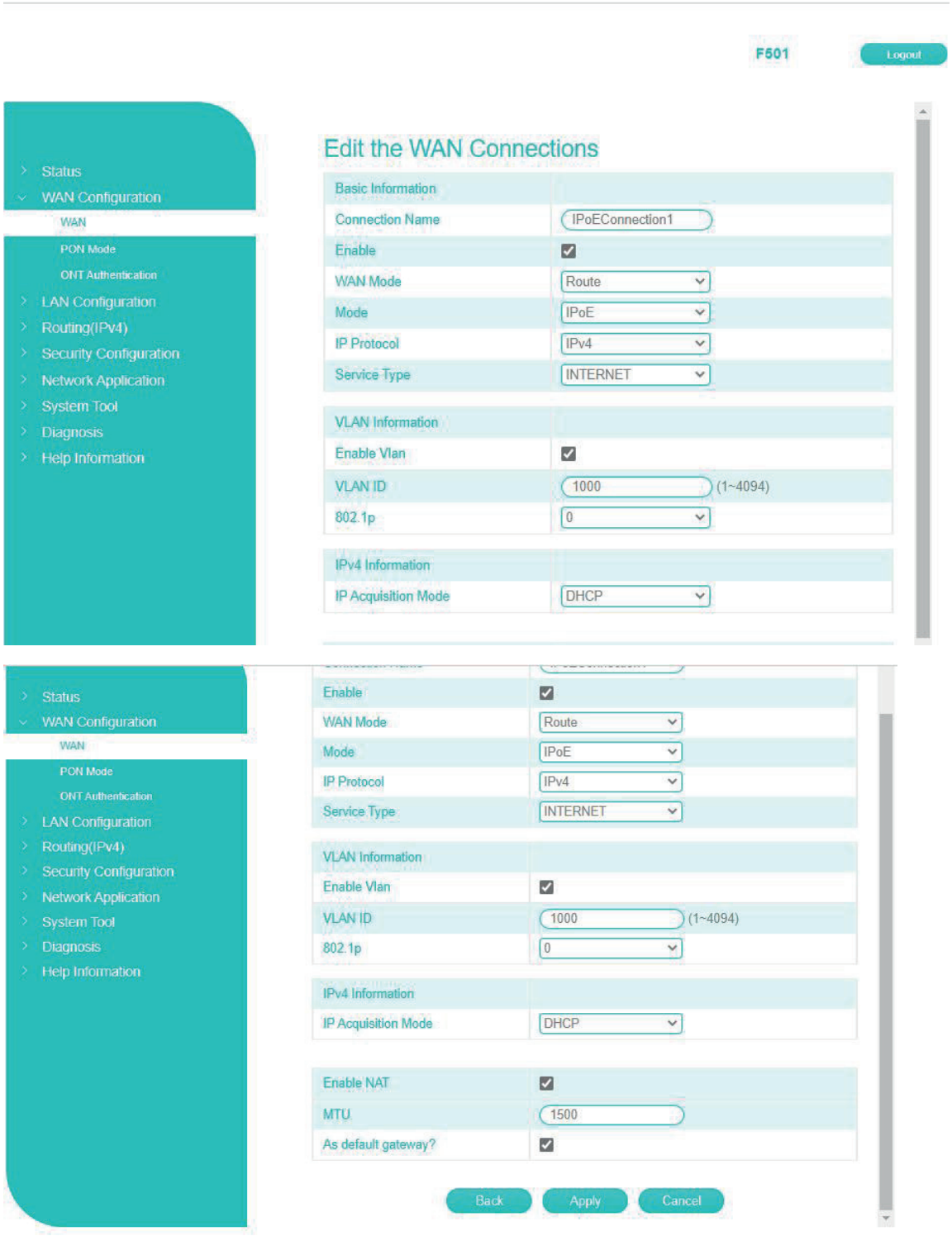
【IP Acquisition Mode】Select“DHCP”.

【Enable NAT】Check ‘NAT’ feature;NAT is mainly used for address translation function of local network and external network. The default is checked enable status. If you do not check this option, maybe you can’t surf the internet.

【MTU】The default is 1500; if we can ping the DNS but not access to the website via WEB broswer,we need to lower the value of MTU, such as 1400.

【As default gateway】Choose to tick according to your needs

Note: the default port is unbound, and all the LAN ports go through this WAN. When the device has a route WAN at the same time,it needs to bind the port for each WAN (a LAN can only be bound to a WAN, can not bind to multiple WAN connections at the same time.)



2..After configuring the parameters of DHCP WAN connection as below, click 'Apply' to finish the setting：

6.1.3 Static IP Broadband Internet Access In Routing Mode

1. web login ONU and select **WAN Configuration->WAN->NEW,** and then set the following parameters:

【Connection Name】Enter a qualified name.

【Enable】Check this option,It makes the WAN you configured take effect.

【WAN Mode】Select “Route”.

【Mode】Select “IPOE”.

【IP Protocol】Select ‘Ipv4’; If there is Ipv6 in the network, we can select ‘Ipv4/Ipv6’.

【Service Type】Check “INTERNET”.

【Enable Vlan】Configure this option according to our network plan.If the network plans the vlan of broadband Internet, this item needs to choose ;If the network has no vlan planning for broadband Internet access, this option is not to choose.

【Vlan ID】This will appear after the selection "tag", and the vlan id of the network plan should be filled in.

【802.1p】Set the priority of vlan, The same as "enable Vlan", depending on the network vlan planning to configure. The default priority is 0.

【IP Acquisition Mode】Select“Static”.

【IP Address】Set static IP address;

【Subnet Mask】Set the mask of static IP address;

【Gateway】Set the default gateway of static IP address;

【DNS Service1 IP Address】Set static primary DNS address and secondary DNS address;

【DNS Service3 IP Address】Set static second DNS address and secondary DNS address;

【DNS Service3 IP Address】Set static third DNS address and secondary DNS address;

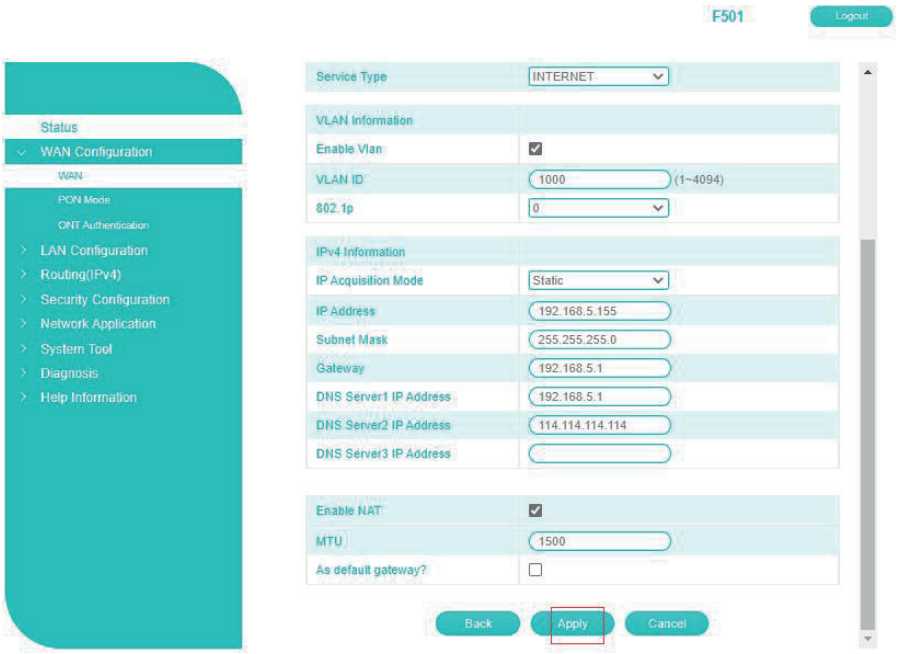
【Enable NAT】Check ‘NAT’ feature;NAT is mainly used for address translation function of local network and external network. The default is checked enable status. If you do not check this option, maybe you can’t surf the internet.

【MTU】The default is 1500; if we can ping the DNS but not access to the website via WEB broswer, we need to lower the value of MTU, such as 1400.

【As default gateway】Choose to tick according to your needs

Note: the default port is unbound, and all the LAN ports go through this WAN. When the device has a bridge WAN and a route WAN at the same time,it needs to bind the port for each WAN (a LAN can only be bound to a WAN, can not bind to multiple WAN connections at the same time.）.

2.After the above configuration, click "Apply" button to complete the Static IP broadband Internet access settings:



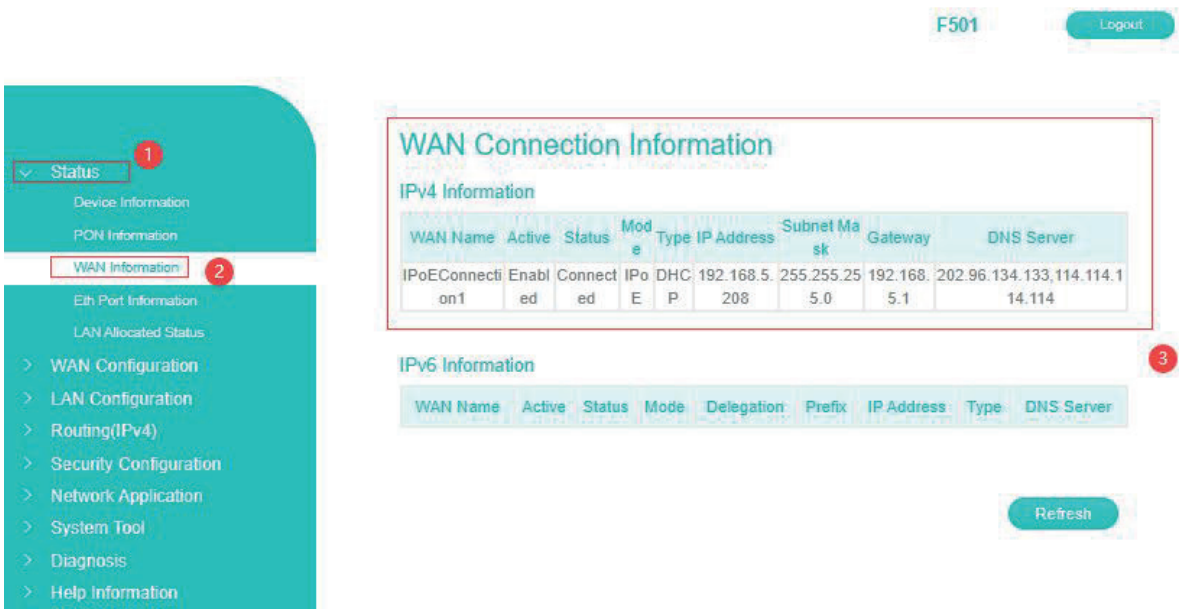
6.2 Broadband Internet Access In Bridge Mode

ZTE solution ONU series products factory default mode in the bridge (pure data SFU), ONU bridge mode Internet does not need to do any configuration in the web interface. Just configure the correct ONU port vlan (eg access, trunk, transparent) in the OLT

Note: If ONU was in route mode for Internet. Please disable ONU's DHCP function if need change to bridge mode. It is best to delete route WAN configuration.

6.3 View Broadband WAN Status

web login ONU and select the **Status ->WAN Information**, you can see the status of the WAN connection in the routing mode, check whether the routing WAN has the correct IP address.As follows:



6.4 Delete Internet WAN Connection

web login ONU and select the **WAN Configuration->WAN**, select a WAN connection in the **"Connection Name"**, and then click the **"Delete"** button at the bottom of the page to complete the deletion:

7 ONU LAN configuration

The LAN side configuration of the ZTE solution ONU is mainly for terminal device when ONU in route mode.

7.1 LAN IP Address Configuration

1.web login ONU and select the **LAN Configuration**-> **DHCP Configuration**, And then set the following parameters:

【LAN IP Address】Set the local management IP address of the ONU. The default is 192.168.101.1

【Subnet Mask】Set the subnet mask corresponding to the local management IP address of the ONU.

【Enable DHCP Server】Enable or disable the DHCP server function on the ONU.

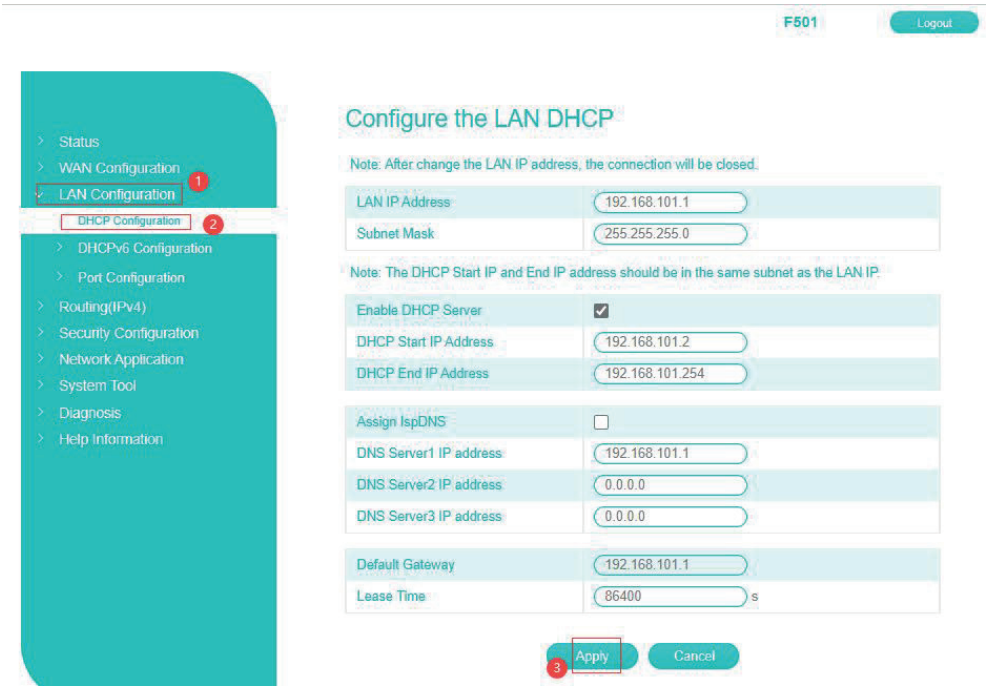
【DHCP Start IP Address/DHCP End IP Address】The IP address interval allocated to the terminal. The address interval must be on the same network segment as the management IP address of the ONU.

【Assign IspDNS】Enable or Disable the ONU to allocate the upper ISP's DNS to the terminal.

【DNS Server1 IP Address/DNS Server2 IP Address/DNS Server3 IP Address】The DNS address to be assigned to the terminal, in default ONU use itself ip 192.168.101.1 work as DNS proxy address, can enter according to network planning.

【Default Gateway】The default gateway address assigned to the terminal.

【Lease Time】Set the DHCP server allocated ip’s lease time,the configuration is 86400.



2.After the above configuration, click "Apply" button to complete the LAN ip settings:

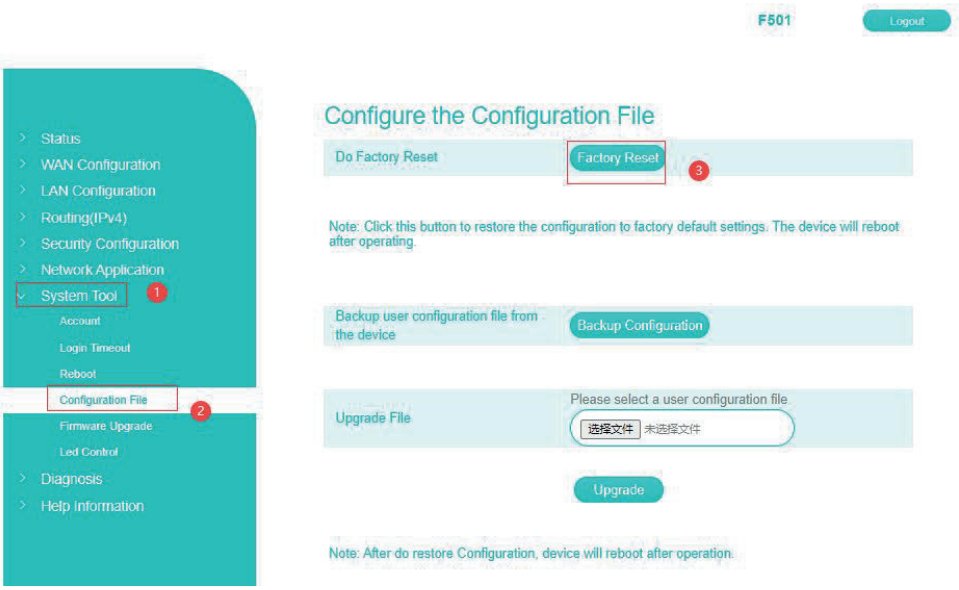
8 Multicast / IPTV Service Basic Settings

ZTE solution ONU multicast / IPTV service settings are mainly through the OLT to configure, including multicast vlan, snooping configuration can be configured through the OLT. The specific configuration can refer to each manufacturer's OLT to configure.

9 ONU Device Management

9.1 Restore Default

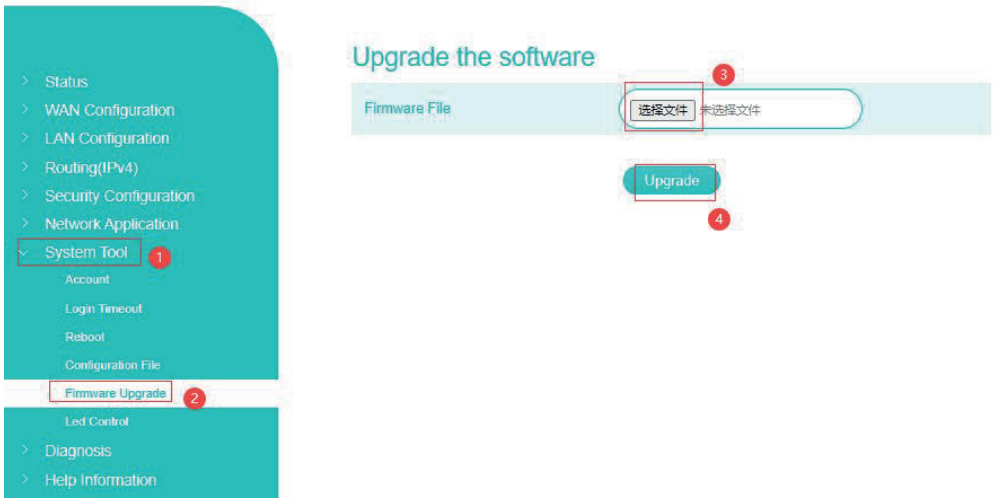
web login ONU and select the **System Tool->Configuration File**. Click the **"Factory Reset"** button to restore the ONU factory settings:



9.2 Software Upgrade

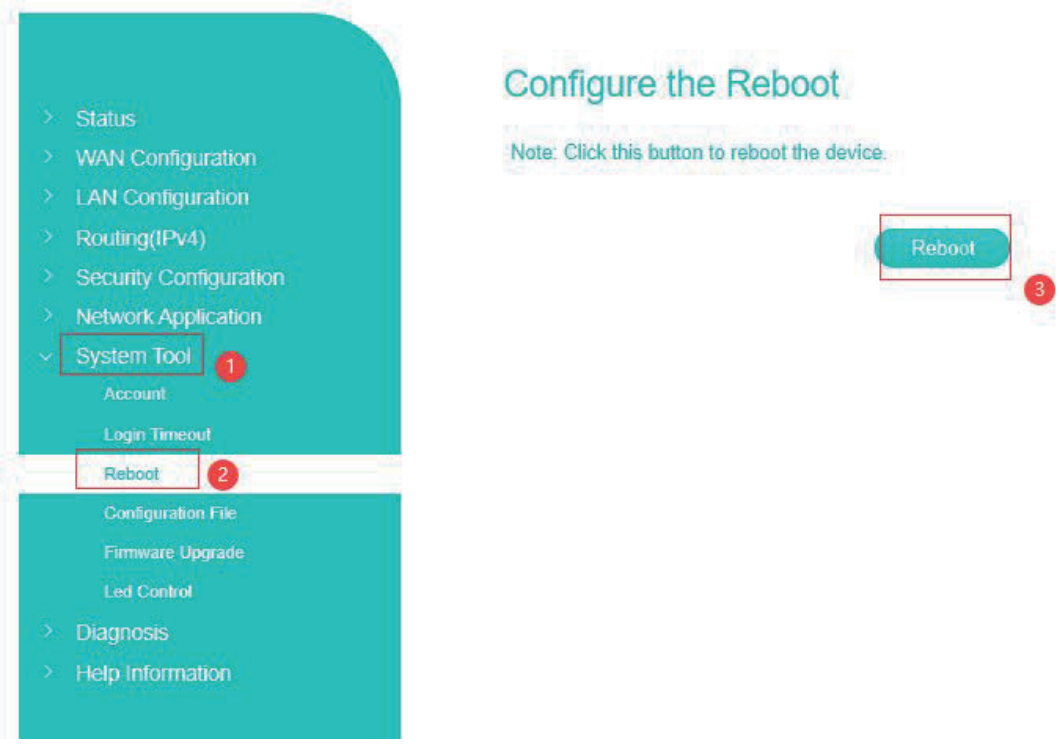
web login ONU and select the **System Tool->Firmware Upgrade**. Click the **"Choose File"** button to select an upgrade file, and then click the "**Upgrade**" button to upgrade:

Note: ONU upgrade will automatically restart, do not need to manually restart the ONU, upgrade time is about 3 minutes.



9.3 Reboot Device

web login ONU and select the **System Tool->reboot**. Click the **"Reboot"** button to restart the ONU device:



cyberteam®

Cyberteam Sp. z o.o. | ul. Strefowa 8 | 22-400 Zamość
cyberteam@cyberteam.pl www.cyberteam.pl