



Picotel PU-E810 User Manual

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1 Attention

1.1 Install Caution

- 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, ensure the safety of the power socket and power adapter earthing end grounding. Make sure the equipment in thunderstorm weather of power supply and unplug all link.
- 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 work is easy to generate heat, should maintain proper cooling space in order to avoid product damage caused by overheating. Slender hole on the shell for thermal design, please keep the ventilation clean, avoid the items from the radiator into device, otherwise may cause short-circuit equipment damage or fire. Don't put the liquid on the surface of equipment.

1.2 Precautions For Use

- Please read carefully before using equipment user manual, and follow the user manual and all the matters needing attention on the product.

- Avoid eyes optical interface, in order to avoid interface laser radiation injury of eyes. Please wear safety glasses, in order to effectively protect your eyes from damage. Optical interface. when not in use the best sheath with optical fiber interface.
 - Please shut off the equipment power When 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 in equipment electric.
 - 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

PU-E810 EPON ONT is one of the EPON optical network unit design to meet the requirement of the broadband access network. It apply in FTTH/FTTO to provide the data and video service based on the EPON network.

EPON is the latest generations of access network technology. IEEE802.3ah is the standard protocol of EPON. The EPON standard differs from other PON standards in that it achieves higher bandwidth and higher efficiency using larger, variable-length packets. EPON offers efficient packaging of user traffic, with frame segmentation allowing higher quality of service (QOS) for delay-sensitive voice and video communications traffic. EPON networks provides the reliability and performance expected for business services and provides an attractive way to deliver residential services. EPON enables Fiber To The Home (FTTH) deployments economically resulting to accelerated growth worldwide.

PU-E810 is based on ZTE high-performance xPON access chip. The chip supposes three mode: EPON/EPON/P2P, comply with the EPON standard of g.984, g.983, 802.3-2005, CTC EPON equipment technical requirements, have good xPON interoperability compatibility

PU-E810 provide one GE auto-adapting Ethernet ports. The PU-E810 features

high-performance forwarding capabilities to ensure excellent experience with Internet and HD video services. Therefore, the PU-E810 provides a perfect terminal solution and future-oriented service supporting capabilities for FTTH deployment. It has good third-party compatibility to work with the third party OLT, such as Huawei/ZTE/Fiberhome/Alcatel-Lucen.

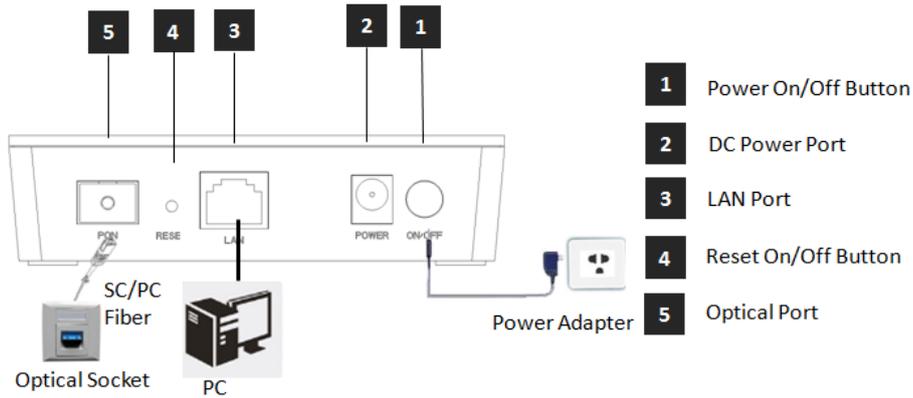
2.1 Feature

- Full compatible with IEEE802.3ah
- Support port-based rate limitation and bandwidth control
- In compliant with IEEE802.3ah Standard
- Up to 20KM transmission Distance
- Support data encryption, group broadcasting, port Vlan separation , etc.
- Support Dynamic Bandwidth Allocation (DBA)
- Support ONU auto-discovery/Link detection/remote upgrade of software;
- Support VLAN division and user separation to avoid broadcast storm;
- Support power-off alarm function ,easy for link problem detection
- Support broadcasting storm resistance function
- Support port isolation between different ports
- Support three layer routing functions
- Support ACL and SNMP to configure data packet filter flexibly
- Specialized design for system breakdown prevention to maintain stable system
- Support software online upgrading
- EMS network management based on SNMP ,convenient for maintenance

2.2 Environmental Parameter

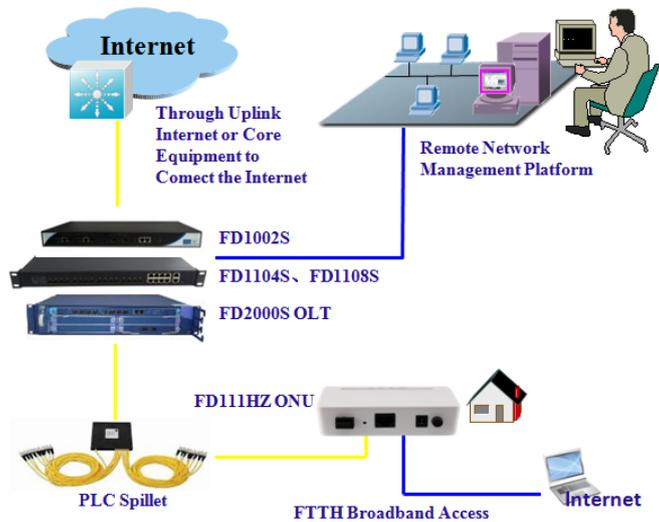
- Environmental Requirement
 - Operation temperature: $-0^{\circ}\text{C}\sim 50^{\circ}\text{C}$
 - Operation humidity: 5%—95%
- Power Specification
 - Rate voltage/ current: 12 V/0.5A
 - Power: <2W

2.3 Interface



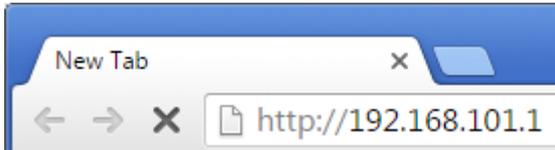
| Indicator light | | | Introduction |
|-----------------|-----|----------------------|---|
| 1 | LAN | LAN port status | On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up; |
| 2 | LOS | EPON optical signals | On: Optical power lower than receiver |
| 3 | PON | ONT Register | On: Success to register to OLT; Blinking: In process of registering to OLT; Off: In process of registering to OLT; |
| 4 | PWR | Power status | On: The ONT is power on; Off: The ONT is Power off; |

2.4 Application



3 Login ONU web

Set computer local IP address manually to 192.168.101.100, using network cable, connect the computer with EPON ONU Ethernet ports, open a browser, copy and paste the URL: <http://192.168.101.1>



Page as shown below:

Please login to continue...

Username

Password

Input Username: **adminisp** Password: **adminisp**

Click "Login" button. Web interface of basic information as shown below:



The screenshot shows the web interface of the ONU. At the top, there is a navigation menu with the following items: Status, Network, Security, Application, Administration, and Help. Below the menu, there is a sidebar on the left with three sections: Device Information, Network Interface, and User Interface. The Device Information section is currently selected and expanded, showing a table of device details. To the right of the table, there are two buttons: Help and Logout.

| | |
|---------------------|-------------------|
| Model | 100Z |
| Serial Number | DB19-160324000002 |
| Hardware Version | V1.2 |
| Software Version | V1.1.2-X001 |
| Boot Loader Version | V1.1.2-X001 |

4 Internet service configuration

4.1 PPPoE Dial-up access Internet

① Click Network ->WAN->WAN Connection, Login to the web interface as shown below:

WAN Connection configuration interface showing fields for Connection Name, New Connection Name, Enable VLAN, Type, Service List, MTU, Link Type, Username, Password, Authentication Type, Connection Trigger, IP Version, PPP TransType, and IPv4 Enable NAT.

② Connection Name choose “Create WAN Connection”, give the WAN a name(ex:internet), check “Enable VLAN”, set correct VLAN ID and 802.1P, Type is “Route”, Service List to “INTERNET”, Link Type set to “PPP”. Fill in PPPoE username and password. Other configuration keep in default. Click “Create” button.

WAN Connection configuration interface showing fields for Connection Name, New Connection Name, Enable VLAN, VLAN ID, 802.1p, Type, Service List, MTU, Link Type, Username, Password, Authentication Type, Connection Trigger, IP Version, PPP TransType, and IPv4 Enable NAT.

③Click Network -> LAN->DHCP Server, Check "Enable DHCP Server", Click "Submit" button to enable the DHCP function.

The screenshot shows the DHCP Server configuration page. The left sidebar has a menu with 'WAN', 'LAN', 'PON', 'Routing(IPv4)', and 'Port Configuration'. Under 'LAN', 'DHCP Server' is selected. The main area contains a note: 'NOTE: 1. The DHCP Start IP Address and DHCP End IP address should be in the same subnet as the LAN IP.' Below the note are input fields for 'LAN IP Address' (192.168.101.1), 'Subnet Mask' (255.255.255.0), 'Enable DHCP Server' (checked), 'DHCP Start IP Address' (192.168.101.2), 'DHCP End IP Address' (192.168.101.254), 'Assign IspDNS' (unchecked), 'DNS Server1 IP Address' (192.168.101.1), 'DNS Server2 IP Address' (empty), 'DNS Server3 IP Address' (empty), 'Default Gateway' (192.168.101.1), and 'Lease Time' (86400 sec). There are 'Help' and 'Logout' buttons. Below the configuration is a table titled 'Allocated Address' with columns 'MAC Address', 'IP Address', 'Remaining Lease Time', 'Host Name', and 'Port'. The table is empty with the text 'There is no data.' at the bottom. At the bottom right of the page are 'Submit' and 'Cancel' buttons.

④Click Status->Network Interface->WAN Connection, can check the PPPoE WAN is connected or not. If the WAN get an ip address, DNS address and the Ipv4 Connection Status is Connected, mean the PPPoE dial-up is successfully. PC connect to ONU LAN port can surf the Internet.

The screenshot shows the WAN Connection status page. The left sidebar has a menu with 'Device Information', 'Network Interface', 'PON Inform', 'PON Alarm', and 'User Interface'. Under 'Network Interface', 'WAN Connection' is selected. The main area displays a table with the following information: Type: PPPoE, Connection Name: internet, IP Version: IPv4, NAT: Enabled, IP: 10.0.0.27, DNS: 202.96.134.33/202.96.128.86/0.0.0.0, IPv4 Connection Status: Connected, IPv4 Online Duration: 7 sec, Disconnect Reason: None, and WAN MAC: e0:67:b3:44:55:66. There are 'Help' and 'Logout' buttons. At the bottom right of the page is a 'Refresh' button.

ONU on the premise that registered and online, but IP and DNS without address, the IPv4 Connection Status show Disconnected and the Disconnect Reason is "AUTHENTICATION FAILURE", Please check the PPPoE username and password. If IPv4 Connection Status is "connecting" all the time, Please check the OLT configuration.

4.2 Static IP access Internet

① Click Network->WAN->WAN Connection

The screenshot displays the WAN Connection configuration page. The top navigation bar includes 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. The left sidebar shows 'WAN' with 'WAN Connection' selected, along with 'LAN', 'PON', 'Routing(IPv4)', and 'Port Configuration'. The main configuration area includes the following fields and options:

- Connection Name: Create WAN Conn (dropdown)
- New Connection Name: (text input)
- Enable VLAN:
- Type: Route (dropdown)
- Service List: INTERNET (dropdown)
- MTU: 1492 (text input)
- Link Type: PPP (dropdown)
- PPP section (indicated by a green up arrow):
 - Username: (text input)
 - Password: (text input)
 - Authentication Type: Auto (dropdown)
 - Connection Trigger: Always On (dropdown)
- IP Version: IPv4 (dropdown)
- PPP TransType: PPPoE (dropdown)
- IPv4 section (indicated by a green up arrow):
 - Enable NAT:

Buttons for 'Help' and 'Logout' are located on the right side of the configuration area. At the bottom right, there are 'Create' and 'Cancel' buttons.

② Connection Name choose "Create WAN Connection", give the WAN a name(ex:internet2), check "Enable VLAN", set correct VLAN ID and 802.1P, Type is "Route", Service List to "INTERNET", Link Type set to "IP". IP type set to "Static". Fill in IP Address, Subnet Mask, Gateway, DNS server ip address. Other configuration keep in default. Click "Create" button.

[Status](#) | [Network](#) | [Security](#) | [Application](#) | [Administration](#) | [Help](#)

WAN

WAN Connection

LAN

PON

Routing(IPv4)

Port Configuration

Connection Name Create WAN Conn

New Connection Name internet2

Enable VLAN Help

VLAN ID 20

802.1p 0 Logout

Type Route

Service List INTERNET

MTU 1500

Link Type IP

IP Version IPv4

IP Type Static

IPv4 ▲

Enable NAT

IP Address 192.168.2.99

Subnet Mask 255.255.255.0

Gateway 192.168.2.254

DNS Server1 IP Address 8.8.8.8

DNS Server2 IP Address 4.4.4.4

DNS Server3 IP Address

Create Cancel

③Click Network -> LAN->DHCP Server, Check "Enable DHCP Server", Click "Submit" button to enable the DHCP function.

[Status](#) | [Network](#) | [Security](#) | [Application](#) | [Administration](#) | [Help](#)

WAN

LAN

DHCP Server

PON

Routing(IPv4)

Port Configuration

NOTE: 1. The DHCP Start IP Address and DHCP End IP address should be in the same subnet as the LAN IP.

LAN IP Address 192.168.101.1 Help

Subnet Mask 255.255.255.0 Logout

Enable DHCP Server

DHCP Start IP Address 192.168.101.2

DHCP End IP Address 192.168.101.254

Assign IspDNS

DNS Server1 IP Address 192.168.101.1

DNS Server2 IP Address

DNS Server3 IP Address

Default Gateway 192.168.101.1

Lease Time 86400 sec

Allocated Address

| MAC Address | IP Address | Remaining Lease Time | Host Name | Port |
|-------------------|------------|----------------------|-----------|------|
| There is no data. | | | | |

Submit Cancel

④ Click Status->Network Interface->WAN Connection, can check the IP WAN is connected or not. If the WAN get an ip address, DNS address and the Ipv4 Connection Status is Connected, mean the IP WAN is connected. PC connect to ONU LAN port and obtain an IP address automatically can surf the Internet.

The screenshot shows the WAN Connection status page. The navigation menu includes Status, Network, Security, Application, Administration, and Help. The left sidebar shows Device Information, Network Interface (with WAN Connection selected), PON Inform, PON Alarm, and User Interface. The main content area displays a table of connection details:

| | |
|------------------------|----------------------------|
| Type | Static |
| Connection Name | internet2 |
| IP Version | IPv4 |
| NAT | Enabled |
| IP | 192.168.2.99/255.255.255.0 |
| DNS | 8.8.8.8/4.4.4.4/0.0.0.0 |
| IPv4 Gateway | 192.168.2.254 |
| IPv4 Connection Status | Connected |
| IPv4 Disconnect Reason | None |
| WAN MAC | e0:67:b3:44:55:66 |

Buttons for Help and Logout are visible on the right. A Refresh button is located at the bottom right of the page.

4.3 DHCP access Internet

①Click Network->WAN->WAN Connection.

The screenshot shows the WAN Connection configuration page. The navigation menu includes Status, Network, Security, Application, Administration, and Help. The left sidebar shows WAN (with WAN Connection selected), LAN, PON, Routing(IPv4), and Port Configuration. The main content area displays configuration options:

- Connection Name: Create WAN Conn
- New Connection Name: [Text Input]
- Enable VLAN:
- Type: Route
- Service List: INTERNET
- MTU: 1492
- Link Type: PPP
- PPP Configuration:
 - Username: [Text Input]
 - Password: [Text Input]
 - Authentication Type: Auto
 - Connection Trigger: Always On
- IP Version: IPv4
- PPP TransType: PPPoE
- IPv4 Configuration:
 - Enable NAT:

Buttons for Help and Logout are visible on the right. Create and Cancel buttons are located at the bottom right of the page.

② Connection Name choose "Create WAN Connection", give the WAN a name(ex:internet3), check "Enable VLAN", set correct VLAN ID and 802.1P, Type is "Route", Service List to "INTERNET", Link Type set to "IP". IP type set to "DHCP". Other configuration keep in default. Click "Create" button.

WAN Connection configuration page showing the following settings:

- Connection Name: Create WAN Conn
- New Connection Name: internet3
- Enable VLAN:
- VLAN ID: 30
- 802.1p: 0
- Type: Route
- Service List: INTERNET
- MTU: 1500
- Link Type: IP
- IP Version: IPv4
- IP Type: DHCP
- IP4: Enable NAT:

Buttons: Help, Logout, Create, Cancel

③ Click Network -> LAN->DHCP Server, Check "Enable DHCP Server", Click "Submit" button to enable the DHCP function.

DHCP Server configuration page showing the following settings:

- LAN IP Address: 192.168.101.1
- Subnet Mask: 255.255.255.0
- Enable DHCP Server:
- DHCP Start IP Address: 192.168.101.2
- DHCP End IP Address: 192.168.101.254
- Assign IspDNS:
- DNS Server1 IP Address: 192.168.101.1
- DNS Server2 IP Address:
- DNS Server3 IP Address:
- Default Gateway: 192.168.101.1
- Lease Time: 86400 sec

Allocated Address table:

| MAC Address | IP Address | Remaining Lease Time | Host Name | Port |
|-------------------|------------|----------------------|-----------|------|
| There is no data. | | | | |

Buttons: Help, Logout, Submit, Cancel

④ Click Status->Network Interface->WAN Connection, can check the IP WAN is connected or not. If the WAN get an ip address, DNS address and the Ipv4 Connection Status is Connected, mean the IP WAN is connected. PC connect to ONU LAN port and obtain an IP address automatically can surf the Internet.

The screenshot shows the ONU web interface with the following structure:

- Navigation Bar:** Status | Network | Security | Application | Administration | Help
- Left Sidebar:**
 - Device Information
 - Network Interface
 - WAN Connection** (selected)
 - PON Inform
 - PON Alarm
 - User Interface
- Main Content Area:**

| | |
|------------------------|-------------------------------|
| Type | DHCP |
| Connection Name | internet3 |
| IP Version | IPv4 |
| NAT | Enabled |
| IP | 192.168.2.61/255.255.255.0 |
| DNS | 192.168.2.254/0.0.0.0/0.0.0.0 |
| IPv4 Gateway | 192.168.2.254 |
| IPv4 Connection Status | Connected |
| IPv4 Disconnect Reason | None |
| IPv4 Online Duration | 2 sec |
| Remaining Lease Time | 3598 sec |
| WAN MAC | e0:67:b3:44:55:66 |
- Buttons:** Help, Logout, Refresh

4.4 ONU Bridge mode access Internet

ONU work in Bridge mode in factory default. In Bridge mode, ONU no need do anything in web interface. ONU just need to set correct port vlan(ex:access, trunk) in OLT.

Note: If ONU have set to Route mode to access Internet before. Please disable LAN port DHCP function when you change the mode to Bridge.

5 ONU Management

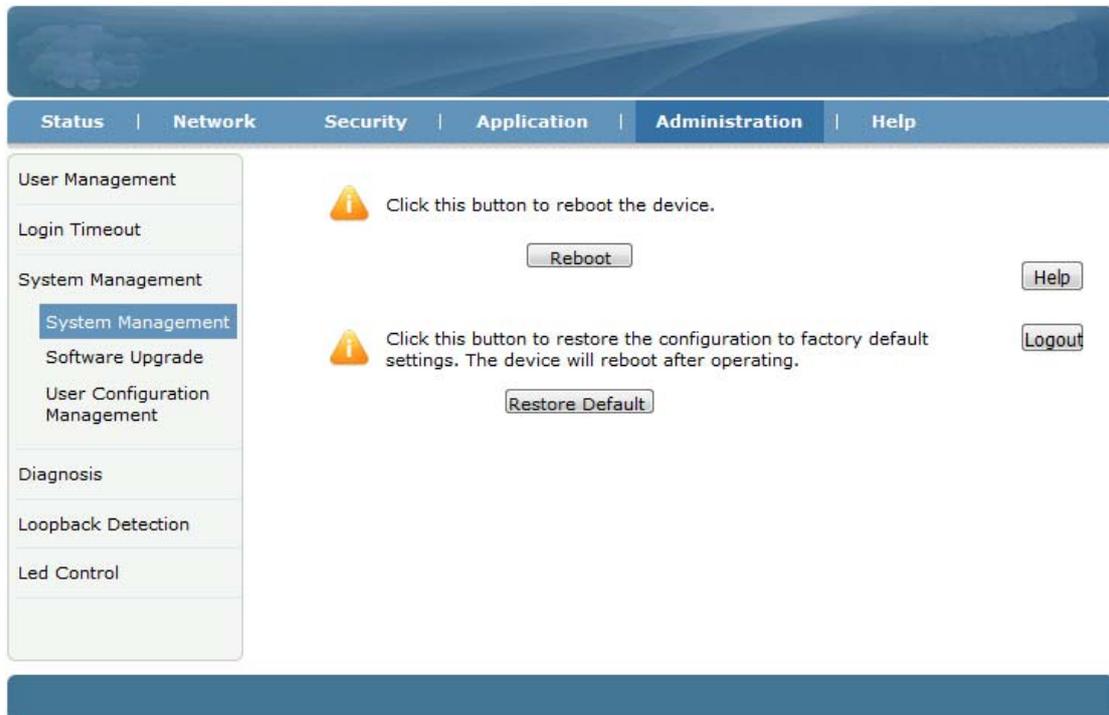
5.1 Login Password

Click Administration->User Management, can change Administrator password and normal user's username and password.



5.2 Reboot ONU

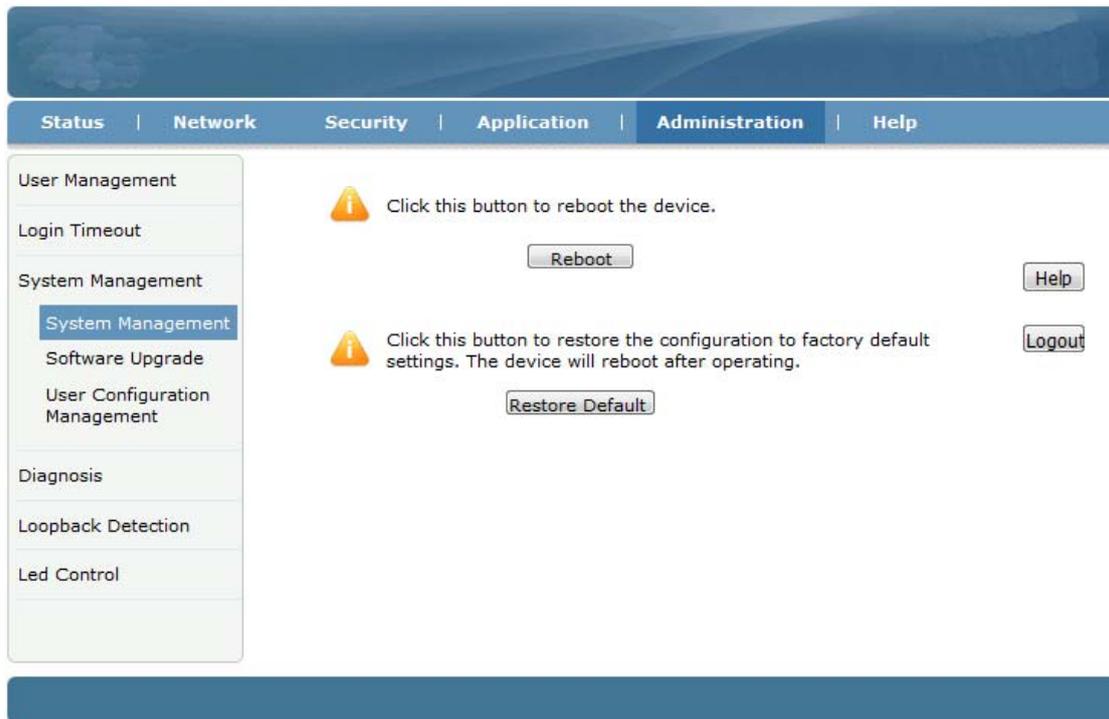
Click Administration->System Management->System Management, Click “Reboot” button can reboot the device.



5.3 Restore Default

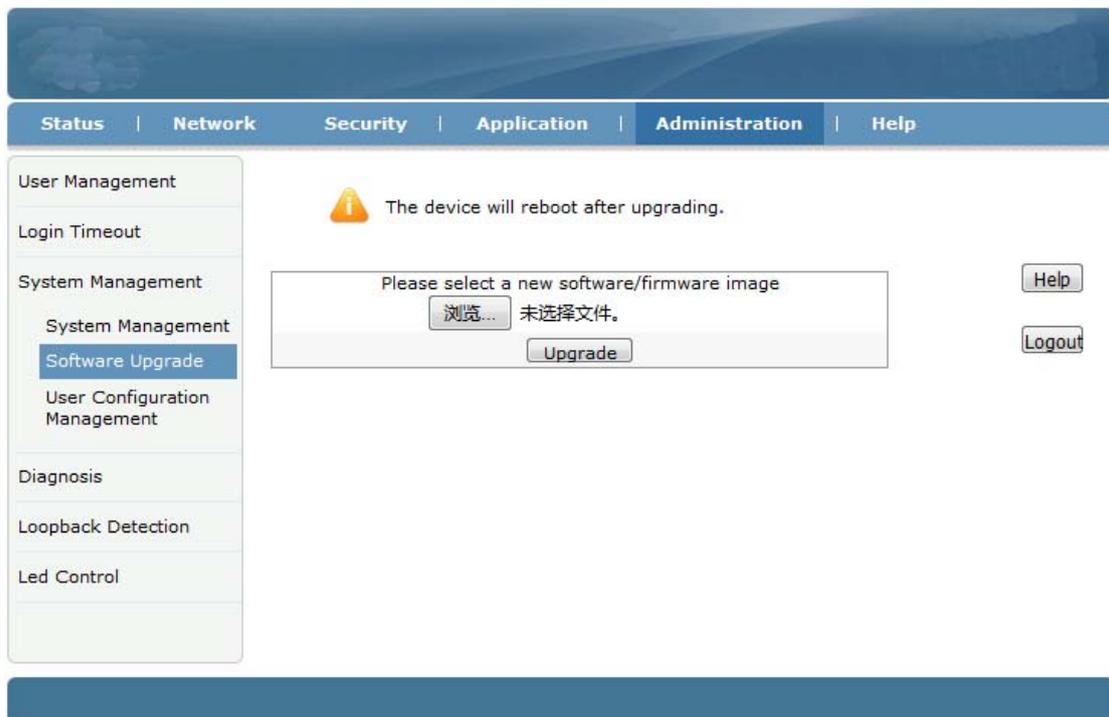
Click Administration->System Management->System Management, Click “Restore

Default" button to set ONU to factory default.



5.4 Software upgrade

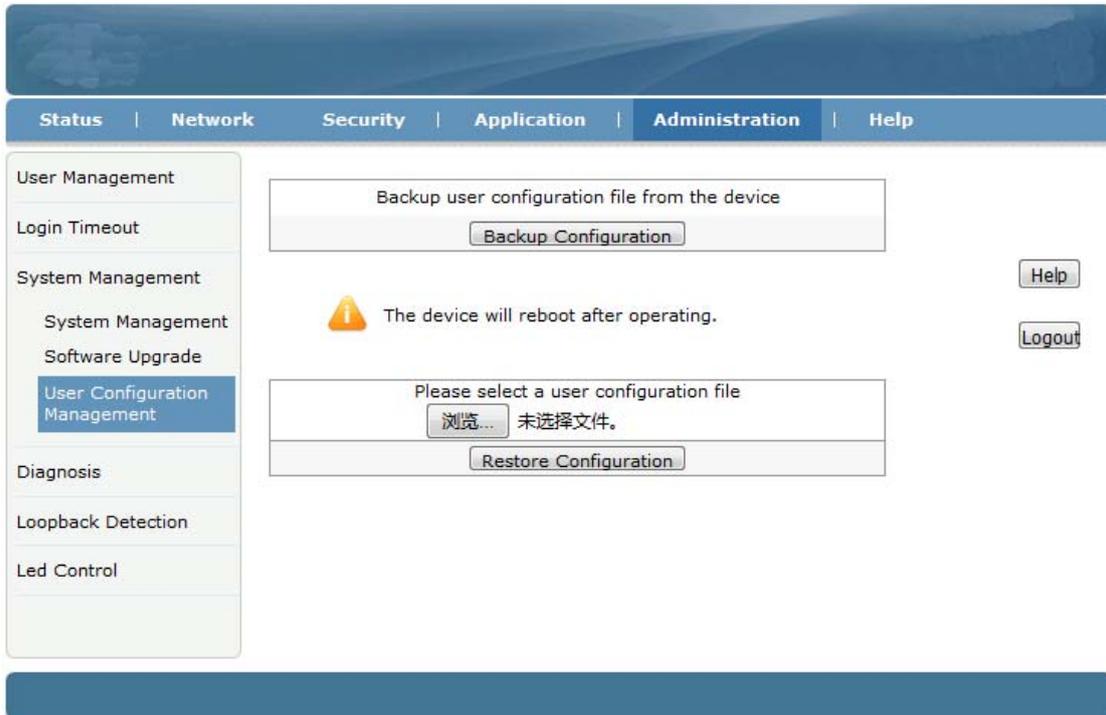
Click Administration->System Management->Software Upgrade to upgrade the ONU firmware version.



5.5 Backup/Restore ONU Configuration

Click Administration->System Management->User Configuration Management, Click

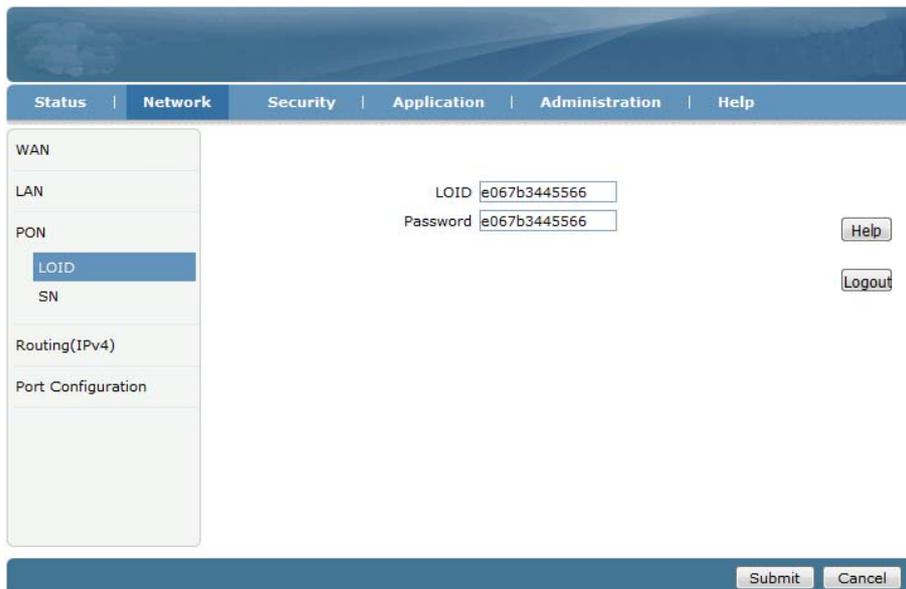
“Backup Configuration” to export configuration, Click “Restore Configuration” to import configuration.



6 Other

6.1 LOID modify

LOID use to register. In default LOID the same as ONU MAC address. Click Network->PON->LOID can view and modify LOID.



6.2 web remote management

On the premise that OLT have configured ONU management ip. Click Security->Service Control->Service Control, check "Enable", Ingress select "OAM_WAN_MNGIP", set "Start Source IP Address" and "End Source IP Address", Mode set to "Permit", check "HTTP". Click "Add" button finally.

| Enable | Ingress | Start Source IP Address | End Source IP Address | Mode | Service List | Modify | Delete |
|--------|---------|-------------------------|-----------------------|--------|--------------|--------|--------|
| ✓ | WAN | | | Permit | TELNET | | |

Note: If you need to configure the above remote access ports, please click on the hyperlinks below.
[Modify Remote Access Port](#)

One more item in service list as shown below:

| Enable | Ingress | Start Source IP Address | End Source IP Address | Mode | Service List | Modify | Delete |
|--------|---------|-------------------------|-----------------------|--------|--------------|--------|--------|
| ✓ | WAN | | | Permit | TELNET | | |
| ✓ | OAM_WA | 192.168.3.1 | 192.168.3.254 | Permit | HTTP | | |

Note: If you need to configure the above remote access ports, please click on the hyperlinks below.
[Modify Remote Access Port](#)