



EPON OLT FD1216S

EPON Optical Line Terminal Equipment

Configuration Guide

Version: V1.1

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About This Manual

This manual is applicable to C-Data FD1216S EPON OLT products , The contents of this document include EMS software installation and operation guidelines. Users should learn this document first when beginning to operate EPON OLT device.



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Overview

object of reading	Product	Software	Version
C-DATA internal staff FTTX operation and maintenance engineer C-DATA Customer	FD1216S	FD1216S:	V1.2.1
Compiling Department	C-DATA Technical marketing department	Document version	V1.1

Command Conventions

The command conventions that may be found in this document are defined as follows.

Convention	Description
Boldface	The keywords of a command line are in boldface .
Italic	Command arguments are in <i>italics</i> .
[]	Items (keywords or arguments) in brackets [] are optional.
(x y)	Optional items are grouped in braces and separated by vertical
	bars. One item is selected.
[x y]	Optional items are grouped in brackets and separated by
	vertical bars. One item is selected or no item is selected.
<x-y></x-y>	One number from x to y can be selected
\$	A line starting with the \$ sign is comments.

Keyword Operation Conventions

Convention	Description
String with < >	It is key name. For example, <enter>, <tab>, <backspace>, <a>,</backspace></tab></enter>
	etc, it means to press the key button
<key +="" 1="" 2="" key=""></key>	It means to press the key at same time. For example <
	Ctrl+Alt+A> means to press "Ctrl", "Alt", "A" button together.
<key ,="" 1="" 2="" key=""></key>	It means to press the first button, then release, and press the
	second button. For example < Alt, F> means to press "Alt" first,
	then release "Alt" button, and then press "A" button.



Frequently-used command

Command	Description
show vlan all	Show OLT vlan summary
show version	Show OLT version information
show device	Show OLT mac, sn, model
show interface mgmt	Show Out-band management ip
show current-config	Show OLT running and current
	configuration.
show saved-config	Show OLT startup and saved
	configuration.
show ont info <port id=""> all</port>	Show PON port ONT information
show ont optical-info <port id=""> <ont id=""></ont></port>	Show ONT optical information
ont sla <port id=""> <ont id=""> upstream assure <1-1000000> fix</ont></port>	Configure ONT upstream speed
<1-1000000> max <512-1000000>	limit
ont sla <port id=""> <ont id=""> downstream max <64-1000000></ont></port>	Configure ONT downstream
	speed limit

Symbol Conventions

The symbols that may be found in this document are defined as follows.:



This warning symbol means danger. You are in a situation that could cause bodily injury

or broke the equipment. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents by making quick guide based on this guide.



Indicates a hazard with a high level of risk, which if not avoided, it will result in death or

serious injury on human body.



Provides additional information to emphasize or supplement important points of the

main text.

Terms Conventions

OLT: It is the FD1216S Optical Line Terminal, included the switch and uplink port. **PON:** It stand for PON protocol process module and PON port to connect with ONT side.

Prompt

CLI is case – sensitive.



1. Overview of the System

This section describes each of the devices in our EPON environment. The EPON FTTx system is an all-optical, fiber-to-the-x system that delivers quadruple-play voice, data, video and wireless services to residential and business subscribers.

Our EPON FTTx system consists of the following network components.

■ Optical Line Termination - the optical line termination unit that provides Network and EPON interface termination, L2 aggregation and control functions.

Product solutions	Model
TK solution	FD1002S
Cortina solution	FD1108S
	FD1104Y
	FD1104S
	FD1216S

■ Optical Network Terminals - the optical network terminal located at the subscriber premises. The model numbers are:

Product solutions	type	Model	Description
ZTE solution	SFU (Bridge device)	FD111HZ	1GE

Cortina solution	SFU (Bridge device)	FD104HC	4FE
		FD304HC	4FE+CATV
	SFU (Bridge) + router	FD304HW	4FE+CATV+WIFI
		FD104HW	4FE+WIFI

Broadcom solution HGU (Gatewa device)		FD212H	1GE+1FE+1POTS
	HGU (Gateway	Gateway rice) FD214GW	4GE+2POTS+WIFI
	uevice)	FD404GW	4GE+2POTS+WIFI+CATV

	SFU (Bridge device)	FD600-104F-HR	4FE
RTK solution	HGU(Gateway device)	FD600-104FW-HR	4FE+WIFI

- Optical passives
- PLC passive splitters
- FWDM for 1550nm video overlay EPON



2. System Access

2.1 Overview

The CLI of OLT can be configured and managed via local terminal connection or a remote session using Telnet. The OLT supports three methods to gain access for management and configuration tasks:

1. Local access to the OLT through the RS232 console port on front panel, see below picture.

2. Dedicated local Telnet connection to the OLT by using the FE port on OLT front panel (outband interface).

3. Remote access over the provider's Ethernet/IP network by using Telnet. Therefore, an inband management channel, i.e., a specific management VLAN has to be configured.

2.2 Console Access

OLT provides console interface (marked as "CONSOLE" RJ45 type port) .

RJ-45 to DB-9 Console Cable

Console access requires:

- Console cable: RJ-45-to-DB-9 console cable
- Terminal emulation software: HyperTerminal

The cable is connected between the serial port of the host and the console port on the device. Most computers and notebooks no longer include built-in serial ports. If the host does not have a serial port, the USB port can be used to establish a console connection. A special USB-to-RS-232 compatible serial port adapter is required when using the USB port.









RJ-45 to DB-9 Console Cable

USB to RS-232 compatible serial port adapter

Run a VT terminal emulation software (e.g. HyperTerminal) with the attributes

Band Rate: 9600 Data Bit: 8 Parity Check: NO Stop Bit: 1 Flow Control: NO

When the OLT is starting up, the terminal program displays automatically the login prompt "OLT>".

Access the OLT as follows:

1. After starting the terminal session, the login prompt is displayed:

OLT>

2. Enter the login ID root (default) and the password admin (default) to move into

the User mode :

OLT>username: root Password: (entered characters are hidden) OLT>

3. To configure and manage the system, enter into the enable mode:

OLT>enable

OLT#

2.3 Telnet Access

There are two way for TELNET.

Out-band Interface Access(From OLT MGMT port) : You should configure your PC IP to 192.168.1.X (Except 192.168.1.100), connect to the MGMT port of OLT, login the OLT with the default OLT management IP (Default IP : 192.168.1.100). Default login ID is root and the password is admin.

Use command as follow can modify the Out-band management IP.

OLT> enable OLT# config OLT(config)# interface mgmt OLT(config-interface-mgmt)# ip address 192.168.5.100 24



OLT(config-interface-mgmt)# exit

In-band Interface Access(From OLT Ge uplink port): You should login via console, and create a dedicated VLAN for inband management, assigned an IP address to this interface, add the uplink port (The manage PC connect via the port) to the VLAN.

OLT> enable OLT# config OLT(config)# vlan 100 OLT(config)# interface vlanif 100 OLT(interface-vlanif-100)# ip address 192.168.2.100 255.255.255.0 OLT(interface-vlanif-100)# exit OLT(config)# interface ge OLT(config)# interface ge OLT(interface-ge)# vlan access 5 100 OLT(interface-ge)# exit

3. Upgrade OLT Version

For OLT version upgrade, you need a FTP server for FW download. Connects PC with the OLT console port, the FTP server connects with MGMT port. FTP default login name and password is admin/admin, FTP server IP set to 192.168.1.222.

Checks the FTP server connected well by PING FTP server through the OLT .



FTP server configuration:

Security -> User/Rights Security Dialog -> User Name (set to admin) -> Change Password (set to admin) -> Home (choice the file folder of the upgrade software)



Edit View Logg	ing Messages Security Help
	User / Rights Security Dialog
	Home F:\ Browse Help Rights >>

Use the command "**load packetfile ftp** server-ip-address user-name user-password filename" in Config Mode to upgrade the OLT as below.

OLT(config)# load packetfile ftp 192.168.1.222 admin admin FD1216S_FW_V1.2.1_170122_1 710.img

Broadcast message from root:

Upgrade is in process.

File [FD1216S_FW_V1.2.1_170122_1710.img] download OK

File [FD1216S_FW_V1.2.1_170122_1710.img] upgrade OK

OLT(config)# reboot

Please check whether data has saved, the unsaved data will lose if reboot syst em. Are you sure to reboot system? (y/n)[n]:y

4. Application Example

This section describes basic concepts related to the fiber to the home (FTTH) solution from the user side to the network side on FTTH networking using PON transmission.

We will give two example of the configuration. One is Bridge ONT configuration, another is the Gateway ONT configuration.





4.1 Data Plan

The subsequent examples are configured based on the following data plan.

Data Plan		
Service Classification	Data	
	VLAN 100: Internet Service	
VLAN	VLAN 200: IPTV Service	
	VLAN 300: VOIP Service	
	Ge5: VLAN 100. Access mode	
OLT Port Setting	Ge6: VLAN 200. Access mode	
	Ge7: VLAN 300. Access mode	
	PON1: VLAN 100, VLAN 200, VLAN 300. Trunk mode	
Bridge ONT Part Setting	LAN 1: VLAN 100	
Bridge ONT Port Setting	LAN 2: VLAN 200	
Gateway ONT Port Setting	LAN1: VLAN 100	
	LAN2: VLAN 200	
	POTS: VLAN 300	

Configuration Process





4.2 Configuring OLT

Run the **vlan** command to create a vlan. EPON OLT Configuration include the create vlan. Configure GE vlan and Configure PON vlan.

- Create VLAN: Virtual Local Area Network. Uesed to distinguish different service types.
- Configure GE vlan: GE port vlan mode include access, hybrid, trunk.
- Configure PON vlan: PON port vlan mode include access, hybrid, trunk.

Create vlan

Run the **show vlan all** command to query existing vlan in the system. If the existing vlan in the system do not meet the requirements, run the **vlan** command to create a vlan.

OLT(config)# vlan 100

OLT(config)# vlan 200

OLT(config)# vlan 300

Configure GE vlan

OLT(config)# interface ge

OLT(config-interface-ge)# vlan access 5 100

OLT(config-interface-ge)# vlan access 6 200

OLT(config-interface-ge)# vlan access 7 300

OLT(config-interface-ge)# exit



Configure PON vlan

OLT(config)# interface epon

OLT(config-interface-epon)# vlan mode 1 trunk

OLT(config-interface-epon)# vlan trunk 1 100,200,300

OLT(config-interface-epon)# exit

D NOTE:

The OLT vian handle process as follows:

Man	Actions(in	the inbound direction)	Actions(in the	
mode	Untagged	Tagged frame	outbound direction)	
Access	Tag the frame with the native vlan tag.	 Receive the frame if its vlan id is the same as the native vlan id. Drop the frame if its vlan id is different from the native vlan id. 	Remove the native vlan tag and send the frame.	
Trunk	Tag the frame with native vlan tag.	 Receive the frame if its vlan is carried on the port Drop the frame if its vlan 	 Send the frame and removing the tag if the frame is the same as native vlan id. Send the frame without removing the tag if its vlan is carried on the port but is different from the native vlan. 	
Hybrid		prot.	Send the frame if its vlan is carried on the port. The frame is sent with the vlan tag removed or intact depending on your configuration with the vlan hybrid command.	

Configure IGMP and Multicast vlan

OLT(config)# igmp mode proxy

OLT(config)# multicast-vlan 200

OLT(config-multicast-vlan-200)# igmp program add program-index 1 ip 224.3.3.3

OLT(config-multicast-vlan-200)# igmp router-port ge 6

OLT(config-multicast-vlan-200)# exit



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igmp program add program-index command is used to create multicast program table. Only the program table in the multicast vlan, the user can watch the program traffic in the multicast. Create multicast program table can use **igmp program add program-index <1-2000> batch** command to add program batch or use **igmp program add program-index <1-2000> ip** command to add program single.

4.3 Configuring Bridge ONT Internet Service

Only when the ONT register to the OLT success , you can configure the service of the ONT. So make sure ONT is registered to the OLT.

OLT would register ONT automatically in default.

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create internet vlan
- The OLT configure GE port vlan for Internet
- The OLT configure PON port vlan for Internet
- The ONT is registered

Configure ONT port vlan

OLT(config)# interface epon OLT(config-interface-epon)# ont port vlan 1 1 eth 1 100 OLT(config-interface-epon)# ont port native-vlan 1 1 eth 1 vlan 100 OLT(config-interface-epon)# exit

4.4 Configuring Bridge ONT IPTV Service

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create IPTV vlan
- The OLT configure GE port vlan for IPTV
- The OLT configure PON port vlan for IPTV
- The OLT configure IGMP and Multicast vlan
- The ONT is registered

Configure ONT port vlan

OLT(config)# interface epon

OLT(config-interface-epon)# ont port multicast-vlan 1 1 eth 2 200

OLT(config-interface-epon)# exit

----End

4.5 Configuring Gateway ONT Internet Service – RTK chip scheme ONT

This topic describes how to configure Internet access service, voice service, BTV service and VoD



service when gateway ONT is used to build an FTTH network.

The ONT integrating an IAD provides Internet, VoIP, and IPTV services to users. The Gateway ONT facilitates interconnection of home devices by providing Layer 3 services, such as Point-to-Point Protocol over Ethernet (PPPoE)/DHCP dial-up, network address translation (NAT), and Internet Group Management Protocol (IGMP) snooping. This scenario provides fine-grained management channels and service control, and mainly applies to Layer 3 networking.

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create internet vlan
- The OLT configure GE port vlan for Internet
- The OLT configure PON port vlan for Internet
- The ONT is registered

1. Create Route WAN and bind LAN 1 in ONT Web

Click Internet \rightarrow Internet Config \rightarrow WAN Config

Status	Internet	Security	Applica
nternet Config Por	t Binding DHCP Server	r WLAN Config	Remote Mgmt Qo
WAN Config			
WAN Connection name	Add WAN connection 🗸	1	
Mode :	Route	1	
Connection Mode::	Ipv4/Ipv6	1	
DHCP	Obtain an IP address automatically	7	
OStatic	Use Static IP address		
O PPPoE	PPP over Ethernet (PPPoE)	
NAT:	~		
Enable Vlan:			
Vlan ID:	100		
802.1p:	(NULL)	•	
MTU:	1500		
Request DNS:	• Enable		
	ODisable		
Primary DNS:			
Secondary DNS:			
Service Mode:	INTERNET 🗸	·	
Bind port:			
Port_1	Port_2		
Port_3	Port_4		
🗹 wireless (SSID)			



Mode select to **Route**. Check **Enable VLAN** and Vlan ID input **100**. Service Mode select to **INTERNET**. Bind port check **Port_1** and **wireless(SSID)**.

Internet service document take DHCP mode as an example. The service type please selected according to the user's actual use. ONT detail usage please refer to ONT user manual.

2. Check ONT Status

Click Status→Internet Info

WAN Info						
	Interface	VLAN ID	Protocol	IGMP	Status	IP address
	1_TR069_R_VID_46	46	IPoE	Enable	down	
2 INTERNET R VID 100		100	IPoE	Enable	up	192.168.5.129
Network Informs Default Gatewa	ation y 192. 168. 5. 254					
Network Informs Default Gatewa Subnet Mask	y 192. 168. 5. 254 255. 255. 255. 0				I	
Network Informs Default Gatewa Subnet Mask Primary DNS	ation y 192. 168. 5. 254 255. 255. 255. 0 192. 168. 5. 254			1		

4.6 Configuring Gateway ONT IPTV Service – RTK chip scheme ONT

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create IPTV vlan
- The OLT configure GE port vlan for IPTV
- The OLT configure PON port vlan for IPTV
- The OLT configure IGMP and Multicast vlan
- The ONT is registered

1. Create Bridge WAN and bind LAN 2 in ONT Web

Click Internet \rightarrow Internet Config \rightarrow WAN Config

Status	Inte	ernet	Securi	ty	Applica	ation	Management	Diagnosi
nternet Config	Port Binding	DHCP Server	WLAN Config	Remote Mgmt	QoS	Time Config	Routing	
WAN Config								
WAN Connection nam	Add WAN o	connection 🗸						
Mode :	Bridge	~						
Connection Mode::	Ipv4/Ipv6	3 🗸						
Enable Vlan:	\checkmark							
Vlan ID:	200							
802.1p:	(NULL)	~						
Service Mode:	Other	~						
Bind port:								
Port_1	Port_2							
Port_3	Port_4							
wireless (SSID)								
NOTE: Can and bind		Lifferent Will a				ALEE TAN		
previous configura	tions on this port		infection. If the	same port has been	binded to	different way co	Minection, the fast config	uration will fiush yo
When the Bridge so	de is set to Other	the PC on the	nort does not den	amically obtain th	IP addres	e through the e	stavey When the service m	ode is Other please
careful not to bin	d all LAN ports fo	r such a situati	on!	uniouni, obtain th		s chrough the g	interior, and the service i	out is ounce, presses
[
Apply	delete							
NOTE								



Mode select to Bridge. Check Enable Vlan and Vlan ID input 200. Service Mode select to Other. Bind port check Port_2.

2. Configure IGMP

Click Application \rightarrow IGMP Config \rightarrow IGMP Snooping. Enable IGMP Snooping.

Application	Status		Internet	Security	Application
	DDNS Config	Advanced NAT	UPNP Config	IGMP Config MLD Config	
IGMP Snooping	IGMP Snooping This page allows you t	to config IGMP Sn	ooping function.		
IGMP Proxy	IGMP Snooping: Save/Apply	○ Disable	● Enable		

Click Application \rightarrow Multicast Vlan \rightarrow 3_Other_B_VID_200 \rightarrow Modify. Input 200 in VLAN multicast(blank said set).

							Gateway Name: Home
Application		Status	Internet	Security	Application	Management	Diagnosis
		DDNS Config	Advanced NAT UPNP Config	IGMP Config MLD Con	fig Multicast Vlan		
IPTV	VLA	N multicast (blank sai	d set)				
			Interface		Multicast VLAN	Мо	dify
			1_TR069_R_VID_46				/
			2_INTERNET_R_VID_100			1	1
			3_Other_B_VID_200		200		/

3. Check ONT Status

Click Status→Internet Info

Status	Status Internet		Application		Management	Diagnosis
evice Info Intern	net Info LAN & WLAN '	TR-069 Status				
WAN Info						
	Interface	VLAN ID	Protocol	IGMP	Status	IP address
1	1_TR069_R_VID_46		IPoE	Enable	down	
2_I	2_INTERNET_R_VID_100		IPoE	Enable	up	192. 168. 5. 129
3	Other B VID 200	200	br1483	Disable	up	

Network Information					
Default Gateway	192. 168. 5. 254				
Subnet Mask	255. 255. 255. 0				
Primary DNS	192. 168. 5. 254				
Secondary DNS					

----End

4.7 Configuring Gateway ONT Internet Service – Broadcom chip scheme ONT

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create internet vlan
- The OLT configure GE port vlan for Internet
- The OLT configure PON port vlan for Internet
- The ONT is registered



1. Configuring IPoE WAN in ONT Web

Click Advanced Setup \rightarrow WAN \rightarrow Add

Device Info
Advanced Setup
WAN
LAN
NAT
Firewall
Parental Control
Quality of Service
Routing
DNS

UPnP DNS Proxy Interface Grouping Multicast Wireless Voice Diagnostics Management Logout

Wide Area Network (WAN) Service Setup

hoose Add, Remove or Edit to configure a WAN service over a selected interface.								
Interface	Description	Туре	VLAN priority	VLAN ID	TPID	MTU	Multicast VLAN	IGMP Proxy
epon0.1	1_TR069_R_50	IPoE	0	50	0x8100	1450	-1	Disable

Add Remove

C	lick	Ν	ext
-	i i Circ		CAL

Quality of Service Routing DNS UPnP DNS Proxy Interface Groupin Multicast Voice Diagnostics Management Logout

Device Info

LAN

NAT Firewall Parental Control

Advanced Setup

WAN Service Interface Configuration

Select a layer 2 interface for this service
epon0/epon0

Back Next

Click Next

Device Info	WAN Service Configuration	
Advanced Setup		
WAN	Select WAN service type	
LAN	PPP over Ethernet (PPPoE)	
NAT	IP over Ethernet (IPoE)	
Firewall	O Bridging	
Parental Control		
Quality of Service		
Routing	Enter Service Description INTERNET	
DNS		
UPnP	For tagged service, enter valid 802.1P Priority and 802.1Q VLAN ID	
DNS Proxy	For untagged service, set -1 to both 802.1P Priority and 802.1Q VLAN ID	
Interface Grouping		
Multicast	Enter 802,1P Priority [0-7]: 0	
Wireless	Enter 802.1Q VLAN ID [0-4094]: 100	
Voice	Multicast VLAN [-1 or 0-4094]; -1	
Diagnostics	Select VLAN TPID 0x8100	
Management		
Logout	Network Protocal Selection IPV4 Only	Back Next

WAN service type select to IP over Ethernet(IPoE). Service Description select to INTERNET. 802.1Q



VLAN ID[0-4094] input 100.

Internet service document take DHCP mode as an example. The service type please selected according to the user's actual use. ONT detail usage please refer to ONT user manual.

Click Next				
Device Info Advanced Setup WAN LAN NAT	WAN IP Settings Enter information provided Notice: If "Obtain an IP add If "Use the following Static ?	to you by your ISP to config ress automatically" is chose IP address" is chosen, enter	gure the WAN IP settings. en, DHCP will be enabled for PVC in IPoE m the WAN IP address, subnet mask and int	ode. Jerface gateway.
Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless Voice	Obtain an IP address as Option 60 Vendor ID Option 61 IAID Option 61 DUID Option 125 Ouse the following Static WAN IP Address WAN Subnet Mask	Disable	(8 hexadecimal digits) (hexadecimal digits) O Enable	
Diagnostics Management Logout	WAN gateway IP Address			Back Next

WAN IP Settings click **Obtain an IP address automatically** if topology use DHCP. If topology use static IP. Click **Use the following Static IP address** and input the IP address, Subnet Mask and gateway IP address.

Click Next	
Device Info	Network Address Translation Settings
Advanced Setup WAN	Network Address Translation (NAT) allows you to share one Wide Area Network (WAN) IP address for multiple computers on your Local Area Network (LAN)
LAN NAT	Enable NAT
Firewall Parental Control	Enable Fullcone NAT
Quality of Service	
DNS	Enable Firewall
UPnP DNS Promi	TGMD Multicast
Interface Grouping	TOHE MURGER
Multicast	Enable IGMP Multicast Proxy
Voice	Enable IGMP Multicast Source
Diagnostics Management	
Logout	
	The maximum allowed size of an Ethernet frame
	MTU [576-1500]:1492
	Back Next

Click Next



Device Info	Routing Default Gateway	
Advanced Setup		
LAN	Default gateway interface list can have mu	Itiple WAN interfaces served as system default gateways but only one will be used according t
NAT	connected. Priority order can be changed	y removing an and adding them back in again.
Firewall	Selected Default Gateway	Available Routed WAN
Parental Control	Interfaces	Interfaces
Routing	epon0.2	epon0.1
DNS		
UPnP		
Interface Grouping		
Multicast	<-	
Wireless		
Voice		
Management		
Logout		
		Back Next
Click Novt		
CIICK INEXL		
Device Info	DNS Server Configuration	
WAN	Select DNS Server Interface from available	WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only
LAN	order can be changed by removing all and	a WAN interfaces served as system dns servers but only one will be used according to the prid adding them back in again
NAT		
Firewall Parental Control	Select DNS Server Interface from	available WAN interfaces:
Quality of Service	Selected DNS Server Interfaces	Available WAN Interfaces
Routing	epon0.1	epon0.2
DNS	Set Contraction	
DNS Proxy		
Interface Grouping	->	
Multicast		
Wireless		
Diagnostics		
Management		
Logout	0	
	Use the following Static DNS IP a	ddress:
	Primary DNS Server	
	Secondary DNS Server	
		Back Next
Click Apply/Save		
Advanced Setup	WAN Setup - Summary	
WAN	Make sure that the settings below match the	settings provided by your ISP
LAN	Connection Type TPoF	7
NAT	NAT Enable	
Parental Control	Enable Fullcone NAT Disabl	2
o 17 (o :		-

Device Info
Advanced Setup
WAN
LAN
NAT
Firewall
Parental Control
Quality of Service
Routing
DNS
UPnP
DNS Proxy
Interface Grouping
Multicast
Wireless
Voice
Diagnostics
Management
Logout

Connection Type	IPoE
NAT	Enable
Enable Fullcone NAT	Disable
Firewall	Disable
IGMP Multicast Proxy	Disable
IGMP Multicast Source	Disable
MLD Multicast Proxy:	Disable
MLD Multicast Source Enabled:	Disable
Quality Of Service	Disable

Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications

Back Apply/Save

2. Check ONT Status

Click Device Info→ WAN



Device Info	WAN Info	WAN Info													
WAN	Interface	Description	Туре	VLAN ID	MTU	IPv6	IGMP Proxy	IGMP SRC Enable	MLD Proxy	MLD SRC Enable	NAT	Firewall	Status	IPv4 Address	IPv6 Address
Statistics	epon0.1	1_TR069_R_50	IPoE	50	1450	Disable	Disable	Disable	Disable	Disable	Enable	Enable	Connecting	0.0.0.0	
ARP	epon0.2	2_INTERNET_R_100	IPoE	100	1492	Disable	Disable	Disable	Disable	Disable	Enable	Disable	Connected	192.168.5.14	
DHCP															
Voice															
Optic															
Advanced Setup															

4.8 Configuring Gateway ONT IPTV Service – Broadcom chip scheme ONT

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create IPTV vlan
- The OLT configure GE port vlan for IPTV
- The OLT configure PON port vlan for IPTV
- The OLT configure IGMP and Multicast vlan
- The ONT is registered

1. Configuring Bridge WAN in ONT Web

Click Advanced Setup \rightarrow WAN \rightarrow Add

Device Info
Advanced Setup
WAN
LAN
NAT
Firewall
Parental Control
Quality of Service
Routing
DNS
UPnP
DNS Proxy
Interface Grouping
Multicast
Wireless
Voice
Diagnostics
Management
Lawrent

Wide Area M	Network	(WAN)	Service	Setup

 Choose Add, Remove or Edit to configure a WAN service over a selected interface.

 Interface
 Description
 Type
 VLAN priority
 VLAN ID
 TPID
 MTU
 Multicast VLAN
 IGMP Proxy

 enon0.1
 1
 TE069.R
 50
 0x8100
 1450
 -1
 Disable

epon0.1	1_TR069_R_50	IPoE	0	50	0x8100	1450	-1	Disabl
epon0.2	2_INTERNET_R_100	IPoE	0	100	0x8100	1492	-1	Disable

Add Remove

Click Next

Device Info Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Gro Multicast Wireless Voice Diagnostics Management Logout

WAN Service Interface Configuration

Select a layer 2 interface for this service
epon0/epon0

Back Next

Click Next



Device Info	WAN Service Configuration			
Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing	Select WAN service type PPP over Ethernet (PPPoE) IP over Ethernet (IPoE) Findging Allow as IGMP Multicast Source Allow as MLD Multicast Source			
DNS UPnP DNS Proxy Interface Grouping Multicast	Enter Service Description Other For tagged service, enter valid 802.11 For untagged service, set -1 to both 8	P Priority and 802.1Q 802.1P Priority and 81	VLAN ID D2.1Q VLAN ID	
Wireless	F (
Voice Diagnostics	Enter 802.10 Phoney [0-7]: Enter 802.10 VLAN ID [0-4094]:	200		
Logout	Select VLAN TPID	0x8100	\checkmark	
				Back Next

WAN service type select to **Bridging**. Check **Allow as IGMP Multicast Source**. Service Description select to **Other.** 802.1Q VLAN ID[0-4094] input **200**. Multicast VLAN[-1 or 0-4094] input **200**.

Make sure that the settings below m	ch the settings provided by your ISP	
Connection Type	undefined	
NAT	Enable	
Enable Fullcone NAT	Disable	
Firewall	Disable	
IGMP Multicast Proxy	Disable	
IGMP Multicast Source	Enable	
MLD Multicast Proxy:	Disable	
MLD Multicast Source Enabled:	Disable	
Quality Of Service	Disable	
Click "Apply/Save" to have this interf	e to be effective. Click "Back" to make an	v modifications
	Connection TypeuNATEEnable Fullcone NATEFirewallEIGMP Multicast ProxyEIGMP Multicast SourceEMLD Multicast Proxy:EQuality Of ServiceEClick "Apply/Save" to have this interface	Connection Type undefined NAT Enable Enable Fullcone NAT Disable Firewall Disable IGMP Multicast Proxy Disable IGMP Multicast Source Enable MLD Multicast Proxy: Disable MLD Multicast Source Enabled: Disable Quality Of Service Disable Click "Apply/Save" to have this interface to be effective. Click "Back" to make an anti-structure.

Back Apply/Save

Click Advanced Setup→ Interface Grouping



Device Info	Interface grouping Configuration			
Advanced Setup				
WAN	 Enter the Group name and the group r 	ame must be unique :	and select either 7. (dynamic) or 3. (static) hele	1 Martin
LAN	ar circo ore group name one are group n	unite mast on unique e	and select clones of (dynamic) of st (static) set	
NAT	2. If you like to automatically add LAN clie	ents to a WAN Interfac	ce in the new group add the DHCP vendor ID s	tring. By configuring a DHCP vendor ID string any DHCP client request with the specif
Firewall	IP address from the local DHCP server.			
Parental Control	3. Select interfaces from the available inte	rface list and add it to	the grouped interface list using the arrow but	ons to create the required mapping of the ports. Note that these clients may obt:
Quality of Service				
Routing	 Click Apply/Save button to make the ch 	hanges effective imme-	diately	
DNS				
UPnP				
DNS Proxy	IMPORTANT If a vendor ID is configu	ured for a specific d	lient device, please REBOOT the client dev	rice attached to the modem to allow it to obtain an appropriate IP address.
Interface Grouping	c			
Multicast	Group Name IPTV			
Wireless			a :	
Voice	WAN Interface 3_Other_B_200/	eponU.3 V	<u></u>	
Diagnostics				
Management				
Logout	Grouped LAN Interfaces		Available LAN Interfaces	
	[-1]-1 0		10.0	
	emil		eth0.0	
			etriz.0	
			etho.u	
		->	wianu	
			wi0_Guesto0FEGUIwi0.1	
		<-	wid_GuestooFEGUIwid.2	
			WIU_GUESIOUFEGU[WIU.5	
	1		L	

Group Name free to enter. WAN Interface select to **3_Other_B_200/epon0.3**. Move **eth1.0** to Grouped LAN interface. The purpose of this step is isolate LAN2 with other LAN port avoid multicast packet flood to other LAN port. If eth1.0(LAN2) move to Grouped LAN interface. LAN2 only can receive multicast traffic. Internet is not work on LAN2. This step is not necessary but recommended.

Click Advanced Setup \rightarrow Interface Grouping to check Interface group status.

Device Info Advanced Setup WAN LAN NAT	Interface Group Interface Groupi button will remo	i ping ng supports ve the grou	multiple ports to P ping and add the u	WC and bridging groups. E ngrouped interfaces to the	ach group will perform Default group. Only th	i as an independent network. To support this feature, you must create mapping grou re default group has IP interface
Firewall Parental Control	Group Name	Remove	WAN Interface	LAN Interface	DHCP Vendor IDs	
Quality of Service		-	epon0.1	eth0.0		
Routing			epon0.2	eth2.0	1	
UPnP				eth3.0	1	
DNS Proxy	Default			wlan0		
Interface Grouping Multicast				wl0_Guest80FEGU wl0.1		
Wireless				wi0_Guest80FEGU/wi0.2	1	
Voice				wi0_Guest80FEGU/wi0.3	1	
Management Longut	IPTV		epon0.3	eth1.0		
	Add Rem	ove				

4.9 Configuring Gateway ONT VOIP Service – Broadcom chip scheme ONT

Prerequisites

- The OLT is connected to the uplink device success
- The OLT create VOIP vlan
- The OLT configure GE port vlan for VOIP
- The OLT configure PON port vlan for VOIP
- The ONT is registered



1. Configuring IPoE WAN in ONT Web

Click Advanced Setup \rightarrow WAN \rightarrow Add

Wide Area Network (WAN) Service Setup

Device Info Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless Voice Diagnostics Management Logout

Interface	Description	Туре	VLAN priority	VLAN ID	TPID	MTU	Multicast VLAN	IGMP Proxy
epon0.1	1_TR069_R_50	IPoE	0	50	0x8100	1450	-1	Disable
epon0.2	2_INTERNET_R_100	IPoE	0	100	0x8100	1492	-1	Disable
epon0.3	3_Other_B_200	Bridge	0	200	0x8100	1492	-1	Disable

Add Remove

Click Next

Device Info Advanced Setup WAN LAN NAT Firewall Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Gr Multicast Wireless Voice Diagnostics Management Logout

Click Next

Device Info
Advanced Setup
WAN
LAN
NAT
Firewall
Parental Control
Quality of Service
Routing
DNS
UPnP
DNS Proxy
Interface Grouping
Multicast
Wireless
Voice
Diagnostics
Management
Logout

WAN Service Configuration
Select WAN service type
O PPP over Ethernet (PPPoE)

IP over Ethernet (IPoE)
 Bridging

Enter Service Description VOICE

For tagged service, enter valid 802.1P Priority and 802.1Q VLAN ID For untagged service, set -1 to both 802.1P Priority and 802.1Q VLAN ID

E.

Enter 802.1P Priority [0-7]: Enter 802.1Q VLAN ID [0-4094]: Multicast VLAN [-1 or 0-4094]: Select VLAN TPID

0	
300	
-1	
0x8100	~

~

Network Protocal Selection

Back	Next
Dorn.	THEAL

Company Address: Flat 6, Bldg 4,South 2 of Honghualing Industrial Zone,Liuxian Road, Xili Town, Shenzhen, Guangdong, China(518055) Factory Address: Fl1, Bldg B, Wentao Industrial zone, Yingrenshiyongxin Village, Shiyan Street, Baoan district, Shenzhen, Guangdong, China (518055) Tel: +86-755-26014509/4710/4711 Fax:+86-755-26014506 Website: www.cdatatec.com

WAN Service Interface Configuration

Select a layer 2 interface for this service
epon0/epon0

Back Next



WAN service type select to IP over Ethernet(IPoE). Service Description select to VOICE. 802.1Q VLAN ID[0-4094] input 300.

Click Next				
Device Info Advanced Setup WAN LAN NAT Eirourall	WAN IP Settings Enter information provided to Notice: If "Obtain an IP addres If "Use the following Static IP :	you by your ISP to configu is automatically" is choser address" is chosen, enter i	re the WAN IP settings. , DHCP will be enabled for PVC in IPoE mode. he WAN IP address, subnet mask and interface gateway.	
Parental Control Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless	Obtain an IP address auto Option 60 Vendor ID Option 61 IAID Option 61 IDUID Option 61 DUID Option 125 WAN 12 Address WAN Subnet Mask	Disable ddress 192.168.0.17 255.255.255.0	(8 hexadecimal digits) (hexadecimal digits) O Enable	
Voice Diagnostics	WAN gateway IP Address	192,168.0.36		
Management Logout			Back	Next

D NOTE:

WAN IP Settings click Usethe following Static IP address and input the IP address, Subnet Mask and gateway IP address if topology use static ip. If topology use DHCP. Click Obtain an IP address automatically.

Click Next

Device Info	Network Address Translation Settings
Advanced Setup	Network Address Translation (NAT) allows white share one Wide Area Network (WAN) ID address for multiple computers on vour Local Area Network (LAN)
WAN	Herror Analysis in the second
LAN	
NAT	
Firewall	Enable Eulenne NAT
Parental Control	
Quality of Service	
Routing	Enable Firewall
DNS	
UPnP	
DNS Proxy	IGMP Multicast
Interface Grouping	
Multicast	Enable IGMP Multicast Proxy
Wireless	
Voice	Enable IGMP Multicast Source
Diagnostics	
Management	
Logout	
	The maximum allowed size of an Ethernet frame
	MTU [576-1500]: 1492
	Back Next

Click Next



Device Info
Advanced Setup
WAN
LAN
NAT
Firewall
Parental Control
Quality of Service
Routing
DNS
UPnP
DNS Proxy
Interface Grouping
Multicast
Wireless
Voice
Diagnostics
Management
Logout

Routing -- Default Gateway

Default gateway interface list can have multiple WAN interfaces served as system default gateways but only one will be used according to the priority can be changed by removing all and adding them back in again.

Selected Default Gateway Interfaces

epon0.2

->	
~	

epon0.4	
epon0.1	

Back Next

Click Next

Device Info

WAN LAN NAT Firewall

Advanced Setup

Parental Control

Quality of Service Routing DNS UPnP DNS Proxy Interface Grouping Multicast Wireless Voice Diagnostics Management Logout

DNS Server Configuration

Select DNS Server Interface from available WAN interfaces OR enter static DNS server IP addresses for the system. In ATM mode, if only a single PVC DNS Server Interfaces can have multiple WAN interfaces served as system dns servers but only one will be used according to the priority with the changed by removing all and adding them back in again

Select DNS Server Interface from available WAN interfaces: Selected DNS Server Interfaces Available WAN Interfaces

->	
<-	

Primary DNS Server	
Secondary DNS Server	

Back Next

Click Apply/Save

Device Info WAN Setup - Summary Advanced Setup Make sure that the settings below match the settings provided by your ISP WAN LAN Connection Type IPoE NAT NAT Enable Firewall Parental Control Enable Fullcone NAT Disable Quality of Service Firewall Disable Routing IGMP Multicast Proxy Disable DNS IGMP Multicast Source Disable UPnP MLD Multicast Proxy: **DNS Proxy** Disable Interface Grouping MLD Multicast Source Enabled: Disable Multicast Quality Of Service Disable Wireless Voice Click "Apply/Save" to have this interface to be effective. Click "Back" to make any modifications Diagnostics Management Logout

Back Apply/Save

Click Device Info \rightarrow WAN , this is for checking the information of WAN in the ONU.



Device Info Summary WAN Statistics Route ARP DHCP Voice Optic Advanced Setup Wireless Voice Diagnostics Management

Interface	Description	Туре	VLAN ID	MTU	IPv6	IGMP Proxy	IGMP SRC Enable	MLD Proxy	MLD SRC Enable	NAT	Firewall	Status	IPv4 Address	IPv6 Address
epon0.1	1_TR069_R_50	IPoE	50	1450	Disable	Disable	Disable	Disable	Disable	Enable	Enable	Connecting	0.0.0.0	
epon0.2	2_INTERNET_R_100	IPoE	100	1492	Disable	Disable	Disable	Disable	Disable	Enable	Disable	Connected	192.168.5.14	
epon0.3	3_Other_B_200	Bridge	200	1492	Disable	Disable	Enable	Disable	Disable	Disable	Disable	Connected	0.0.00	
epon0.4	4_VOICE_R_300	IPoE	300	1492	Disable	Disable	Disable	Disable	Disable	Enable	Disable	Connected	192.168.0.17	

2. Configuring Voice in ONT Web

Click Voice → SIP Basic Setting

Device Info Advanced Setup Voice SIP configuration Wireless Enter the SIP parameters and click Start/Stop to save the parameters and start/stop the voice application Voice Output	
Wineless Enter the SIP parameters and click Start/Stop to save the parameters and start/stop the voice application Voice	
Voice	
SIP Basic Setting Locale selection* CHN - CHINA V (Note: Requires the SIP client to be stopped of the stopped o	ed and then started to take affect)
SIP Advanced Setting	
H.248 Setting SIP Domain name [®] :	
Diagnostics [2_9]vvvvvvS[01[34579]vvvvvvv[1]34579]vvvvvvvv[0]0[1]	.01
Management [2 0] Addatada [0] [300]	· ·
Dialpan 179090x+S 200 201 400xxxxxxx 600xxxxxxx 800xxxxxxx 800xxxxxxx 800xxxxxxx 800xxxxxxx 800xxxxxxxx	xx *x
x.# *xx.*x.# #xx.# #xx.# #xx.*x.# *#xx.*x.# *#xx.*x.# *#xx.*# *	(x.*# 🗸
*xx.*x.*x.*x.*x.* x.# 3x+5 12[13]xx5 1000x+5 00x+5 **x+5	
Use SIP Proxy	
SIP Proxy 192,168.0.36	
SIP Proxy Port 5060	
View STR Outbound Brane	
SIP Outbound Proxy 192.168.0.36	
SIP Outbound Proxy Port 5060	
☑ Use SIP Registrar	
SIP Registrar 192.168.0.36	
SIP Registrar Port 5060	
SIP Account 0 1	
Enabled 🗹 🖌	
Extension 88880001 88880002	
Display name 88880001 88880002	
Authentication name 88880001 88880002	
password 88880001 88880002	
Physical Terminal Assignment	
Preferred ptime 20 V 20 V	

SIP Proxy, SIP Outbound Proxy, SIP Registrar enter SIP server IP address. Extension, Display name, Authentication name, password enter base on user actual setting.

Click Device Info→ Voice



Summany	Voice Into	H.248/S1P	
WAN	Name	Registration Status	Call Status
Statistics	88880001	Up	Idle
Route			1000
ARP	88880002	Up	Idle
DHCP	0.723	80	14
Voice			
Optic			
Optic Advanced Setup			
Optic Advanced Setup Wireless			
Optic Advanced Setup Wireless Voice			
Optic Advanced Setup Wireless Voice Diagnostics			
Optic Advanced Setup Wireless Voice Diagnostics Management			

D NOTE:

If Registration Status is Up mean voice accout register successfully.

----End

5 Ending

Thanks very much for deploying C-DATA equipment.

Should have any doubt or problem to know about our products installation, please don't hesitate to contact us.

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