

# **FD511HZ-GPON User Manual**

**Version: v1.1**

## Contents

1	Attention .....	2
1.1	Install Caution .....	2
1.2	Precautions For Use .....	2
2	Introduce .....	3
2.1	Feature.....	4
2.2	Environmental Paramenter.....	4
2.3	Interface .....	5
2.4	Application.....	6
3	Login ONU web.....	6
4	Internet service configuration .....	7
4.1	PPPoE Dial-up access Internet.....	7
4.2	Static IP access Internet .....	9
4.3	DHCP access Internet .....	12
4.4	ONU Bridge mode access Internet.....	14
5	ONU Management .....	14
5.1	Login Password.....	14
5.2	Reboot ONU .....	14
5.3	Restore Default.....	15
5.4	Software upgrade .....	15
5.5	Backup/Restore ONU Configuration .....	16
6	Other .....	17
6.1	LOID modify.....	17
6.2	SN modify .....	17
6.3	web remote management.....	18
7	Conclusion .....	19

# 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

FD511HZ GPON ONT is one of the GPON 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 GPON network.

GPON is the latest generations of access network technology. ITU-T G.984 is the standard protocol of GPON. The GPON standard differs from other PON standards in that it achieves higher bandwidth and higher efficiency using larger, variable-length packets. GPON offers efficient packaging of user traffic, with frame segmentation allowing higher quality of service (QOS) for delay-sensitive voice and video communications traffic. GPON networks provides the reliability and performance expected for business services and provides an attractive way to deliver residential services. GPON enables Fiber To The Home (FTTH) deployments economically resulting to accelerated growth worldwide.

FD511HZ provide one GE auto-adapting Ethernet ports. The FD511HZ features high-performance forwarding capabilities to ensure excellent experience with Internet and HD video services. Therefore, the FD511HZ 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.

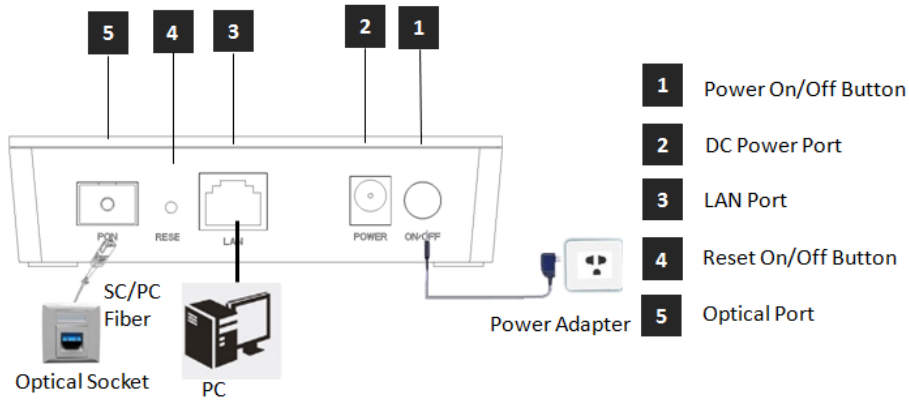
## 2.1 Feature

- Fully compatible with ITU-T G.984.1/2/3/4
- Support downlink rate 2.448Gbit/s, uplink rate is 1.244Gbit/s
- Support 32 TCONT, 256 GEMPORT
- Support bidirectional FEC, supports the RS (255, 239) FEC decoding
- Support AES128 encryption and decryption functions with G.984 standard
- Support SBA and DBA bandwidth allocation
- Support PLOAM, embedded OMCI management with G.984 standard
- Support Dying-Gas detection and reporting
- Support rogue ONU detection
- Support GPON energy saving of G987.3 protocol
- Support Tag/Untag Ethernet frame of 802.1 and Q 802.3 standard, support QinQ
- Support CTC2.1, TR156 requirements of flexible tag processing
- Support for flexible flow classification, maximum 520 flow classification rules
- Support link error monitoring and loop monitoring
- Support a variety of multicast forwarding mode, support multicast replication
- Auto-negotiation and manual settings of Ethernet supporting rate, duplex mode
- UNI interface supports STP/RSTP protocol
- Provide QoS guarantees for different priority business through SLA restraining, Policing, queue management scheduling / congestion avoidance, discarding management mode
- Support flow control based on entrance , choose Pause frame reaction pressure to Packet loss for the business beyond
- Support HQoS function

## 2.2 Environmental Paramenter

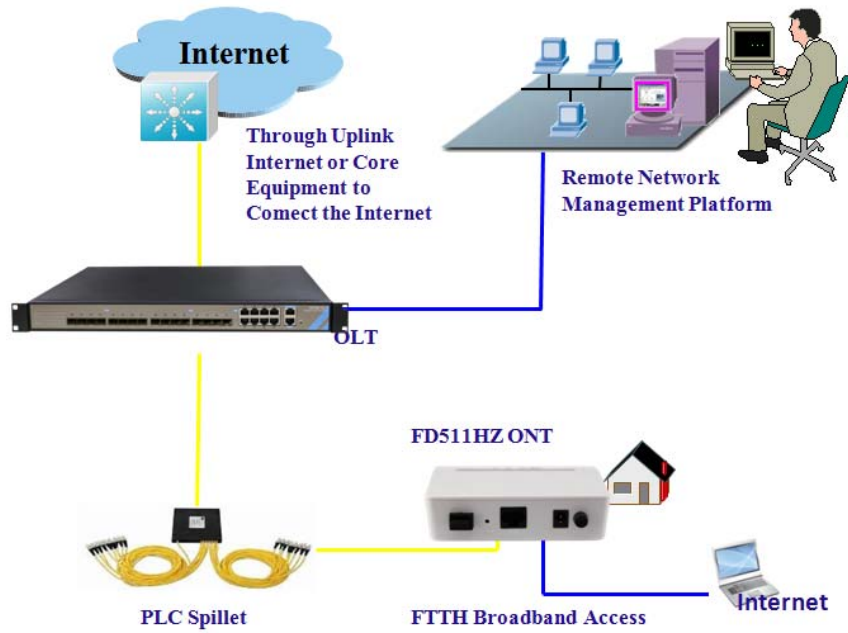
- Environmental Requirement
  - Operation temperature:  $-0^{\circ}\text{C}\sim 50^{\circ}\text{C}$
  - Operation humidity: 5%—95%
- Power Specification
  - Rate voltage/ current: 12 V/0.5A
  - Power: <2W

### 2.3 Interface



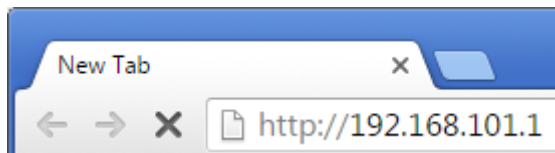
Indicator light			Introduction
1	LAN	LAN port status	On: Ethernet connection is normal; Blinking: Data is being transmitted through the Ethernet port; Off: Ethernet connection is not set up;
2	LOS	GPON optical signals	On: Optical power lower than receiver
3	PON	ONT Register	On: Success to register to 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 GPON ONU Ethernet ports, open a browser, copy and paste the URL: <http://192.168.101.1>

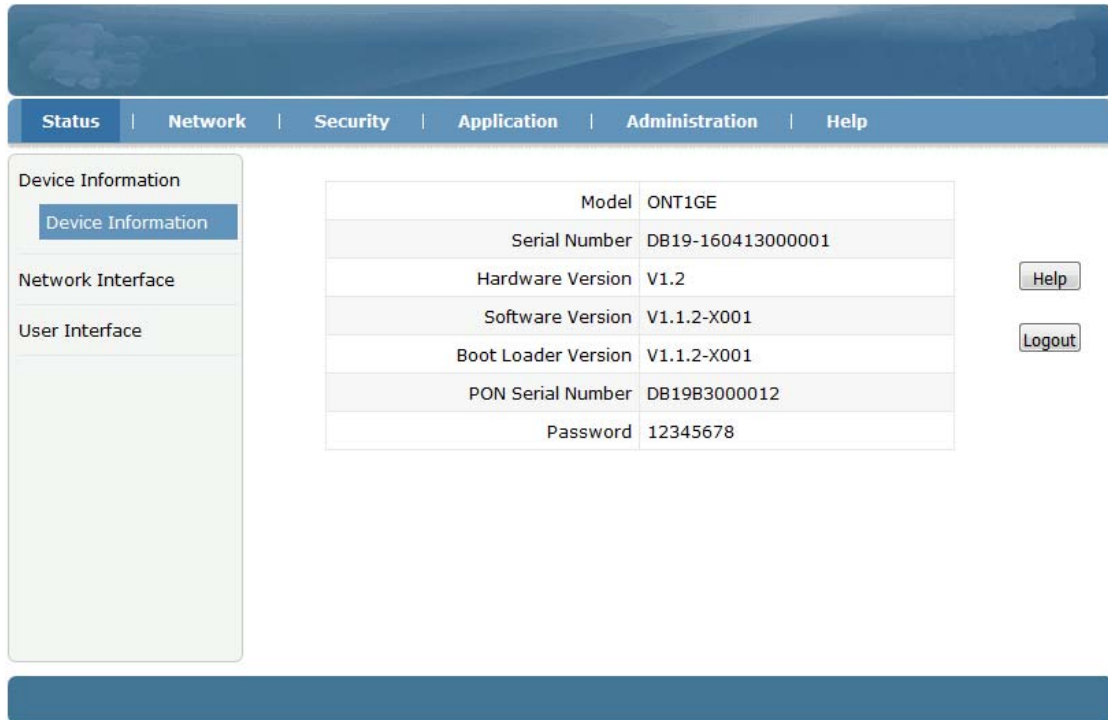


Page as shown below:

A screenshot of the ONU web login page. The page has a light gray header with the text 'Please login to continue...'. Below the header, there are two input fields: 'Username' and 'Password'. At the bottom of the page, there are two blue buttons: 'Login' and 'Reset'.

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

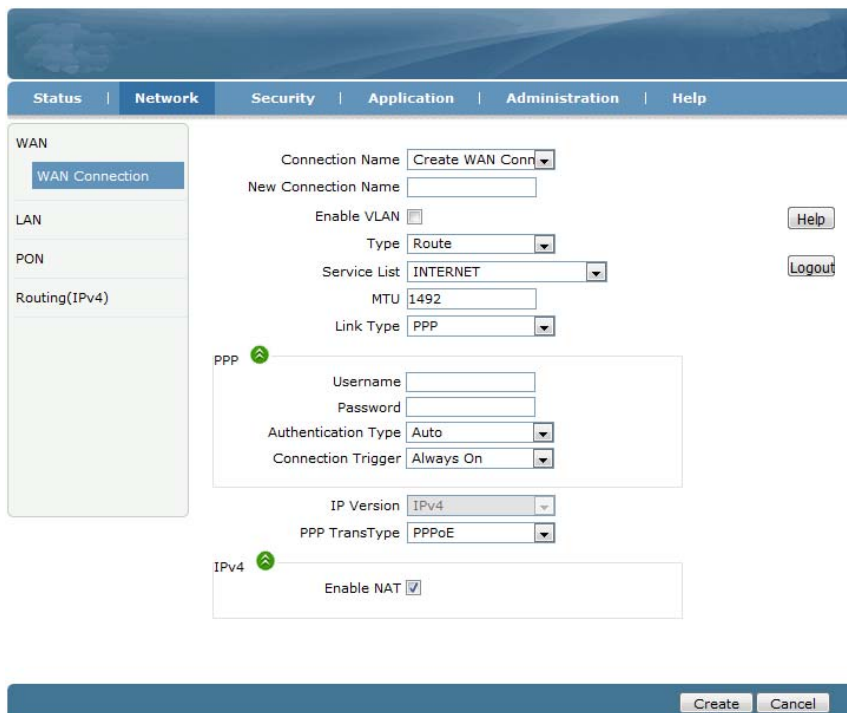
Click "Login" button. Web interface of basic information as shown below:



## 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:





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.

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

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 contains 'Device Information', 'Network Interface' (with 'WAN Connection' selected), 'PON Inform', and 'User Interface'. The main content area displays a table of connection parameters:

Type	PPPoE
Connection Name	internet
IP Version	IPv4
NAT	Enabled
IP	10.0.0.34
DNS	202.96.134.33/202.96.128.86/0.0.0.0
IPv4 Connection Status	Connected
IPv4 Online Duration	23 sec
Disconnect Reason	None
WAN MAC	e0:67:b3:00:00:12

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

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

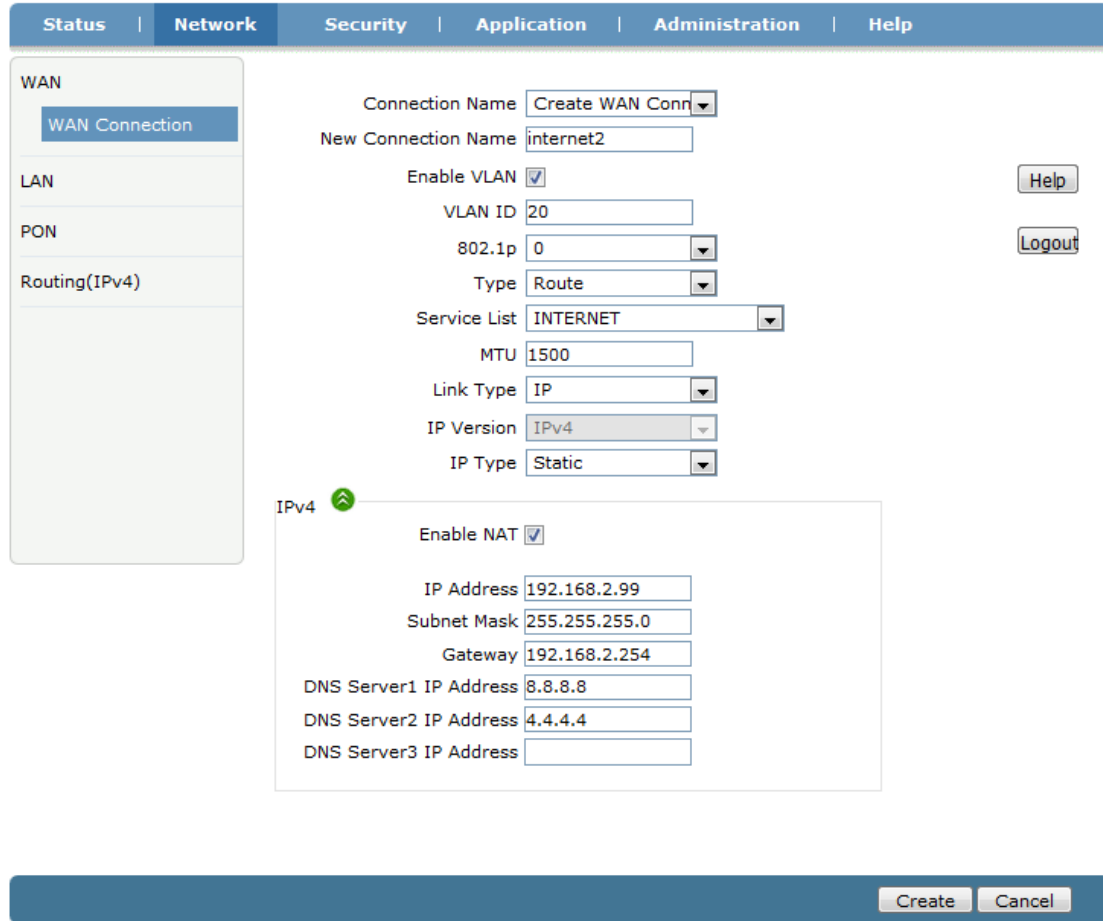
①Click Network->WAN->WAN Connection

The screenshot shows the 'WAN Connection' configuration page. The left sidebar contains 'WAN' (with 'WAN Connection' selected), 'LAN', 'PON', and 'Routing(IPv4)'. The main content area contains the following configuration fields:

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

Buttons for 'Help', 'Logout', 'Create', and 'Cancel' are visible.

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.



The screenshot shows the WAN Connection configuration page. The left sidebar has 'WAN Connection' selected. The main area contains the following configuration options:

- Connection Name: Create WAN Conn
- New Connection Name: internet2
- Enable VLAN:
- VLAN ID: 20
- 802.1p: 0
- Type: Route
- Service List: INTERNET
- MTU: 1500
- Link Type: IP
- IP Version: IPv4
- IP Type: Static

The IPv4 section is expanded and includes:

- 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: (empty)

Buttons for 'Help' and 'Logout' are visible on the right. At the bottom, there are 'Create' and 'Cancel' buttons.

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

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

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

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

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.

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:b3:00:00:12

### 4.3 DHCP access Internet

① Click Network->WAN->WAN Connection.

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.

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

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:

Subnet Mask:

Enable DHCP Server

DHCP Start IP Address:

DHCP End IP Address:

Assign IspDNS

DNS Server1 IP Address:

DNS Server2 IP Address:

DNS Server3 IP Address:

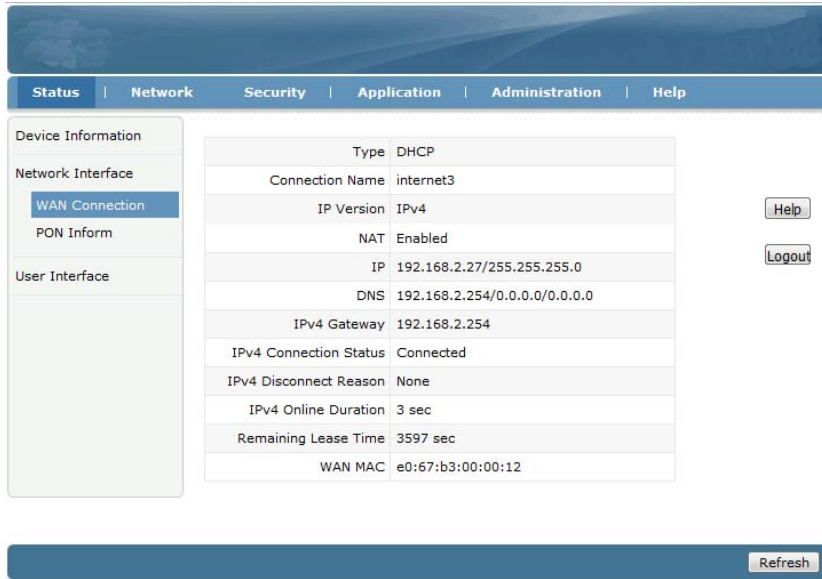
Default Gateway:

Lease Time:  sec

Allocated Address

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

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.



#### 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

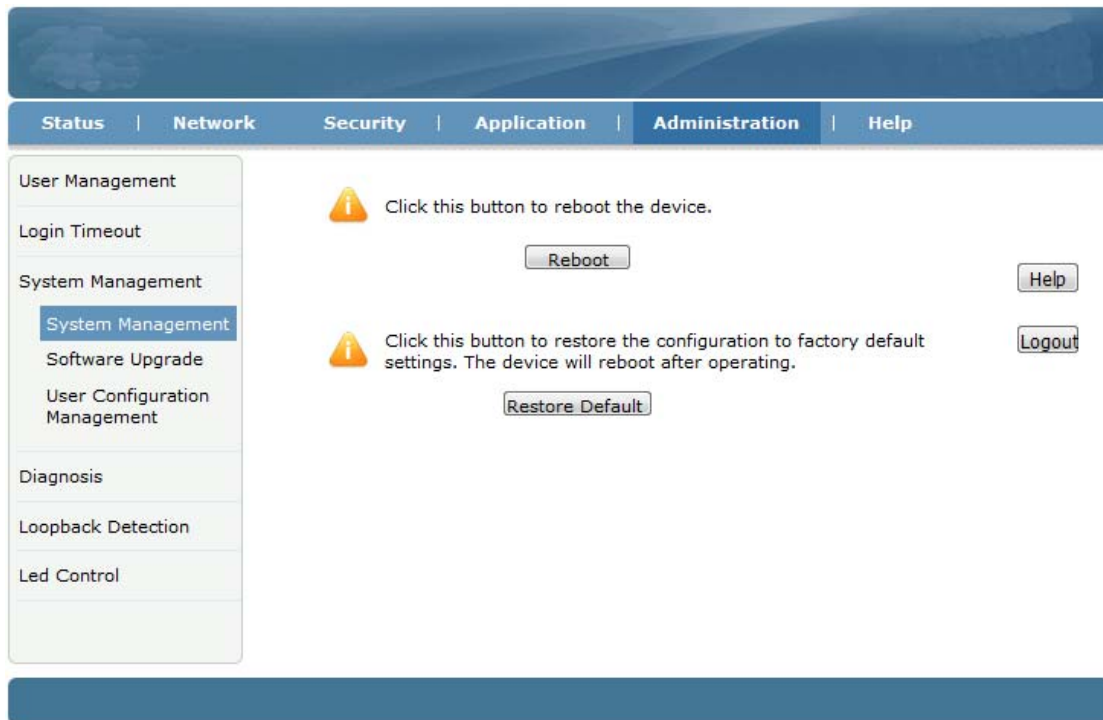
### 5.1 Login Password

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



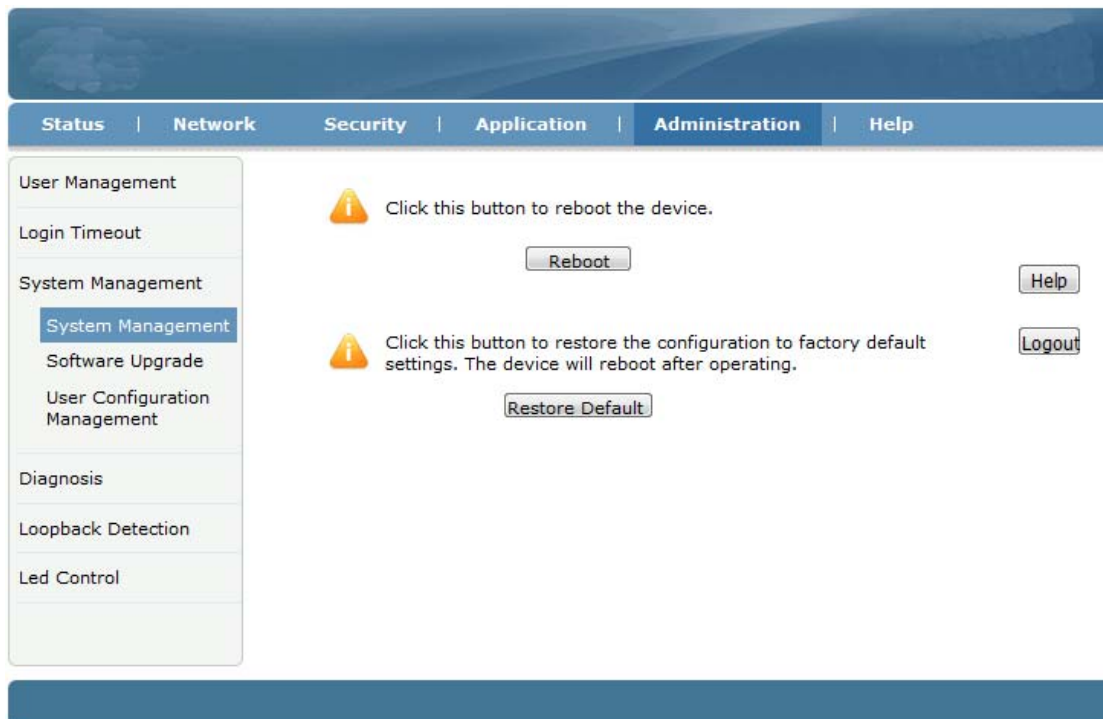
### 5.2 Reboot ONU

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



### 5.3 Restore Default

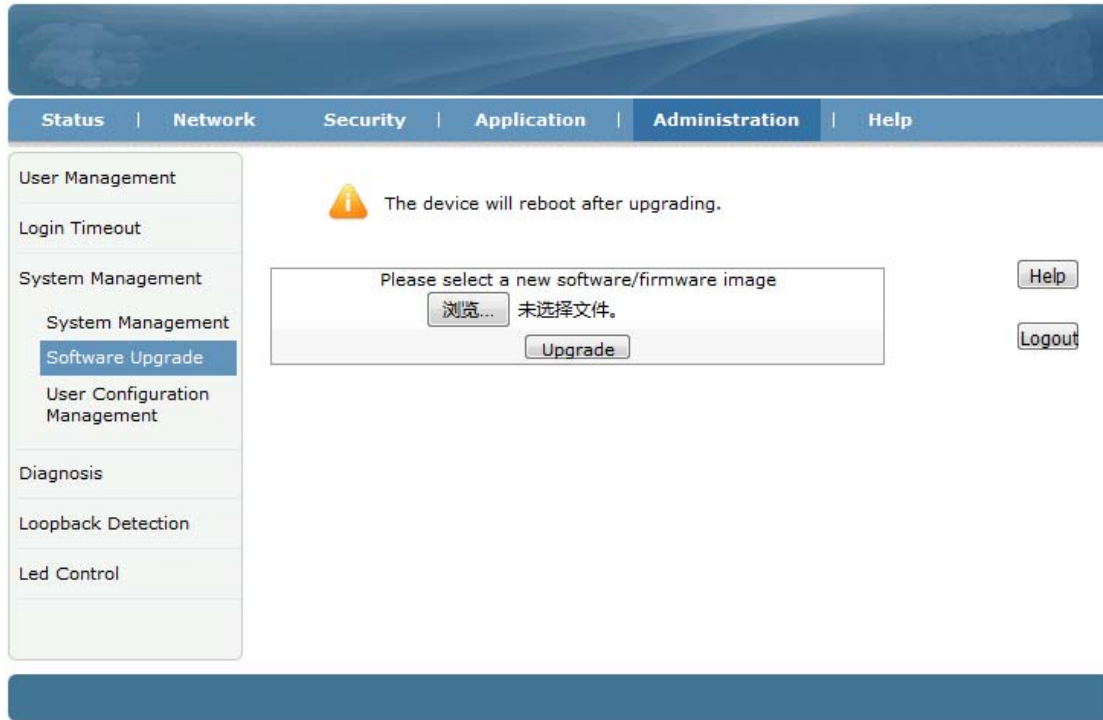
Click Administration->System Management->System Management, Click “Restore Default” button to set ONU to factory default.



### 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.

The screenshot shows the web interface for GPON FD511HZ. The top navigation bar includes 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. The left sidebar has a tree view with 'WAN', 'LAN', 'PON', 'LOID', 'SN', 'Routing(IPv4)', and 'Port Configuration'. The 'LOID' option is selected. The main content area displays 'LOID' and 'Password' fields, both containing the value 'e067b3445566'. To the right of these fields are 'Help' and 'Logout' buttons. At the bottom of the page are 'Submit' and 'Cancel' buttons.

### 6.2 SN modify

SN use to register. Click Network->PON->SN can view and modify SN and SN password. (ONU must reboot after modification)

The screenshot shows the web interface for GPON FD511HZ. The top navigation bar includes 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. The left sidebar has a tree view with 'WAN', 'LAN', 'PON', 'LOID', 'SN', 'Routing(IPv4)', and 'Port Configuration'. The 'SN' option is selected. The main content area displays a warning message: 'Configure password take effect after rebooting the device.' Below the warning, the 'SN' and 'Password' fields are shown. The 'SN' field contains 'DB19B3000012' and the 'Password' field contains '12345678'. To the right of these fields are 'Help' and 'Logout' buttons. At the bottom of the page are 'Submit' and 'Cancel' buttons.

### 6.3 web remote management

On the premise that OLT have configured ONU management ip. Click Security->Service Control->Service Control, check "Enable", Ingress select "omci\_ipv4\_static\_1", 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
<input checked="" type="checkbox"/>	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
<input checked="" type="checkbox"/>	WAN			Permit	TELNET		
<input checked="" type="checkbox"/>	omci_ipv4	192.168.3.1	192.168.3.255	Permit	HTTP		

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

## 7 Conclusion

Thanks for using CDATA Products !

Contact:

Company Address: Flat 6, Bldg 4, South 2 of Honghualing Industrial Zone, Liuxian Road, Xili Town, Shenzhen, Guangdong

Factory Address: Flat 8, Bldg 2, South 2 of Honghualing Industrial Zone, Liuxian Road, Xili Town, Shenzhen, Guangdong

Tel: 0755-26014509/26014710/26014711

Fax: 0755-26014506

Website: [www.cdatic.com](http://www.cdatic.com)  
[www.cdatic.com.cn](http://www.cdatic.com.cn)