



1GE DUAL MODE ONU

USER MANUAL

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Chapter 1 Product Introduction

1.1 Product Description

1GE Dual mode ONU meets telecom operators FTTO (office), FTTD (Desk), FTTH(Home) broadband speed, SOHO broadband access, video surveillance and other requirements and design EPON/GPON Gigabit Ethernet products. It is based on mature and stable, cost-effective EPON/GPON technology, high reliability, easy management, configuration flexibility and good quality of service (QoS) guarantees. They are fully compliant with GPON and EPON technical regulations such as ITU-T G.984.x, IEEE802.3ah and so on. Dual mode ONU can detect and exchange PON mode automatically.



Figure 1-1: 1GE Dual Mode ONU

1.2 Special features

- Integrated auto detecting, auto configuration, and auto firmware upgrade technology.
- Support OAM/OMCI remote configuration and maintenance.
- Support rich VLAN, DHCP Server and IGMP snooping multicast feature.
- Fully compatibility with OLT based on Broadcom/PMC/Cortina chipset.
- Support NAT, Firewall function.
- Support bridge and router mode.

1.3 Technical Parameter

Technical items	Descriptions
PON interface	1 G/EPON port(EPON PX20+ and GPON Class B+) Receiving sensitivity: $\leq -28\text{dBm}$ Transmitting optical power: $0 \sim +4\text{dBm}$ Transmission distance: 20KM
Wavelength	Tx1310nm,Rx 1490nm

Optical interface	SC/PC connector
Interface	1* 10/100/1000Mbps auto adaptive Ethernet interfaces. Full /Half Duplex, RJ45 connectors.
Indicator	3 indicators, SYS, LINK/ACT, REG.
Operating condition	-5℃～55℃, 10%～90% (non-condenseing)
Storing condition	-30℃～60℃, 10%～90% (non-condenseing)
Power supply	DC 12V, 0.5A
Power consumption	≤4W
Dimension	82mm×82mm×25mm (L×W×H)
Net weight	0.08Kg

1.4 Application chart

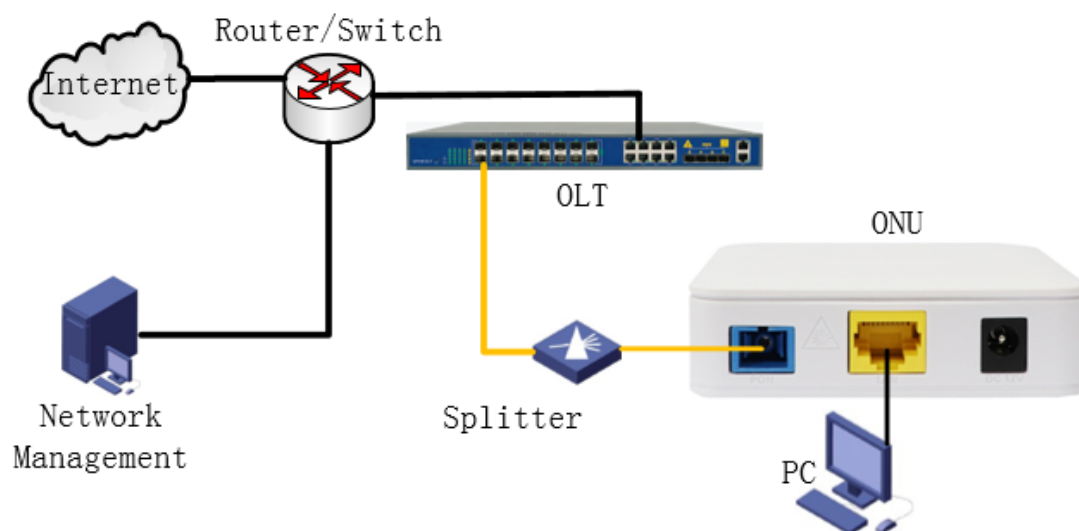


Figure 1-2: Application chart

1.5 Panel description

Interface/Button panel





Figure 1-3: Interface/Button panel

Name	Function
PON	Connect to OLT by SC type fiber connector, single mode optical fiber cable.
LAN	Connect PC or other devices with Ethernet port by Cat5 cable, RJ-45 connector.
DC 12V	Connect with power adapter. DC 12V, 0.5A.
RST	Press RST button over 10 seconds, onu restores factory default and reboot.

Indication Panel

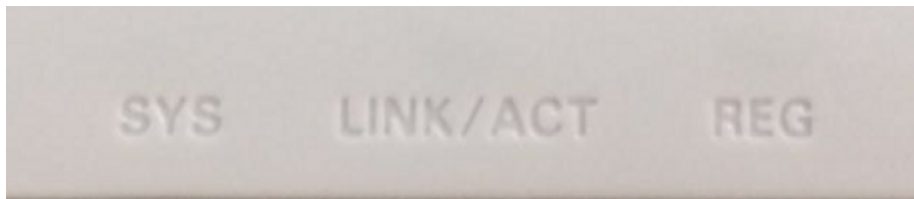


Figure 1-4: Indication panel

LED	Mark	Status	Description
Interface	LINK/ACT	ON	Port is connected properly (LINK).
		Off	Port connection exception or not connected.
		Blink	Port is sending or/and receiving data (ACT).
Registration	REG	ON	Green : the device is registered to PON system.
		OFF	Device has received optical signal and not registered to the PON system.
		Blink	Red : the Device does not receive optical signals. Green : the device registration is incorrect.
System	SYS	On / Off	System is not running or fatal error
		Blink	Normal running

Chapter 2 Quick Installation

2.1 Standard Packing Contents

When you received our product, please check carefully to make sure that our products whether have some defects or not. If something wrong with shipping, please contact carrier; other damage or lack of some parts, please contact with dealer.

Contents	Quantity
Dual Mode ONU	1 pcs
Power Adapter	1 pcs
Installation Guide	1 pcs

2.2 Quick Installation

1. Connecting the optical fiber cable to the unit.
 - a) Remove the protective cap of the optical fiber.
 - b) Clean the end of the optical fiber with an optical fiber end cleaner.
 - c) Remove the protective cap of the ONU optical interface (PON interface). Connect the fiber to the PON port on the unit.

Note: When measuring the optical power before connecting to the ONU, it is recommended to use a PON Inline Power Meter.

While connecting, please note:

- Keep the optical connector and the optical fiber clean.
 - Make sure there are no tight bends in the fiber and that the bending diameter is greater than 6cm. Otherwise, the optical signal loss may be increased, to the extent that signal may be unavailable.
 - Cover all optic ports and connectors with protective cap to guard against dust and moisture when the fiber is not used.
2. Apply power to the unit. Push the power button.
 3. After the ONU is power ON, Indicators should light up as for normal operation. Check whether the PON interface status LED (PON) is on continuously. If it is, the connection is normal; otherwise there is either problem of the physical connection or the optical level at either end. This may be caused by either too much or too little attenuation over the optical fiber. Please refer to the Layout Description section of this installation manual for normal LED activity.
 4. Check all signal levels and services on all the ONU communication ports.

Unit Installation Adjustment

Installing the ONU on a horizontal surface (Bench top)

Put the ONU on a clean, flat, sturdy bench top. You must keep the clearance for all sides of the unit to more than 10cm for heat dissipation.

Installing the ONU on a vertical surface (Hanging on a wall)

You can install the ONU on a vertical surface by using the mounting holes on the bottom of the ONU chassis and two flat-head wood screws.

- a) Insert the screws into the wall. The screw positions must be in the same horizontal line

and the distance between them must be 145mm. Reserved at least 6mm between the screw caps and the wall.

- b) Hang the ONU on the screws through the mounting holes.

Chapter 3 Configuration

After finishing the basic connection configuration, you can use its basic function. In order to satisfy individuation service requirements, this charter provides the user parameter modification and individuation configuration description.

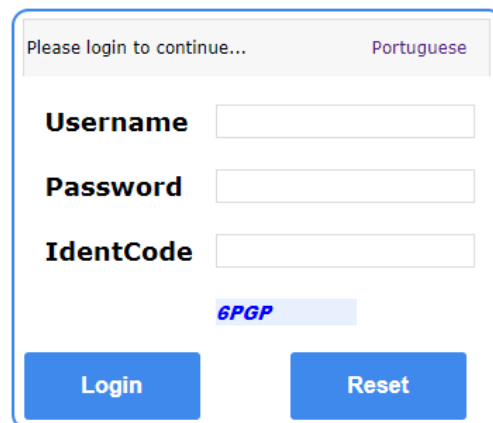
This model of ONU is designed as SFU(single family unit, bridge mode), there is no bridge mode WAN in ONU. When it works on bridge mode, VLAN of LAN port should be configured by OLT. When it works on router mode, you may configure through its web management.

3.1 Login

The device is configured by the web interface. The following steps will enable you to login:

1. Conform “2.2 Quick Installation” to install;
2. The device default IP is 192.168.1.1;
3. Open your web browser, type the device IP in address bar;
4. Entry of the user name and password will be prompted. Enter the default login user name and password.

By default, there are two user levels for management. Administration level user name is "admin", password is "stdONU0i". Normal level user name is "user", password is "user".



The image shows a web-based login form. At the top, it says "Please login to continue..." with a language dropdown menu currently set to "Portuguese". Below this are three input fields labeled "Username", "Password", and "IdentCode". Under the "IdentCode" field, there is a blue button labeled "6PGP". At the bottom of the form are two blue buttons: "Login" and "Reset".

Figure 3-1: Login

For security, you will be asked to modify password after you logged in by default password. The new password must meet the requirements that display on the webpage. After submitted, it requires you to login by new password.

1> The password must contain at least 6 characters.
 2> The password must contain at least two of the following combinations:
 0-9, a-z, A-Z, Special characters (. _ / @ ! ~ # \$ % ^ * () + = ?).
 Input Max 16 characters, then click "submit" to change password. Note: Password should not contains space.

Username

New Password

Confirmed Password

Figure 3-2: Change Password

3.2 Status

This part shows the main information of product.

3.2.1 Device Information

This page shows the device basic information, such as Device Model, Hardware Version, Software Version, PON SN, PON mode and so on.

Status	Network	Security	Application	Administration	Help																
<div> <div> Device Information Device Information Network Interface User Interface </div> <table border="1"> <tr> <td>Model</td> <td>D401</td> </tr> <tr> <td>Serial Number</td> <td>-</td> </tr> <tr> <td>Hardware Version</td> <td>V2.8S</td> </tr> <tr> <td>Software Version</td> <td>V6.0.4P1T8 200703175947</td> </tr> <tr> <td>Boot Loader Version</td> <td>V6.0.4P1T8</td> </tr> <tr> <td>PON Serial Number</td> <td>MONU00b86dc1</td> </tr> <tr> <td>Password</td> <td>123456</td> </tr> <tr> <td>PON Mode</td> <td>GPON</td> </tr> </table> <div> Portugu Help Logout </div> </div>						Model	D401	Serial Number	-	Hardware Version	V2.8S	Software Version	V6.0.4P1T8 200703175947	Boot Loader Version	V6.0.4P1T8	PON Serial Number	MONU00b86dc1	Password	123456	PON Mode	GPON
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Boot Loader Version	V6.0.4P1T8																				
PON Serial Number	MONU00b86dc1																				
Password	123456																				
PON Mode	GPON																				

Figure 3-3: Device Information

3.2.2 Network Interface

3.2.2.1 WAN Connection

This page shows WAN connection information you have configured.

The screenshot shows the 'WAN Connection' configuration page. The left sidebar has a tree view with 'Device Information', 'Network Interface', 'WAN Connection' (selected), 'PON Inform', and 'User Interface'. The main content area displays a table of WAN connection parameters. To the right of the table are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom right is a 'Refresh' button.

Type	DHCP
Connection Name	test
IP Version	IPv4
NAT	Enabled
IP	192.168.6.155/255.255.255.0
DNS	202.96.128.86/0.0.0.0/0.0.0.0
IPv4 Gateway	192.168.6.1
IPv4 Connection Status	Connected
IPv4 Disconnect Reason	None
IPv4 Online Duration	13 sec
Remaining Lease Time	1187 sec
WAN MAC	80:14:a8:b8:6d:c1

Figure 3-4: WAN Connection

3.2.2.2 PON Inform

This page shows the PON information, such as PON state, input power, output power, and optical module voltage, current, temperature.

The screenshot shows the 'PON Inform' page. The left sidebar has a tree view with 'Device Information', 'Network Interface', 'WAN Connection', 'PON Inform' (selected), and 'User Interface'. The main content area displays a table of PON information. To the right of the table are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom right is a 'Refresh' button.

GPON State	Registration completed
Optical Module Input Power(dBm)	-21.7
Optical Module Output Power(dBm)	2.6
Optical Module Supply Voltage(uV)	3378000
Optical Transmitter Bias Current(uA)	10700
Operating Temperature of the Optical Module(°C)	32

Figure 3-5: PON Information

3.2.3 User Interface

This page shows the Ethernet port information, including port status, MAC address and statistics.

Ethernet Port	
Ethernet Port	LAN1
Status	Up/1000Mbps/Full Duplex
MAC Address	80:14:a8:b8:6d:c1
Bytes Received	279783
Packets Received	2687
Unicast Packets Received	2137
Multicast Packets Received	229
Error Packets Received	0
Discard Packets Received	0
Bytes Sent	3675284
Packets Sent	5346
Unicast Packets Sent	3319
Multicast Packets Sent	43
Error Packets Sent	0
Discard Packets Sent	0

Figure 3-6: Ethernet Information

3.3 Network

3.3.1 Internet

This page allows user to configure router mode WAN connection. You can only configure route mode WAN connections here. The device default settings is bridge mode(without any WAN).

Figure 3-7: WAN Connection

Parameter		Illustration
Connection Name		The list of WAN connection name that has been created. If you want to create a new WAN connection, please select “Create WAN Connection” and input other Parameter at the same time and then click “Create” button. If you want to edit WAN connection, please select the wan connect name you want to edit and change some Parameter and then click “Modify” button. If you want to delete one connection, please select the wan connection you want to delete and then click “Delete” button.
New Connection Name		Name of new connection that you want to create.
VLAN	Enable VLAN	Checked indicates the packets are transmitted by the PON port take VLAN tag. Unchecked indicates the packets are transmitted by the PON port don't take VLAN tag.
	VLAN ID	Input the VLAN ID you want to set. Range is 0~4094. Input 0 means don't use any VLAN.
	802.1P	Select VLAN priority you want to set. Range is 0~7.
Type		Bridge/Route. There is only Route mode can be selected. The device works on route mode with this WAN connection. If you want it to work on bridge mode, don't configure any WAN connection.
Service List		Service mode indicates what the wan connection is used for. There is only INTERET can be selected.
MTU		Max transfer unit. Default Value (in Byte): 1500(static/DHCP) or 1492(PPPoE).
Link Type		PPP/IP. PPP is used for PPPoE, and IP is used for static IP or DHCP.

PPP	Username	PPPoE account.
	Password	PPPoE password.
	DMS name	Server name.
	Authentication Type	PPPoE authentication type, including Auto, PAP and CHAP.
	Connection Trigger	The trigger of PPPoE connection after disconnected. Always On: once PPPoE disconnected, ONU will connect again automatically. On Demand: ONU will connect again if there is data traffic. Manual: ONU will connect again after submitted the configurations.
IP Version		IPv4/IPv6
Enable NAT		Checked indicates NAT function is enabled. Unchecked indicates NAT function is disabled. Only IPv4 has this option.
IP Type/PPP TransType		Method of WAN connection Obtains IP address. If link type is PPP, PPP TransType will be PPPOE; if link type is IP, IP Type will be static or DHCP.
IPv6	IPv6 Info Get Mode	Method of WAN connection obtains IPv6 address, including Manual Mode and Auto Mode.
	GUA From	Method of WAN connection obtains Global Unique IPv6 Address.
	DNSv6 From	Method of WAN connection obtains DNSv6.
	Prefix Delegation From	Method of prefix delegation.

3.3.2 LAN

This page supports the management of the ONU's IP address, dynamic address management, including dynamic address distribution and relevant parameters distribution, such as lease time, address range, DHCP Proxy, etc.

3.3.2.1 DHCP Server

This page contains LAN IPv4 address and LAN DHCP server configurations.

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: 192.168.1.1
Subnet Mask: 255.255.255.0

Enable DHCP Server: ☐

DHCP Start IP Address: 192.168.1.2
DHCP End IP Address: 192.168.1.254

Assign IspDNS: ☐

DNS Server1 IP Address: 192.168.1.1
DNS Server2 IP Address:
DNS Server3 IP Address:
Default Gateway: 192.168.1.1
Lease Time: 86400 sec

Allocated Address

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

Submit Cancel

Figure 3-8: LAN IPv4 Address Settings

Parameter		Illustration
LAN IP Address		LAN IPv4 address.
Subnet Mask		LAN IPv4 mask.
Enable DHCP Server		Switch of ONU DHCP server.
Start IP Address		The start IP address of DHCP IP pool.
End IP Address		The end IP address of DHCP IP pool.
DNS	Assign ISP DNS	Checked indicates LAN DHCP will use ISP DNS. Unchecked indicates LAN DHCP use DNS that set in the textbox.
	DNS Server IP Address	DNS server addresses for LAN DHCP.
Default Gateway		Default gateway of LAN DHCP. It should be the same as LAN IPv4 IP address.
Lease Time		Lease time of the IP address.

3.3.2.2 RA Service

This page show RA configuration.

Status	Network	Security	Application	Administration	Help
<div> <div> WAN LAN DHCP Server RA Service DHCP Server(IPv6) Prefix Management Port Service(IPv6) PON Routing(IPv4) </div> <div> Minimum Wait Time <input type="text" value="198"/> (3 ~ 1350) Maximum Wait Time <input type="text" value="600"/> (4 ~ 1800) M <input type="checkbox"/> O <input checked="" type="checkbox"/> </div> <div> Portugu Help Logout </div> </div>					
<div>Submit</div> <div>Cancel</div>					

Figure 3-9: RA Configuration

3.3.2.3 DHCP Server(IPv6)

This page contains LAN IPv6 address and LAN DHCP server configurations.

Status	Network	Security	Application	Administration	Help						
<div> <div> WAN LAN DHCP Server RA Service DHCP Server(IPv6) Prefix Management Port Service(IPv6) PON Routing(IPv4) </div> <div> LAN IP Address <input type="text" value="fe80::1"/> / <input type="text" value="64"/> Enable DHCP Server <input checked="" type="checkbox"/> DNS Refresh Time <input type="text" value="86400"/> sec <div> Allocated Address <table border="1"> <thead> <tr> <th>DUID</th> <th>IP Address</th> <th>Remaining Lease Time</th> </tr> </thead> <tbody> <tr> <td colspan="3">There is no data.</td> </tr> </tbody> </table> </div> </div> <div> Portugu Help Logout </div> </div>						DUID	IP Address	Remaining Lease Time	There is no data.		
DUID	IP Address	Remaining Lease Time									
There is no data.											
<div>Submit</div> <div>Cancel</div>											

Figure 3-10: LAN IPv6 Address Settings

3.3.2.4 Prefix Management

This page is used to configure IPv6 prefix parameters.

The screenshot shows the 'Prefix Management' page. On the left is a sidebar menu with categories: WAN, LAN, DHCP Server, RA Service, DHCP Server(IPv6), Prefix Management (highlighted), Port Service(IPv6), PON, and Routing(IPv4). The main content area has a top navigation bar with 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. Below this, there are input fields for 'WAN Connection', 'Prefix Source', 'Prefix' (with a dropdown for '/'), 'Preferred Lifetime' (in seconds), and 'Valid Lifetime' (in seconds). There are also checkboxes for 'Prefix Delegation' with options 'RA' and 'DHCPv6'. On the right side, there are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom, there is a table with columns: 'WAN Connection', 'Prefix Source', 'Prefix', 'Preferred/Valid Lifetime', 'Prefix Delegation', and 'Modify'. The table body contains the text 'There is no data.'

Figure 3-11: Prefix Management

3.3.2.5 Port Service(Ipv6)

This page is used to configure DHCPv6 and RA function of LAN port.

The screenshot shows the 'Port Service(IPv6)' page. The sidebar menu is the same as in Figure 3-11, but 'Port Service(IPv6)' is highlighted. The main content area has the same top navigation bar. Below it, there is a warning icon and a message: 'The IPv6 address assign service will be opened on the port which is checked. The Router Advertisement will be opened on the port which is checked.' Below this message, there is a section for 'LAN1' with checkboxes for 'DHCPv6' and 'RA', both of which are checked. On the right side, there are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-12: Port Service(IPv6)

3.3.3 PON Settings

3.3.3.1 LOID

This page allows user to configure LOID and password which are used for registering to OLT.

The screenshot shows the 'LOID' settings page. The left sidebar has a menu with 'WAN', 'LAN', 'PON', 'LOID' (selected), 'SN', 'PON MODE', and 'Routing(IPv4)'. The main content area has a header with tabs: 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. Below the header, there are input fields for 'LOID' (123456789) and 'Password' (123456). To the right of these fields are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-13: LOID settings

3.3.3.2 SN

This page allows user to configure GPON SN and password which are used for registering to OLT.

The screenshot shows the 'SN' settings page. The left sidebar has a menu with 'WAN', 'LAN', 'PON', 'LOID', 'SN' (selected), 'PON MODE', and 'Routing(IPv4)'. The main content area has a header with tabs: 'Status', 'Network', 'Security', 'Application', 'Administration', and 'Help'. Below the header, there is a warning message: 'Configure password take effect after rebooting the device.' To the right of this message are buttons for 'Portugu', 'Help', and 'Logout'. Below the warning, there are input fields for 'SN' (MONU00b86dc1) and 'Password' (123456). At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-14: GPON SN Settings

3.3.3.3 PON Mode

This page allows user to configure PON mode when connected to corresponding system.

AUTO: ONU will detect PON mode and shift to proper PON mode.

GPON: ONU will work on GPON mode.

EPON: ONU will work on EPON mode.

The screenshot shows the 'PON MODE' configuration page. At the top is a navigation bar with tabs: Status, Network, Security, Application, Administration, and Help. On the left is a sidebar menu with options: WAN, LAN, PON, LOID, SN, PON MODE (highlighted), and Routing(IPv4). The main content area features a warning icon and text: 'Configure PON MODE take effect after rebooting the device.' Below this is a 'PON MODE' dropdown menu set to 'AUTO'. On the right side, there are three buttons: 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-15: PON Mode

3.3.4 Routing(Ipv4)

3.3.4.1 Default Gateway

This page allows user to configure default gateway of ONU. Just need to specify the WAN connection that connected to the gateway.

The screenshot shows the 'Default Gateway' configuration page. It has the same navigation bar and sidebar menu as Figure 3-15. In the sidebar, 'Default Gateway' is highlighted under the 'Routing(IPv4)' section. The main content area has a 'WAN Connection' dropdown menu set to 'test'. On the right side, there are three buttons: 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-16: Default Gateway

3.3.4.2 Static Routing

This page allows user to specify a WAN connection as the Route Interface, and then configure destination IP, mask and gateway.

Static Routing configuration page. The interface includes a sidebar with navigation options: WAN, LAN, PON, Routing(IPv4), Default Gateway, Static Routing (selected), and Routing Table. The main content area contains a form for adding a static route with fields for WAN Connection (test), Network Address, Subnet Mask, and Gateway, followed by an Add button. To the right are buttons for Portuguese, Help, and Logout. Below the form is a table with columns: Network Address, Subnet Mask, Gateway, WAN Connection, Status, Modify, and Delete. The table is currently empty, with a message "There is no data, please add one first." displayed below the headers.

Figure 3-17: Static Routing

Parameter	Illustration
WAN Connection	Select WAN connection as static routing interface.
Network Address	Destination network address.
Subnet Mask	The Mask of destination network address.
Gateway	Gateway IP address of static routing.

3.3.4.3 Routing Table

This page displays IP routing rules.

Routing Table page. The interface includes a sidebar with navigation options: WAN, LAN, PON, Routing(IPv4), Default Gateway, Static Routing, and Routing Table (selected). The main content area displays a table with columns: Network Address, Subnet Mask, Gateway, and Interface. The table contains three rows of data. To the right of the table are buttons for Portuguese, Help, and Logout. At the bottom right of the page is a Refresh button.

Network Address	Subnet Mask	Gateway	Interface
0.0.0.0	0.0.0.0	192.168.6.1	test
192.168.1.0	255.255.255.0		LAN
192.168.6.0	255.255.255.0		test

Figure 3-18: Routing Table

3.4 Security

3.4.1 Firewall

This page allows user to set anti-hacking protection and the level of the firewall (IPv4). User also can set custom firewall rules.

The screenshot displays the Firewall configuration interface. The top navigation bar includes tabs for Status, Network, Security (selected), Application, Administration, and Help. On the left, a sidebar menu lists Firewall, Service Control, and MAC Filter. The main content area features a 'Firewall' tab. Under this tab, there is a checkbox for 'Enable Anti-Hacking Protection' which is checked. Below it, the 'Firewall Level' is set to 'Custom >>', with other options being 'Off', 'Low', and 'High'. To the right of these settings are buttons for 'Portuguese', 'Help', and 'Logout'. At the bottom right of the page, there are 'Submit' and 'Cancel' buttons.

Figure 3-19: Firewall Level

Parameter	Illustration
Enable Anti-Hacking Protection	Anti-Hacking Protection switch.
Firewall Level	<p>Low: Allow all inner or outer hosts to access.</p> <p>Middle: Allow inner or outer hosts which are limited by the rules that have been created to access.</p> <p>High: Forbid ICMP Input, Forbid Port Scan, Denial of Service protections.</p>

IP Version: IPv4

Name:

Enable: ☐

Order: (0 ~ 31)

Protocol: TCP

State: ANY

Source IP Address:

Source IP Mask:

Start Source Port:

End Source Port:

Destination IP Address:

Destination IP Mask:

Start Destination Port:

End Destination Port:

The direction of data flow: WAN->CPE

Mode: Discard

Add

Name	Protocol	Source IP Address / Mask	Source Port	Order	The direction of data flow	Modify	Delete
Enable	State	Destination IP Address / Mask	Destination Port	Mode			

There is no data, please add one first.

Back

Figure 3-20: Custom Firewall Rule

Parameter	Illustration
IP Version	Select IPv4 or IPv6.
Name	Firewall rule name.
Enable	Enable or disable the rule.
Order	Order of the rule.
Protocol	Select protocol which the rule used for. There are only several protocols can be selected.
State	Select data traffic state. Suggest using ANY.
Source IP Address	Source IP address of traffic that matches the rule.
Source IP Mask	Mask of source IP address.
Start Source Port	Start source TCP or UDP port. The protocol must be TCP or UDP.
End Source Port	End source TCP or UDP port. The protocol must be TCP or UDP.
Destination IP Address	Destination IP address of traffic that matches the rule.
Destination IP Mask	Mask of destination IP address.
Start Destination Port	Start destination TCP or UDP port. The protocol must be TCP or UDP.
End Destination Port	End destination TCP or UDP port. The protocol must be TCP or UDP.
The direction of data flow	Direction of data flow that matches the rule. In the option, CPE indicates CPU of ONU.
Mode	Data forward mode of the rule, including discard and permit.

3.4.2 Service Control

This page allows user to set IP filter rules.

IP Version: IPv4

Enable: ☐

Ingress:

Start Source IP Address:

End Source IP Address:

Mode: Discard

Service List: ☐ HTTP ☐ TELNET

Add

Enable	Ingress	Start Source IP Address	End Source IP Address	Mode	Service List	Modify	Delete
<input checked="" type="checkbox"/>	LAN			Discard	TELNET		

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

Figure 3-21: Service Control

Parameter	Illustration
IP Version	Select IPv4 or IPv6.
Enable	Enable or disable IP filter rule.
Ingress	Ingress interface of data traffic.
Start Source IP Address	Start source IP address of data traffic.
End Source IP Address	End source IP address of data traffic.
Mode	Data transfer mode, including discard or permit.
Service List	Service list for IP filter.

User also can configure remote access port for different service, such as http and telnet.

The screenshot shows the 'Security' tab in the ONU web interface. On the left, a sidebar contains 'Firewall', 'Service Control', and 'MAC Filter'. The 'Service Control' section is active, showing a table of services and their ports. Above the table, there are input fields for 'Service' and 'Port' (with a range of 1 to 65535). On the right, there are buttons for 'Portuguese', 'Help', and 'Logout'. At the bottom right, there is a 'Back' button.

Service	Port	Modify
HTTP	80	
FTP	21	
SSH	22	
TELNET	23	
HTTPS	443	

Figure 3-22: Remote Access Port

3.4.3 MAC Filter

This page allows user to set the relevant parameters of the MAC filter function. The table will display the MAC Filter rules after setting completed.

The screenshot shows the 'MAC Filter' section in the ONU web interface. It includes a sidebar with 'Firewall', 'Service Control', and 'MAC Filter'. The 'MAC Filter' section is active, showing configuration options: 'Enable' (checkbox), 'Mode' (dropdown menu set to 'Discard'), 'Type' (dropdown menu set to 'Bridge'), and 'Protocol' (dropdown menu set to 'IP'). Below these are input fields for 'Source MAC Address' and 'Destination MAC Address', each with six boxes for hexadecimal digits. An 'Add' button is present. On the right, there are buttons for 'Portuguese', 'Help', and 'Logout'. At the bottom, there is a table with columns: 'Type', 'Protocol', 'Source MAC Address', 'Destination MAC Address', 'Modify', and 'Delete'. The table is currently empty, with a message 'There is no data, please add one first.' below it.

1. If you choose the Permit mode, please add the MAC address of your PC first, otherwise internet access is not allowed.
 2. Enable switching or Mode switching will take effect immediately.

Type	Protocol	Source MAC Address	Destination MAC Address	Modify	Delete
There is no data, please add one first.					

Figure 3-23: MAC Filter

Parameter	Illustration
Enable	Enable or disable the rule.
Mode	Data transfer mode, including discard or permit.
Type	Select ONU working mode that the rule takes effect.
Protocol	Select protocol of data traffic.

Source MAC Address	Source MAC address of data traffic.
Destination MAC Address	Destination MAC address of data traffic.

3.5 Application

3.5.1 Multicast

3.5.1.1 IGMP Mode

This page allows user to enable or disable IGMP snooping.

Figure 3-24: IGMP Mode

3.5.1.2 Basic Configuration

This page allows user to configure IGMP basic configuration, including multicast aging time and non-fast leave.

Figure 3-25: IGMP Basic Configuration**3.5.1.3 VLAN Configuration**

This page allows user to configure multicast VLAN for the port. If WAN VLAN is not the same as LAN VLAN, it means multicast VLAN will be translated.

Status | Network | Security | Application | Administration | Help

MultiCast

- IGMP Mode
- Basic Configuration
- VLAN Configuration**
- Tag Configuration
- Maximum Address Configuration

BPDU

DNS Service

Port Forwarding

VLAN Configuration only takes effect in IGMP Snooping and IGMP Proxy modes.

Port:

WAN VLAN: (1-4094)

LAN VLAN: (1-4094)

Port	WAN VLAN	LAN VLAN	Delete
LAN1	3000	3000	

Figure 3-26: Multicast VLAN**3.5.1.4 Tag Configuration**

This page allows user to configure multicast VLAN untag mode.

Status | Network | Security | Application | Administration | Help

MultiCast

- IGMP Mode
- Basic Configuration
- VLAN Configuration
- Tag Configuration**
- Maximum Address Configuration

BPDU

DNS Service

Port Forwarding

Tag Configuration takes effect in IGMP Snooping modes.

Port	Untag
LAN1	<input type="checkbox"/>

Figure 3-27: Tag Configuration**3.5.1.5 Maximum Address Configuration**

This page allows user to configure maximum multicast address.

The screenshot shows the 'Maximum Address Configuration' page. The left sidebar has a menu with 'Maximum Address Configuration' selected. The main area displays a warning icon and text: 'The Maximum Number of Addresses is 1024.' Below this is a table with two columns: 'Port' and 'Maximum Number of Addresses'. The table has one row for 'LAN1' with the value '1024' in the second column. On the right side, there are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Port	Maximum Number of Addresses
LAN1	1024

Figure 3-28: Maximum Address Configuration

3.5.2 BPDU

This page allows user to enable or disable RSTP BPDU(Bridge Protocol Data Unit) forwarding.

The screenshot shows the 'BPDU Forwarding' page. The left sidebar has a menu with 'BPDU' selected. The main area displays the text 'Enable BPDU Forwarding' followed by a checked checkbox. On the right side, there are buttons for 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-29: BPDU Forwarding

3.5.3 DNS Service

3.5.3.1 Domain Name

This page allows user to configure domain name of ONU. Users can access ONU webpage by this domain name.

The screenshot shows a web interface with a top navigation bar containing links: Status, Network, Security, Application (highlighted), Administration, and Help. On the left, a sidebar menu lists: MultiCast, BPDU, DNS Service (expanded), Domain Name (highlighted), DNS, and Port Forwarding. The main content area is titled 'Domain Name' and features a text input field. To the right of the input field are three buttons: 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-30: Domain Name

3.5.3.2 DNS

This page allows user to configure DNS server. DNS request will be sent to these DNS servers.

The screenshot shows a web interface similar to Figure 3-30. The top navigation bar and sidebar menu are identical. In the sidebar, 'DNS' is highlighted under 'DNS Service'. The main content area is titled 'DNS' and contains four text input fields labeled: 'IPv4 DNSServer1', 'IPv4 DNSServer2', 'IPv6 DNSServer1', and 'IPv6 DNSServer2'. To the right of these fields are three buttons: 'Portugu', 'Help', and 'Logout'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-31: DNS

3.5.3 Port Forwarding

This page allows user to configure port forwarding.

MultiCast

BPDU

DNS Service

Port Forwarding

Port Forwarding

Enable ☐

Name

Protocol TCP

WAN Host Start IP Address

WAN Host End IP Address

WAN Connection

WAN Start Port (1 ~ 65535)

WAN End Port (1 ~ 65535)

LAN Host IP Address

LAN Host Start Port (1 ~ 65535)

LAN Host End Port (1 ~ 65535)

Add

Enable	Name	WAN Host Start IP Address	WAN Start Port	LAN Host Start Port	WAN Connection	Modify	Delete
	Protocol	WAN Host End IP Address	WAN End Port	LAN Host End Port	LAN Host Address		

There is no data, please add one first.

Figure 3-32: Port Forwarding

Parameter	Illustration
Enable	Enable or disable port forwarding rule.
Name	Name of the port forwarding rule.
Protocol	Protocol of the port forwarding rule, including TCP and UDP.
WAN Host Start/End IP Address	Specify WAN host IP range for the port forwarding rule. Only in the range, the host of WAN side can work with the rule.
WAN Connection	Select WAN connection.
WAN Start/End Port	TCP or UDP port range of WAN side host.
LAN Host IP Address	Specify host IP address of LAN side.
LAN Host Start/End Port	TCP or UDP port range of LAN side host.

3.6 Administration

3.6.1 User Management

This page allows user to change password of current login username.

The screenshot shows the 'User Management' page. The top navigation bar includes 'Status', 'Network', 'Security', 'Application', 'Administration' (selected), and 'Help'. On the left, a sidebar lists 'User Management' (selected), 'Login Timeout', 'System Management', 'Diagnosis', 'Loopback Detection', and 'Led Control'. The main content area shows 'User Privilege: Administrator' and a language dropdown set to 'Portugu'. Below this are input fields for 'Username' (containing 'admin'), 'Old Password', 'New Password', and 'Confirmed Password'. To the right of these fields are 'Help' and 'Logout' buttons. A note specifies password requirements: at least 6 characters, including numbers, letters, and special characters, with a maximum length of 16 characters and no spaces. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-33: User Management

3.6.2 Login Timeout

This page allows user to set webpage login timeout. If don't operate the webpage for the time out, the account will logout automatically.

The screenshot shows the 'Login Timeout' page. The top navigation bar and sidebar are identical to Figure 3-33, with 'Login Timeout' selected in the sidebar. The main content area features an information icon and two notes: '1.Any value between 1 minute and 30 minutes is allowed.' and '2.The changes of Timeout take effect after re-login.' Below these is a 'Timeout' field with the value '5' and the unit 'minute(s)'. To the right are 'Portugu', 'Help', and 'Logout' buttons. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 3-34: Login Timeout

3.6.3 System Management

3.6.3.1 System Management

This page allows user to reboot the device, restore factory default and restore backup configuration. The process of reboot will take several minutes.

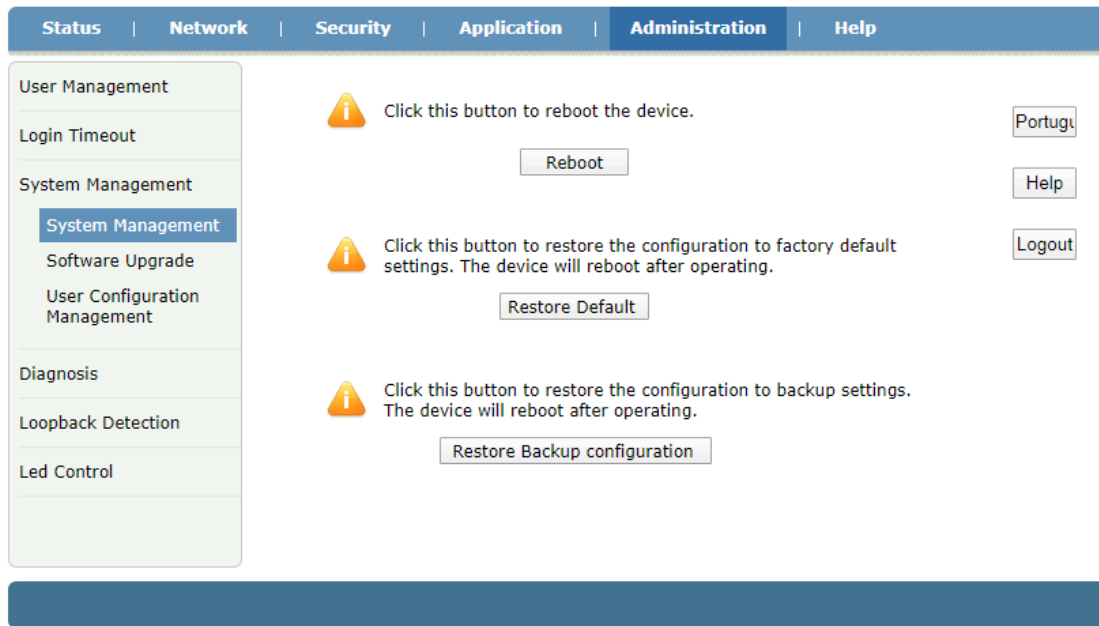


Figure 3-35: System Management

3.6.3.2 Software Upgrade

This page allows user to update software of the device. Click the “Choose File” button to select the software and then click the “Update” button to update.

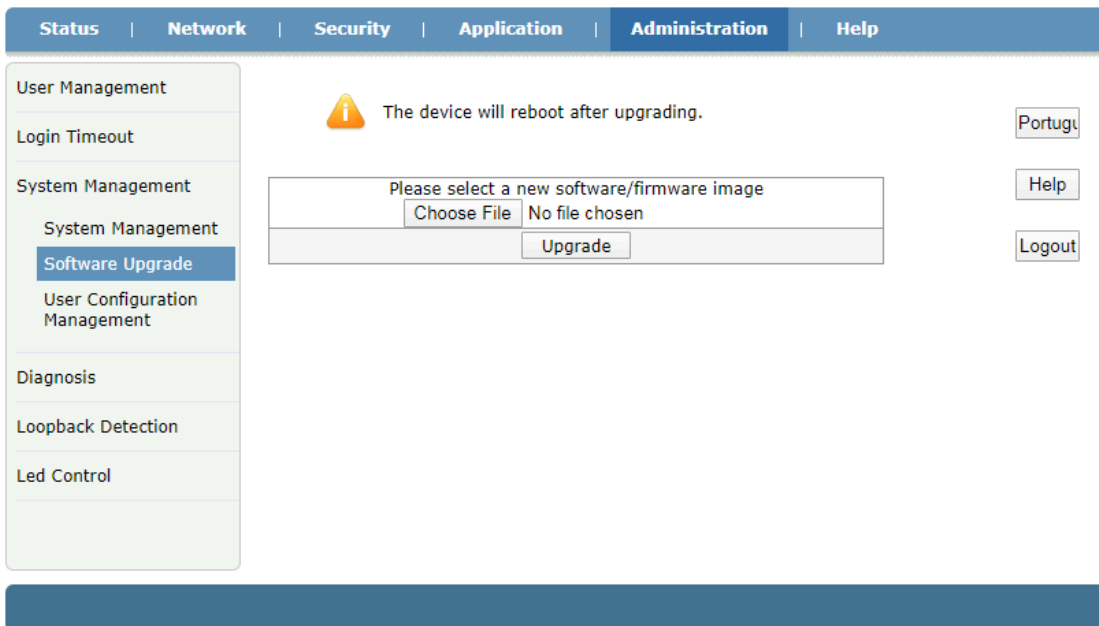


Figure 3-36: Software Upgrade

3.6.3.3 Configuration Management

This page allows user to backup and restore configuration.

Figure 3-37: Configuration Management

3.6.4 Diagnosis

3.6.4.1 PING Diagnosis

This page shows about the ping test. You can diagnose connection status between ONU and other devices.

Figure 3-38: PING Diagnosis

Parameter	Illustration
IP Address or Host Name	Input the destination IP you want to ping.
Egress	Select the egress interface you want to ping.

3.6.4.2 Mirror Configuration

This page allows user to set port mirror for troubleshooting. After configured port mirror, the

traffic of WAN connection will be copied and sent to LAN port.

Cannot configure the same rules, and a source port cannot correspond to multiple destination ports.

Source Destination

Add

Source	Destination	Delete
There is no data, please add one first.		

Portuguese Help Logout

Figure 3-39: Port Mirror

Parameter	Illustration
Source	Select WAN connection as mirrored interface.
Destination	The LAN port is mirroring interface.

3.6.5 Loopback Detection

3.6.5.1 Basic Configuration

This page allows user to set basic parameters of loopback detection.

Destination MAC: ☒ Broadcast Address ☐ BPDU Address

Ethernet Type (hex 0000 - ffff)

Send Interval (100 - 1000) ms

Port Closing Time (60 - 300) sec

Loopback Recovery Time (5 - 300) sec

Portuguese Help Logout

Submit Cancel

Figure 3-40: Basic Configuration

Parameter	Illustration
Destination MAC	Select the destination MAC of loopback packet.

Ethernet Type	Set the Ethernet type of loopback packet.
Send Interval	Set sending Interval time of loopback packet.
Port Closing Time	Set how much time the port will be closed once detected loopback.
Loopback Recovery Time	Set loopback recovery time.

3.6.5.2 Enable Configuration

This page allows user to enable or disable LAN port loopback feature.

Port	Loopback Enable	Alarm Enable	Portdislooped Enable
LAN1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Portug
Help
Logout

Submit Cancel

Figure 3-41: Enable Configuration

Parameter	Illustration
Loopback Enable	Enable or disable LAN port loopback detection.
Alarm Enable	Enable or disable LAN port loopback alarm.
Portdislooped Enable	Enable or disable LAN port automatic recovery.

3.6.5.3 VLAN Configuration

This page allows user to set VLAN of loopback detection packet. After added VLAN, ONU will send out loopback detection packets with the VLAN.

Port

VLAN (1 - 4094)

Port	VLAN	Modify	Delete
There is no data, please add one first.			

Figure 3-42: VLAN Configuration

3.6.6 LED Control

This page allows user to turn off or turn on the LED indicators.

Turn Off Leds ☐

Figure 3-43: LED Control

3.8 Help

The Help information of ONU displays instruction and prompt of each web UI.

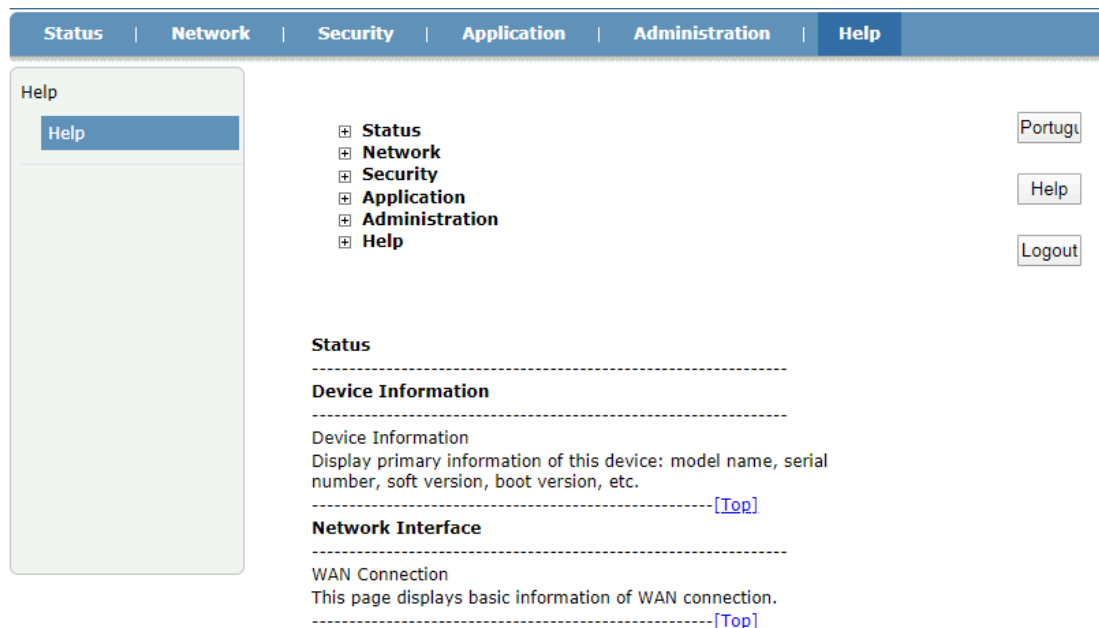


Figure 3-44: Help information

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