Wodaplug R_XPON SFU Products

4GE/4GE+CATV/1GE+3FE/1GE+3FE+CATV

User Manual

Version：V1.1

Content

1 Note

1.1 Installation Precautions

● Do not place the equipment near flammable or conductive items, high temperatures (such as direct sunlight) or in wet conditions, or on a PC chassis, and check that the surrounding appliances are stable.

● Check the cable for aging. Check and verify that the AC or DC input voltage is within the permissible range of the device and that the polarity of the DC is correct.

● Unless the manufacturer permit, use the type of power indicated on the label and the adapter supplied with the product.

● To prevent damage to the product from lightning, make sure that the ground of the power outlet and the power adapter is securely grounded. In the thunderstorm, be sure to unplug the power and all the connections.

● Equipment input voltage fluctuation should be less than 10%, the power plug, refrigerators, hair dryer and iron should not use the same socket.

● To avoid electric shock or fire due to overload of the power outlet, damage to the cord or damage to the plug, check the power cord regularly. If damage is found, replace it immediately.

● Please place the device on a flat surface and can not place items on the device.

● Equipment is easy to produce heat when working, should maintain the appropriate cooling space to avoid damage caused by overheating products. The elongated hole on the shell is designed for heat dissipation. Keep the ventilation clean and avoid falling from the heat sink into the equipment. Otherwise, the equipment may be damaged or fire. 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 and the product.

● Avoid eye looked at the optical interface directly, so as to avoid the laser beam emitted by the interface damage the eyes. Please try to wear safety glasses to effectively protect

your eyes from damage. It is best to plug in the fiber optic interface jacket when the optical interface is not in use .

● Turn off the power when the device is not in use

● Before plugging the power supply, make sure that the power switch is turned off to avoid surge. Be careful when unplugging the power supply and the transformer temperature may be high.

● To ensure safety, do not open the enclosure of the device, especially when the device is powered up.

● Unplug the power supply before cleaning the equipment. Use a soft dry cloth to clean the equipment to avoid the use of liquids or sprays.

● Do not connect this product to any electronic product unless it is instructed by our customer engineer or your broadband supplier, as any incorrect connection may cause power or fire hazard.

2 Brief

Realtek new solution XPON SFU is GPON/EPON adaptive terminal products to meet the telecom, radio and television FTTH fiber to the home multi-service access. The products based on mature and stable, cost-effective Gigabit GPON and EPON technology, integrate Gigabit and Fast Ethernet switching technology, HFC 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 and IEEE802.3ah equipment technical requirements.

Realtek new solution XPON SFU series terminals are available with 1-4 10M / 100M / 1000M adaptive ports, and the device has been interconnected with the GPON or EPON OLT of the industry's leading communications vendors (Huawei / ZTE / FiberHome / Alcatel-Lucent), composed of gigabit systems, to meet the two-in-one video, data services of FTTH / FTTO access needs.

Note: This manual is written in the form of 4GE+CATV XPON ONU, and other models ONU can also be referenced.

2.1 Product Feature

● Support both GPON and EPON mode adaptation
● Single-fiber access, providing broadband, CATV, IPTV service access, and so on.
● Meet GPON ITU-T G.984 and EPON IEEE802.3ah standard
● Support GPON uplink bandwidth 1.25G, downlink bandwidth 2.5G standard
● Support EPON uplink and downlink bandwidth 1.25G

- Support VLAN Transparent、Tag、Trunk、Translation、QinQ function
- Support up and down bandwidth limit function
- Support port loop detection / port link status detection
- Support upgrade through the OLT remote / local ONU WEB
- Support broadcast storm suppression
- Different data ports are isolated from each other
- Support port flow control
- Support multiple multicast forwarding mode: igmp snooping, igmp proxy
- Support OLT as SNMP-agent way of the unified management of the network management, 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 based on the dual management model to ensure that the user's minimum specified bandwidth requirements
- QoS guarantee for different priority services through SLA constraint, Policing, queue management scheduling / congestion avoidance, discard management
- Supports entry-based traffic control, we can select Pause frame to limit.
- Support HQoS Function
- Support CATV service remote shutdown function
- Operating wavelength: 1100 - 1600nm

2.2 Product Specification

Ambient temperature: 0°C～40°C

Relative humidity： 10% to 90% (non-condensing)

Power adapter input：12 V/1A

TX Optical Power：0.5~5dBm

RX Opitcal 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 prejudgment 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 Device Interface Definition
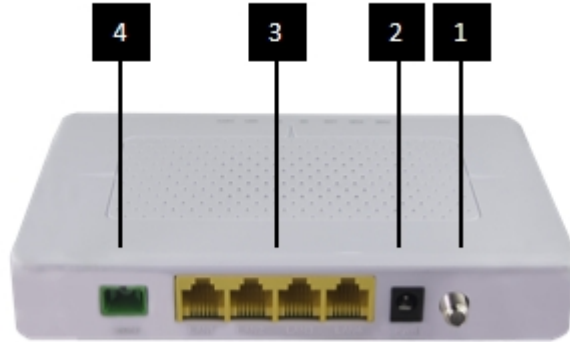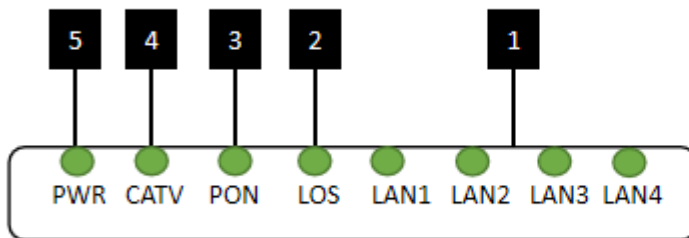
Indicator			Description
1	LAN1-4	LAN Port status	On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;
2	LOS	XPON optical signals	On: Optical power lower than receiver sensitivity ; Off: Optical in normal
3	PON	ONU Register	On: Success to register to OLT Blinking: In process of registering to OLT; Off: In process of registering to OLT;
4	CATV	CATV status	On：CATV optical normal Off：The CATV signals are not received
5	PWR	Power status	On: The ONU is power on; Off: The ONU is Power off;

2.5 Device Connection

- Connect 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 and each home device, that is, the computer, IPTV set-top box, and so on.

- Connect coaxial cable: Connect the coaxial cable to the RF connector of the ONU.

- Connect the AC adapter: Plug the AC / DC adapter into the AC wall jack and the ONU 12V DC power jack.

2.6 Applications
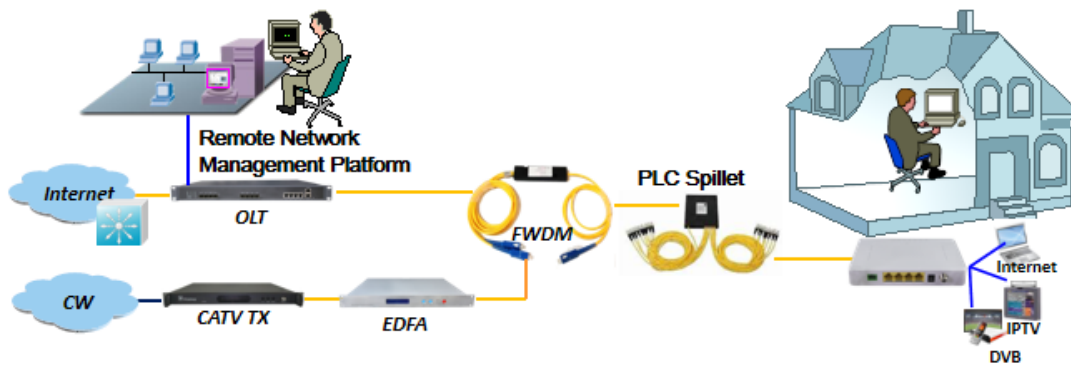
2.7 ONU Instructions

Realtek XPON SFU ONU is mainly work in the bridge mode, all the configuration of ONU (ONU port vlan, ONU port speed limit, etc.) are basically configured through the OLT, but also through the OLT and EMS network management to manage, It does not need to be configured on the ONU's local WEB. The configuration manual is to guide customers to do some basic view and configuration operation for Realtek XPON SFU ONU. Other configurations of the ONU can be configured according to each manufacturer's OLT configuration manual.
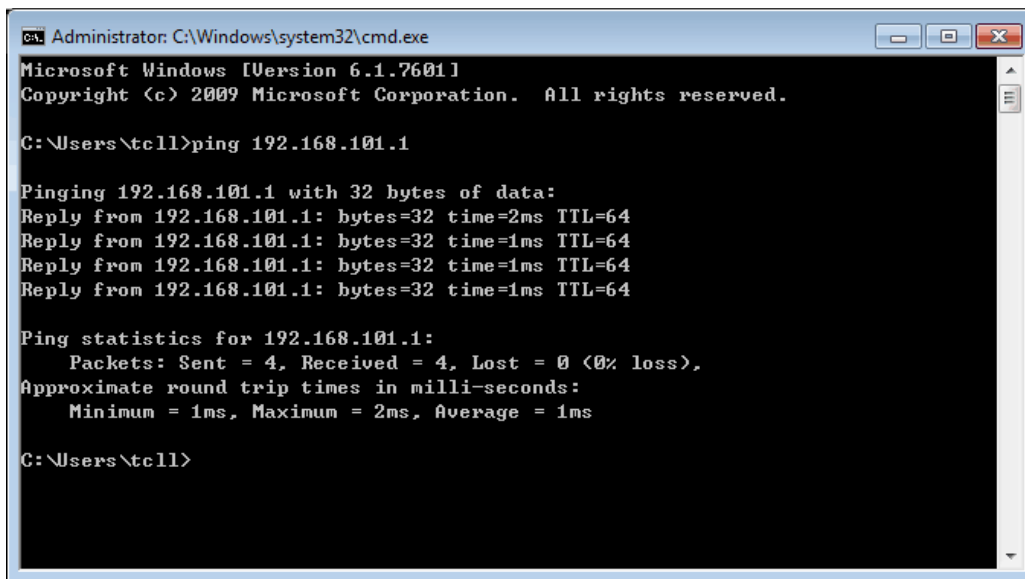
3 Login Web Management Locally

3.1 Physical Connection of ONU and PC

a) Local NIC of PC connects to LAN port or ETH port of ONU via wires.

b) Set the IP address of PC's local NIC as **192.168.101.X (X：2-254).**
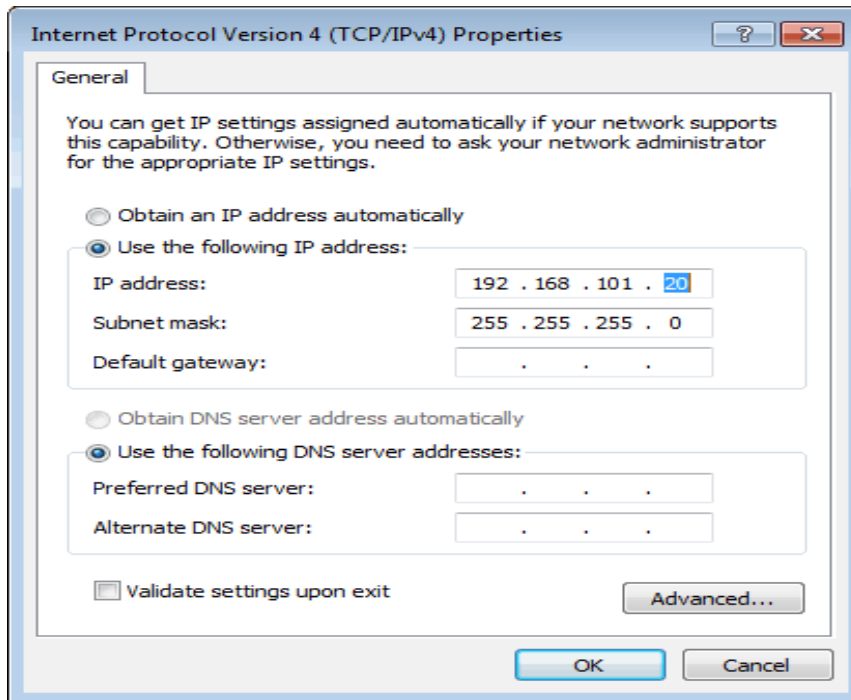
c) Open cmd windows and make sure that PC can ping the management IP (**192.168.101.1**) of ONU.

3.2 PC Access the WEB of ONU

Make sure you can ping the ONU like #3.1. Open the **IE Web broswer (IE, Firefox, Google)**, copy and paste URL: http: //192.168.101.1, the following pop-up Prompt landin-g page:

Input UserName：**adminisp**   Password：   **adminisp**

Click "**Login**" button. The product basics page appears, as follows：

You can start further configuration.

4 View ONU System Status

4.1　View ONU Device Information

Login ONU WEB. Click **Status ➔ Device**, we can view the **Device Name**, **Uptime**, **Model ID**, **Software Version**, **Hardware Version**, **Build Information**, **IP Address**, **MAC Address** and so on.

Site contents:
- Status
  - Device
  - IPv6
  - PON
  - CATV
  - LAN Info
- LAN
- Advance
- Diagnostics
- Admin
- Statistics

Device Status

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

System	
Device Name	4GE1AGCCATV
Uptime	2hours 58mins
Model ID	IGD
Software Version	V1.0.9_X000
Hardware Version	V1.0.1
Serial Number	RTKG11111111
Build Info	Build.1751.200224
CPU Usage	0%
Memory Usage	7%
Connection Status	

LAN Configuration	
IP Address	192.168.10.1
Subnet Mask	255.255.255.0
MAC Address	E067B3007171

Refresh

4.2　View ONU PON Status(When adaptive to GPON mode)

Login ONU WEB. Click **Status ➔ PON**, we can view the **Register Status**, **Rx Power** and **Tx Power** and so on.

Site contents:
- Status
  - Device
  - IPv6
  - PON
  - CATV
  - LAN Info
- LAN
- Advance
- Diagnostics
- Admin
- Statistics

PON Status

This page shows the current system status of PON.

PON Status	
Temperature	33.210938 C
Voltage	3.282100 V
Tx Power	2.405752 dBm
Rx Power	-25.086383 dBm
Bias Current	10.200000 mA

GPON Status	
ONU State	O5
ONU ID	0
LOID Status	Initial Status

Refresh

4.3   View ONU PON Status(When adaptive to EPON mode)

Login ONU WEB. Click **Status → PON**, we can view the **Register Status**, **Rx Power** and **Tx Power** and so on.

PON Status

This page shows the current system status of PON.

PON Status	
Temperature	32.871094 C
Voltage	3.282100 V
Tx Power	2.374945 dBm
Rx Power	-3.242217 dBm
Bias Current	10.050000 mA

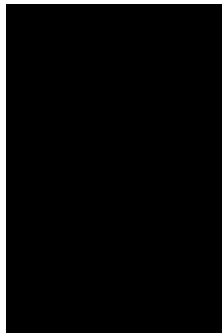| EPON LLID Status	
Status	Up

Refresh

4.4   View ONU CATV Status Information

Login ONU WEB. Click **Status → CATV**, we can view the CATV information.

CATVStatus

This page shows the current system status of CATV.

CATV Status	
Vcc	0.0 V
Temperature	486.4 °C
RfOutputPower	108.0 dBuV
InOpticalPower	0.0 dBm
VccAlarmState	
TempAlarmState	
RfAlarmState	
InpwrAlarmState	
VccDead	0.0 V
VccLow	0.0 V
VccHigh	0.0 V
TempDead	0.0 °C
TempLow	76.8 °C
TempHigh	76.8 °C
RfDead	0.0 dBuV
RfLow	76.8 dBuV

RfHigh	76.8 dBuV
InOptPwrDead	0.0 dBm
InOptPwrLow	0.0 dBm
InOptPwrHigh	0.0 dBm
Channel	0
AgcLowLimit	0.0 dBm
AgcHighLimit	0.0 dBm
CATV Status	on

Refresh

4.5   View ONU LAN Port Information

Login ONU WEB. Click **Status → LAN Info**, we can view onu each port status information.

LAN Status

This page shows the current system status of LAN.

LAN LinkStatus			
LAN-1	**LAN-2**	**LAN-3**	**LAN-4**
Up	Down	Down	Down

Refresh

5   Configure LAN IP Address of ONU

Login ONU WEB. Click **LAN**, we can change IP address and subnet mask of local management.

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:	192.168.10.1
Subnet Mask:	255.255.255.0

Apply Changes

6   View ONU LAN Side User Information

Login ONU WEB. Click **Advance → ARP Table**, we can view the **IP Address** and **MAC Address** of every user that connect to the lan port of ONU.
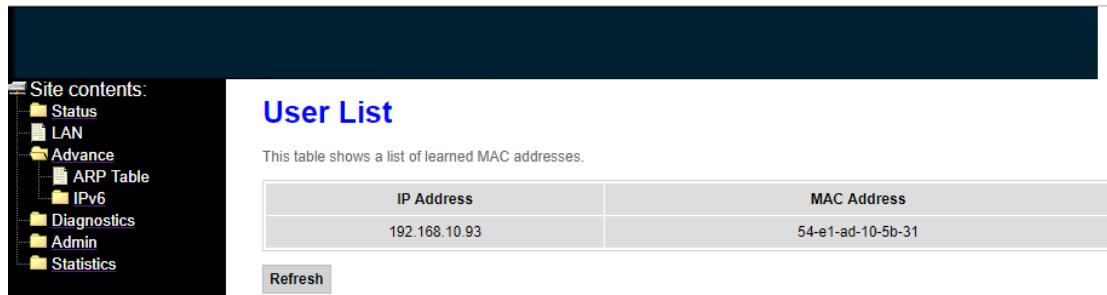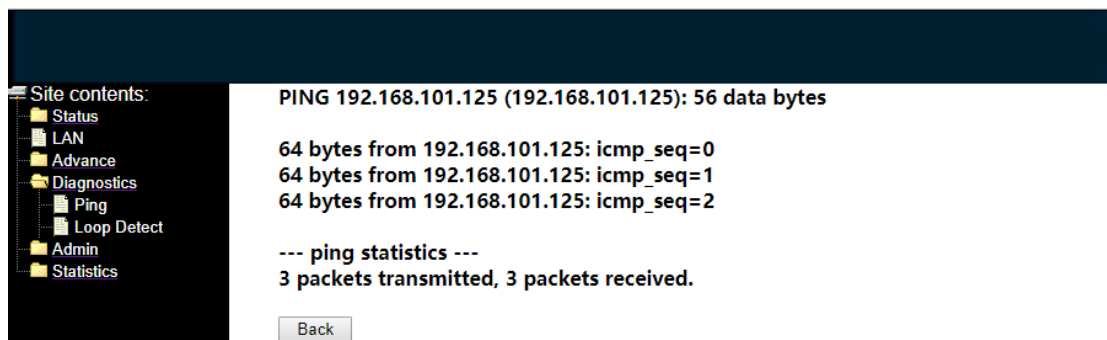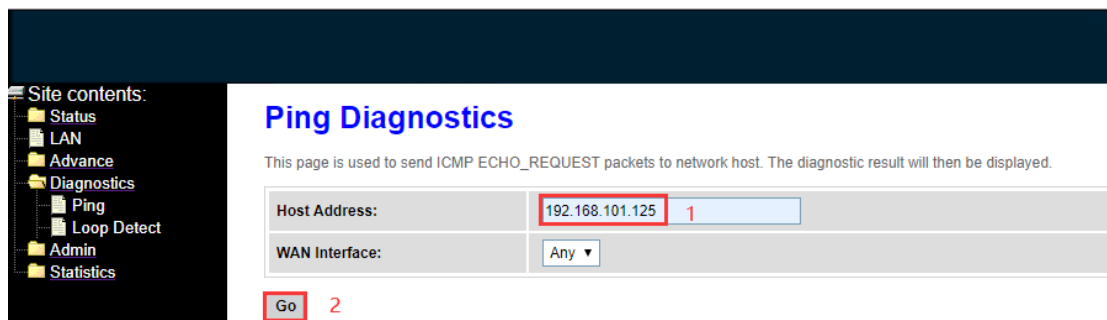

7 ONU Diagnostic

7.1 Ping Diagnostic

Ping diagnostic of Realtek SFU ONU is mainly used to test connectivity between ONU and client devices

Login ONU WEB. Click **Diagnostics → Ping**, type terminal IP address that connect to the ONU lan port, and click '**GO**' button to test the connectivity

7.2 ONU Loop Diagnostic

Login ONU WEB. Click **Diagnostics → Loop Detect**, we can enable or disable loop detect function of ONU.

Note: Configured the loop detect function, we have to pay attention to configuration of this function that configured via OLT. Some kinds of OLT will disable loop detect function by default.
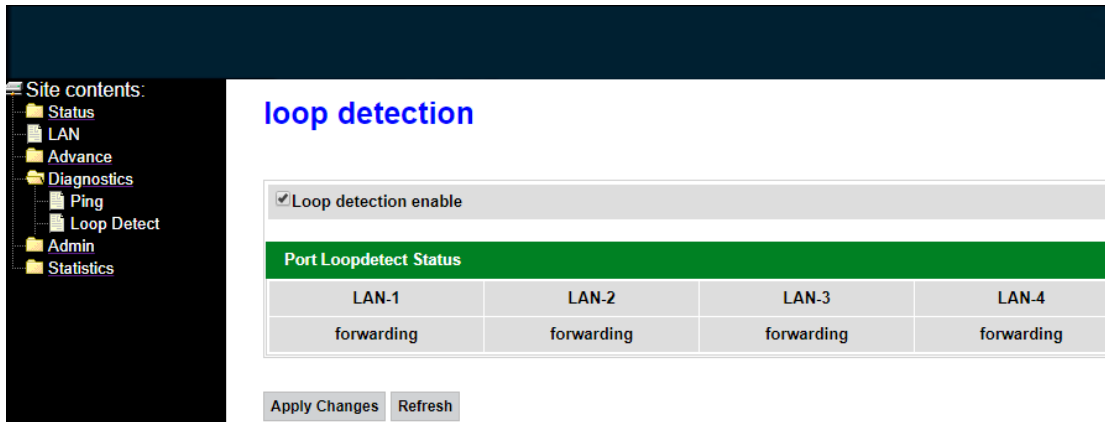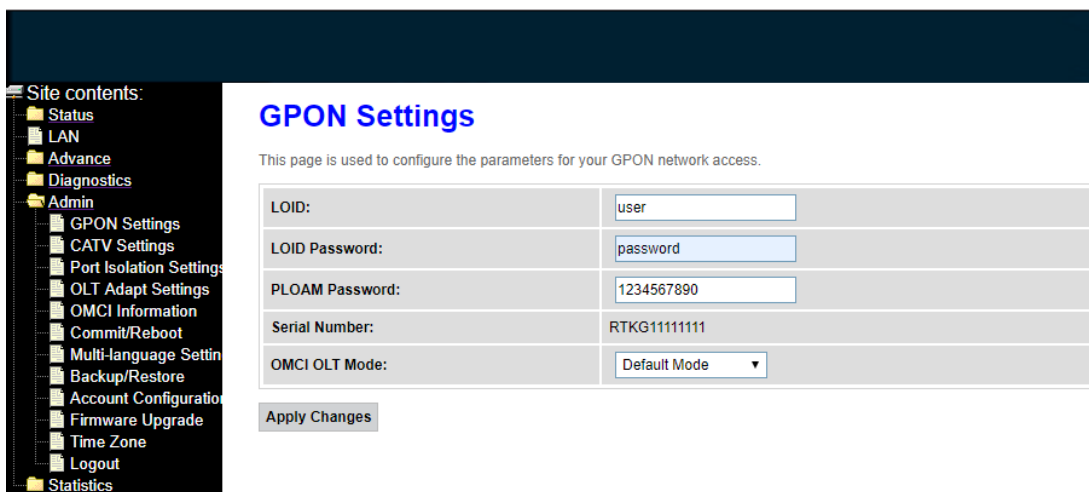

8 ONU System Management

8.1 Register LOID of ONU Config(When adaptive to GPON mode)

The LOID of ONU is mainly used for the authentication of LOID and LOID+Password from OLT. By default, GPON ONU register to the OLT by SN but less LOID so that we needn't configure the LOID. But the way to configure the LOID is as below
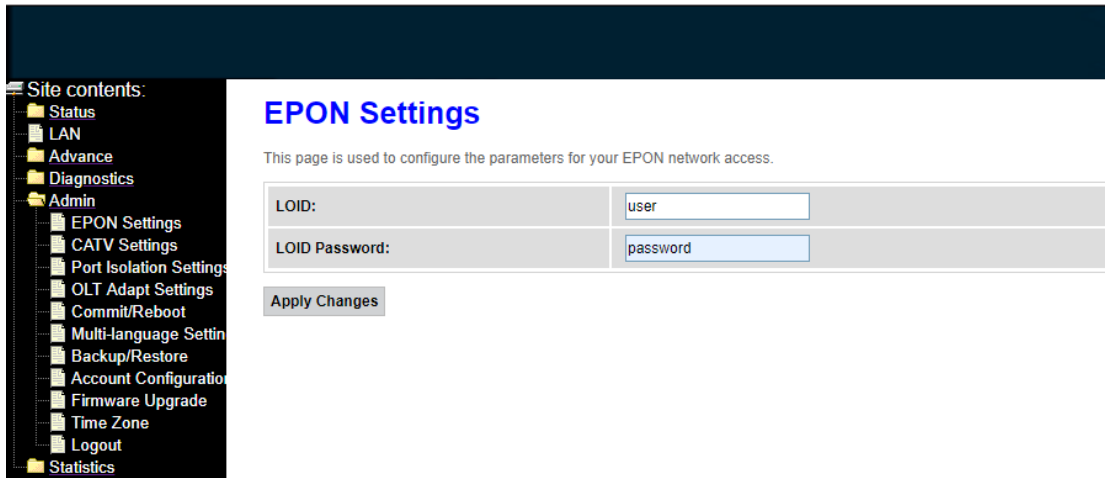
Login ONU WEB. Click **Admin → GPON Settings**, we can configure the LOID and LOID password, and click '**Apply Changes'** button to finish the settings.

## 8.2 Register LOID of ONU Config(When adaptive to EPON mode)

The LOID of ONU is mainly used for the authentication of LOID and LOID+Password from OLT. By default, EPON ONU register to the OLT by MAC address but less LOID so that we needn't configure the LOID. But the way to configure the LOID is as below

Login ONU WEB. Click **Admin → EPON Settings**, we can configure the LOID and LOID password, and click '**Apply Changes'** button to finish the settings.

8.3 CATV Settings

Login ONU WEB. Click **Admin → CATV Settings**, we can enable or diable CATV port and configure other parameters of CATV, and click '**Apply Changes'** button to finish the settings.
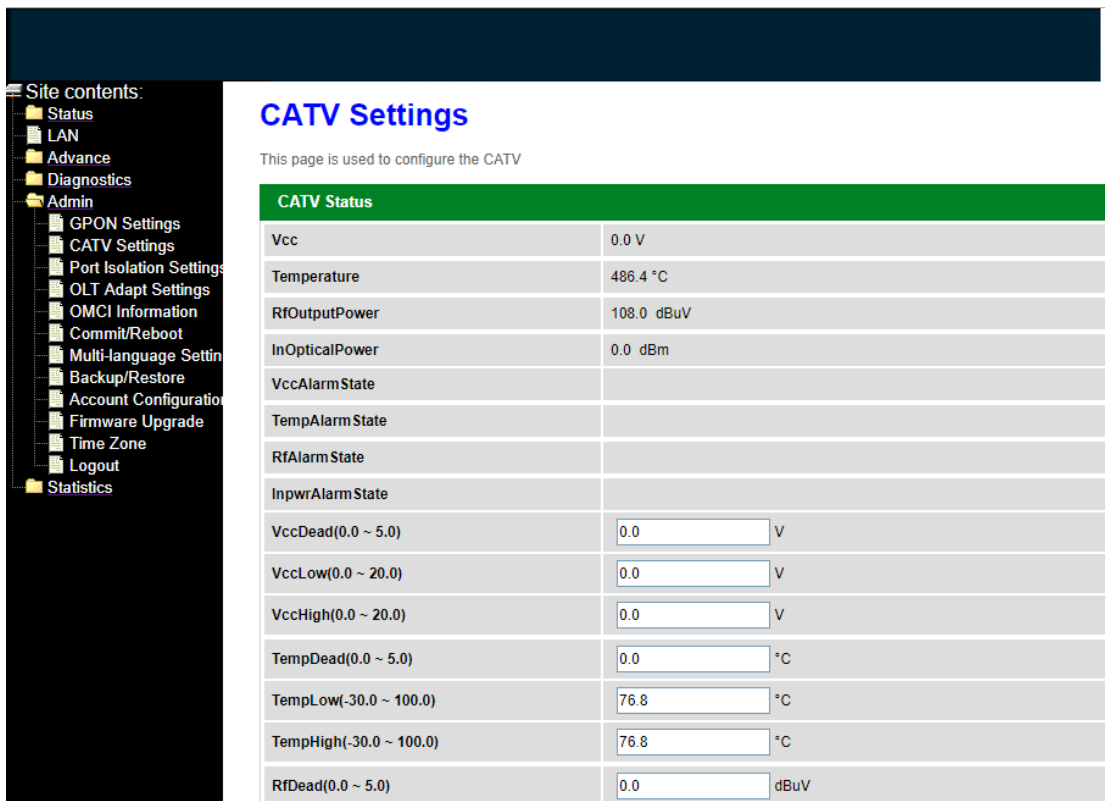
RfLow(50.0 ~ 100.0)	76.8	dBuV
RfHigh(50.0 ~ 100.0)	76.8	dBuV
InOptPwrDead(0.0 ~ 5.0)	0.0	dBm
InOptPwrLow(-60.0 ~ 10.0)	0.0	dBm
InOptPwrHigh(-60.0 ~ 10.0)	0.0	dBm
Channel(0 ~ 100)	0	
AgcLowLimit	0.0 dBm	
AgcHighLimit	0.0 dBm	
CATV Status	on	
☑ Enable CATV		

Apply Changes   Restore Default

8.4 Port Isolation Settings

ONU ports isolation is mainly used to the terminal that connect to the ONU can communicate with each other or not.

Login ONU WEB. Click **Admin → Port Isolation Settings**, we can enable or disable port Isolation function in here, and click '**Apply Changes**' button to finish the settings.

8.5 ONU Vendor ID Settings

Login ONU WEB. Click **Admin → OMCI Information**, we can set ONU vendor ID information in here, and click '**Apply Changes**' button to finish the settings.

8.6 Reboot ONU

Login ONU WEB. Click **Admin → Commit/Reboot**, click '**Commit and Reboot'** button to save the configuration and reboot the ONU.


8.7 ONU Chinese and English Interface Switch

Login ONU WEB. Click **Admin → Multi-Language Settings**. In here, we can change the language to Chinese or English, click '**Update selected language'** button to finish the settings.

8.8 Reset Settings to Default

Login ONU WEB. Click **Admin → Backup/Restore**. In here, we can backup and restore settings, and click '**Reset**' button to restore the ONU settings to default.
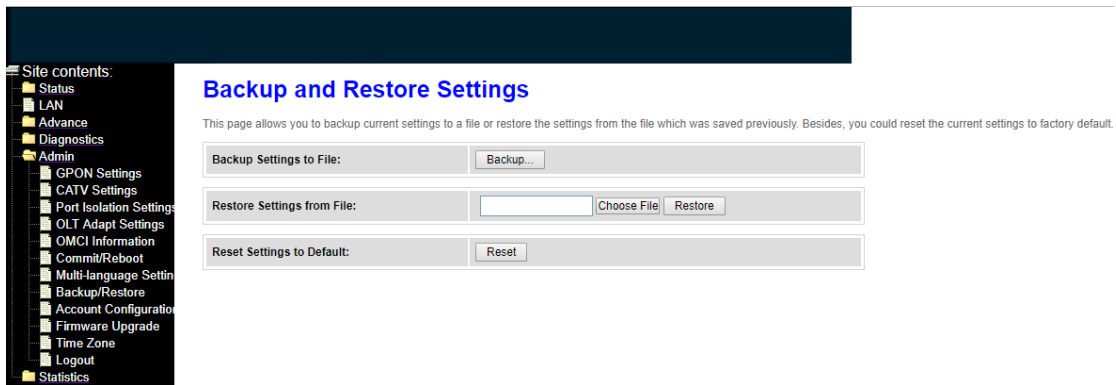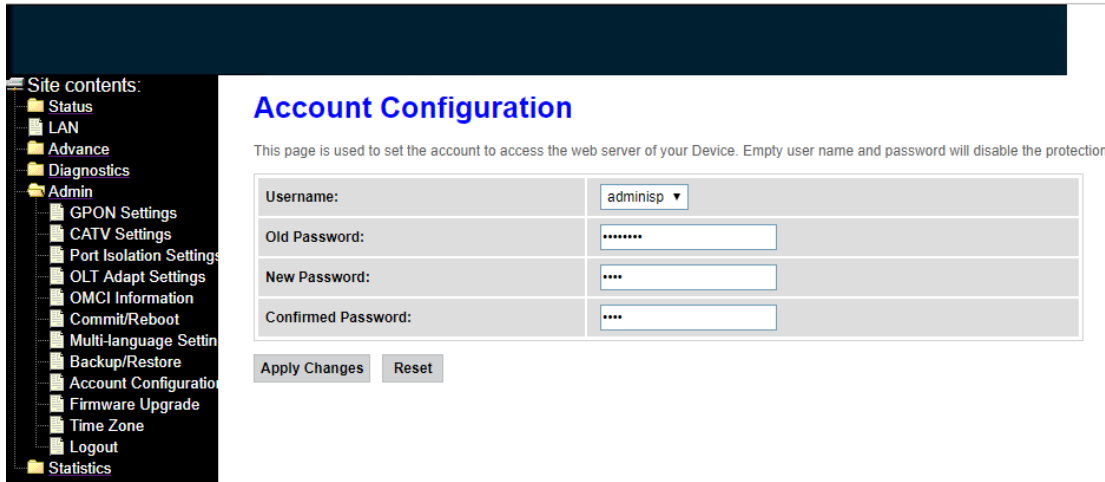

8.9 Modify the Account and Password

Default system management account and password are `adminisp/adminisp`

Default system common account and password are `admin/admin`

Login ONU WEB. Click **Admin → Account Configuration**. In here, we can change the password for management account and common account, and click '**Apply Changes**' button to finish the settings.

8.10 Upgrade the ONU

Firstly, we have to get a newest firmware from provider.

Login ONU WEB. Click **Admin → Firmware Upgrade**. In here, click **'Choose File'** button to select a upgrade file, and click **'Upgrade'** button to upgrade the ONU.

Note: We needn't extract Realtek project production's firmware, just upgrade the .tar file. It will take 4 minutes to upgrade. After upgrading, the ONU will reboot automatically. We needn't reboot it by manual.
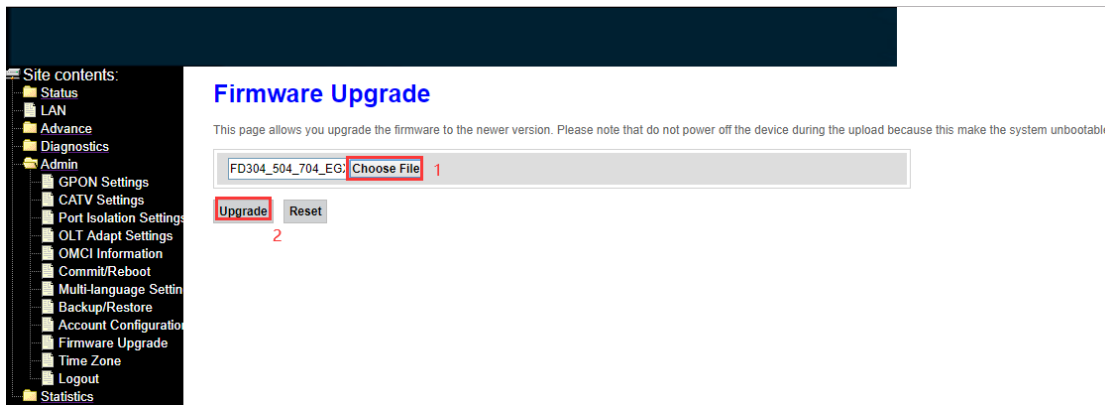
9   ONU Interface Traffic Statistics

9.1   PON Statistics

Login ONU WEB. Click **Statistics → PON Statistics**. In here, we can view the information of transmitted and received packets of ONU PON port.

PON Statistics

Bytes Sent:	1145280
Bytes Received:	700233
Packets Sent:	13937
Packets Received:	10941
Unicast Packets Sent:	0
Unicast Packets Received:	1
Multicast Packets Sent:	13485
Multicast Packets Received:	10940
Broadcast Packets Sent:	452
Broadcast Packets Received:	0
FEC Errors:	0
HEC Errors:	0
Packets Dropped:	0
Pause Packets Sent:	0
Pause Packets Received:	0

9.2   ONU LAN Interface Traffic Statistics

Login ONU WEB. Click **Statistics → LAN Statistics**. In here, we can view the information of transmitted and received packets of ONU lan ports.

LAN Statistics

LAN Message								
Interface	**Reveived**				**Sent**			
	Bytes	Packets	Errors	Dropped	Bytes	Packets	Errors	Dropped
LAN-1	1496668	12480	1	1	12429606	20954	0	0
LAN-2	0	0	0	0	0	0	0	0
LAN-3	0	0	0	0	0	0	0	0
LAN-4	0	0	0	0	0	0	0	0

Refresh   Reset Statistics