XL-MB101M

MoCA Ethernet bridge

User’s Guide

Preface

User Guide

This manual explains how to use command line interface to configure XtendLan EOC products.

Reader

1. Network planner
2. Technical service person
3. Network management person

Application Range

The manual is for the EOC head end product XL-MB101M produced by XtendLan company.

Conventions Used in This Manual

command line keyword indicated in **bold**;

command line parameter indicated in *italic*.

Curly brackets “{ }” indicate the contents in them is mandatory;

Center brackets “[ ]” indicate the contents in them is optional;

Angular brackets “<>” indicate the contents in them will not be shown;

Square brackets “【】” indicate the contents in them needs the notice of user;

Vertical line “|” is used to separate several options, indicates alternative or multiple-choice;

Diagonal “/” is used to separate several options, it indicates all the options can be selected by the same time;

“🕭 **Notice** ” Indicates the user should pay attention to, it is the key point of system configuration, please read carefully.

“🕮 **Note**” Indicates the note for the mentioned content;

“🕮 **Diagram**” Indicates the written explanation to the diagram.

Statement

As the upgrade of the product or other uncertain reasons, this manual will be updated in the future. This manual can only be used as the user guide, the statements、information or construction does not guarantee anything, unless there is any other agreement.

Catalogue

Chapter One System Base

This Chapter introduces the basic knowledge of XtendLan EOC(Ethernet Over Cable) system, including the preparation of configuration and command line interface relating knowledge.

The content of this chapter:

1. EOC Configuration Method Introduction
2. XtendLan Shell Introduction
3. XtendLan EOC Product Function Introduction
4. XtendLan EOC Product Typical Application

1.1 Configuration Method

XtendLan EOC products support the following three typical configuration methods:

1. Via console port, use Shell command to configure
2. Via Telnet remote login, use Shell to configure
3. Use SNMP network management to configure
4. The manual explains the configuration method of console and telnet by login to Shell, the following chapters will explain the detail use of shell and EOC configuration command.
5. The manual does not include the relating content of SNMP network management, if need help, please refer to network management manual.

1.2 XtendLan Shell Introduction

1.2.1 Shell Function

1. For the convenience of user management, the command processing subsystem (thereafter called shell) are embedded in XtendLan EOC product, the command line operation interface is familiar to the network engineer. The main function includes:
2. Command line edit
3. Command line help
4. Command grammar navigation
5. Command parsing
6. Command execute
7. Command line edit. Edit by line, multiple hotkeys are available for edit help.

8. Command line help. User can type “?” to acquire the meaning of which are being typed and the use method help when editing.
9. Command grammar navigation. This function can help to input command fast, user input some prefix letters, then press TAB key, shell will search for relating commands according to the prefix letters and guide the user to input the command.
10. Command parsing. Automatic check if the input command grammar is right or wrong, wrong commands will not be processed by Shell.

1.2.2 Shell Mode

1. The Shell interface of XtendLan EOC equipment is divided into several command modes (thereafter called mode). Different modes have different commands, for different function configuration.
2. Under different command modes, shell has different prompts. XtendLan EOC product has the following command modes (suppose hose name is the system defaul string “GD.LINK”):

Prompt	Mode	Enter Method	Quit Method	Function
GD.LINK>	User Mode	console：the default mode when startup. telnet：enter to this mode when login in.	console：execute **exit** command to quit and restart the application. telnet: execute **exit** command to break off telnet connection。	Display system information and the command of privileged mode.
GD.LINK#	Privileged Mode	Execute **enable** command under user mode	Execute **exit** command to return to user mode. Execute configure terminal command to enter privileged mode. Execute **file** command to enter to file system configuration mode.	Display、debug all kinds of commands under this mode. Including the commands of “file system configuration mode” and “global configuration mode”.
GD.LINK(config)#	Global Configuratio	Execute configure terminal command	Execute **exit** command to	Configuration system

	n Mode	under privileged mode.	return to privileged mode. Execute interface manage-interface command to enter to interface configuration mode. Execute **headend** command to enter to EOC head end configuration mode. Execute **user** command to enter to user database configuration mode. Execute **line vty** command to enter to virtual terminal configuration mode.	operates the required global parametes.r
GD.LINK(config-if)#	Interface Configuration Mode	Execute interface interface manage-interface under global configuration mode.	Execute **exit** command to return to global configuration mode.	Configure and manage interface parameter.
GD.LINK(config-headend)#	EOC Head End Configuration Mode	Execute **service stop** to stop forwad service, and then execute **headend command** under global configuration mode.	Execute **exit** command to return to global configuration mode.	Configure EOC head end parameter.
GD.LINK(config-user<n>)#	User Database Configuration Mode	Execute **user command** under global configuration mode.	Execute **exit** command to return to global configuration	Configure EOC user database.

			mode.	
GD.LINK(file)#	File System Configuration Mode	Execute **file** commande under privileged mode.	Execute **exit** command to return to privileged mode.	System remote upgrade.
GD.LINK(config-line)#	Virtual Teminal Configuration Mode	Execute **line vty** command under global configuration mode.	Execute **exit** command to return to global configuration mode.	Shell parameter configuration.

1.2.3 Get Help

User can input question mark (?) under command prompt to list the commands of each function mode.

User can also use the following command writing to acquire help information:

Command	Explanation
Help Command	User can input this command to get shell common operation help information under any mode.
？Command	？command includes the following formats: Direct input of ？: check all the commands underthe running mode. Input of command prefix <?>: check the commands with the same prefix under running mode. Example: GD.LINK# s<?> show show clink statics system system control tools. Input command keywords <?>: check the subsequent parameters of the running command. Example: GD.LINK# ping <?> A.B.C.D Host ip address
Command prefix <TAB>	AutoFill command keyword. Example : GD.LINK# p<TAB>

GD.LINK# ping

If a command prefix is corresponding to serveral commands, shell will list all the options for user to input.

Example : GD.LINK# s<TAB>

show system

In the about example, shell shows two commands with prefix of ‘s’.

1.2.4 Command Abbreviation

1. XtendLan Shell allows the user to input abbreviation command. Shell will find the correct command to execute automatically as long as the abbreviation command is unique.

- For example, show running-config command can be shortened to :
- GD.LINK# show run

2. If shell finds more than one result for an input command, the sytem will print “% Ambiguous command” to prompt the user.

- GD.LINK# s r
- % Ambiguous command.

1.2.5 Common Prompt Information Meaning

% Ambiguous command: system finds several commands corresponding to the abbrevation command

% Command incomplete: input commmand is incomplete.

% Unknown command: the keyword of the input command is wrong.

1.2.6 Use History Command

The system can remember the last ten input commands, user can use Ctrl+P or upward arrow keyboard, and Ctrl+N or downward arrow keyboard to browse the the history commands.

1.2.7 Line Edit Shortcut Keys

The following shortcut keys can be used to edit command line or to control cursor when editing the command line:

Function	Shortcut Key	Explanation
Move cursor	Left arrow or Ctrl+B	Move cursor to the left
	Right arow or Ctrl+F	Move cursor to the right

	Ctrl+A	Move cursor to the beginning of the line.
	Ctrl+E	Move cursor to the end of the line.
Delete the input letter	Backspace key	Delete one letter on the left of the cursor.
	Delete key	Delete the letter where the cursor is at.
Screen Scroll Control	Any key	Page down
	Q key	Quit scrol

1.3 XtendLan EOC products function introction

XtendLan EOC products are the enter equipments based on EOC technique in MOCA (MultiMedia Over Coax Alliance). The function is to modulate the baseband signals to 800~1500MHz frequency by the way of OFDM, and to transmit in HFC network after mixing the signals with TV signals, which can rebuild the unidirectional normal CATV network to a bilateral network that can transmit ethernet data without large change of the existing TV network equipemnt and layout. XtendLan EOC products includes two main types: the station device network coordinator (NC) and the end customer premise equipment (CPE). Each of the function are:

Function of Station Device:

● MOCA network control, for controlling the CPEs in MOCA network to receive ether messages. MOCA network adopts TDMA work mode and CPE time-sharing data transmission. In addition, NC can also be used to control the acess CPE.

● Modulation-demodulation process. OFDM modulation-demodulation, data frequency signal convert, automatic gain control and automatic power control can be realized.

● Ethernet Layer 2 switching, finishing ethenet message layer 2 transmission.

● SNMP server, for accepting romote management of the SNMP network manage software.

● TELNET server, users can login to NC via TELNET client remote, thus the remote management can be processed by command line mode.

● VTY terminal server, which is communicated with the hyperterminal of a computer by using 115200 baudrate serial interface so as to set the local information of NC.

Function of CPE:

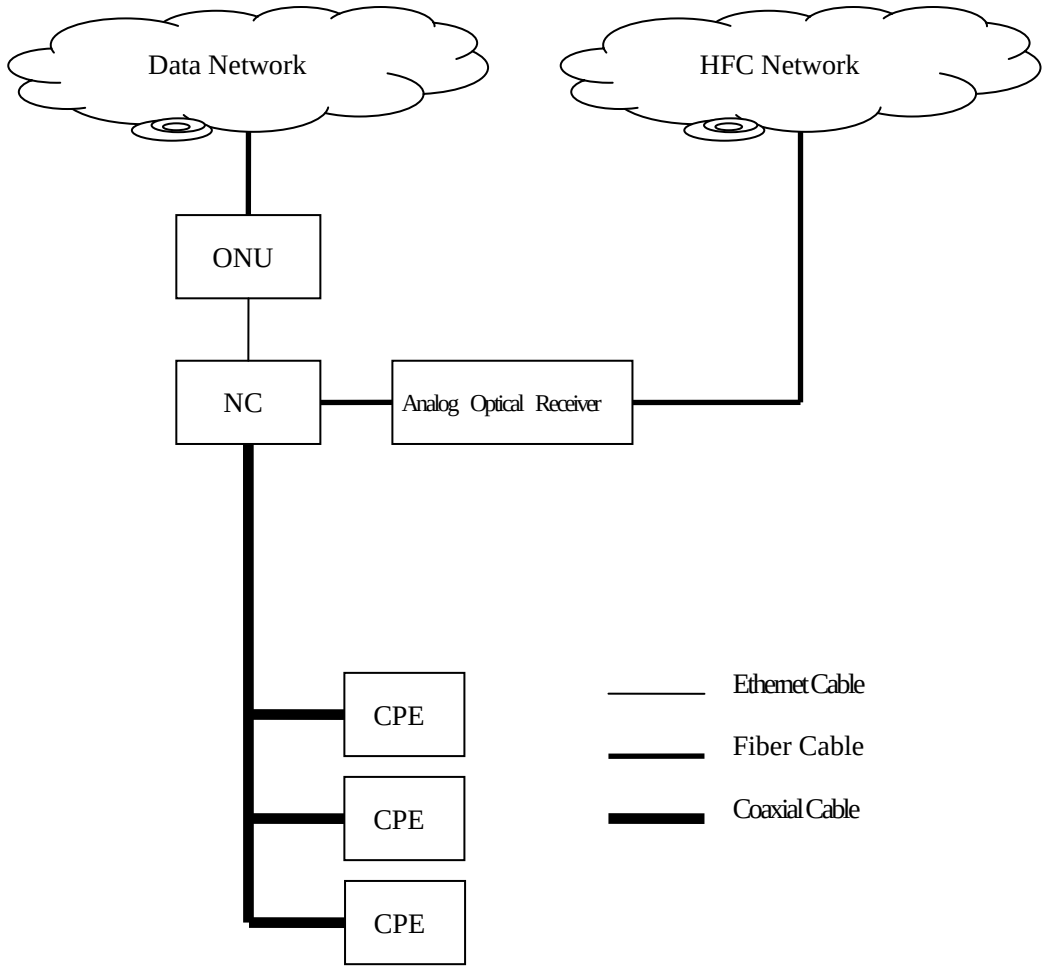
● Modulation-demodulation process. Finishing OFDM modulation-demodulation, data frequency signal

convert, automatic gain control and automatic power control.

● Ethernet Layer 2 switching, finish ethenet message layer 2 transmission.

1.4 XtendLan EOC Products Typical Application

XtendLan EOC products are designed for the network bidirectional rebuilding, mainly used to solve the last 300 enter problem in catv data network. NC and CPE can continuously work under the condition that the link attenuation is less than 75db (the transmission distance can be more than 300m under the condition that the standard 5mm coaxial cable is in direct enter). The typical application enviroment diagram is shown as following:



Chapter Two Shell Relating Configuration

This chapter describes shell relating configuration, including the following function configuration command:

Mode shift command.

The common command under all command modes.

Virtual terminal configuration.

Privileged mode and Telnet enter passwork configuration

Application startup prompt information.

Startup script configuration and display.

System miscellaneous.

2.1 Mode Shift Command

This section indicates the enter methods of the command modes of XtendLan EOC products.

2.1.1 Command Description

Command	Description	Configuration Mode
enable	Enter to privileged mode	User Mode
configure terminal	Enter to global configuration mode	Privileged Mode
file	Enter to file configuration mode	Privileged Mode
headend	Enter to head end configuration mode	Global Configuration Mode
user	Enter to user database configuration mode	Global Configuration Mode
interface	Enter to interface configuration mode	Global Configuration Mode
line vty	Enter to virtual terminal configuration mode	Global Configuration Mode

- Enable

From user mode to privileged mode.

enable

Grammar	Description
enable	from user mode to privileged mode, to enter privileged mode needs correct password. The system defult password is admin.

▪configure terminal

Command for shifting from privileged mode to global configuration mode.

configure terminal

Grammar	Description
configure terminal	from privileged mode to global configuration mode.

file

From user mode to file configuration mode.

file

Grammar	Description
file	From user mode to file configuration mode.

headend

From global configuration mode to head end configuration mode.

headend

Grammar	Description
headend	From global configuration mode to head end configuration mode.

🕮 Note: user should use service stop to stop EOC headend farward service under the globle configuration mode before enter to headend mode.

user

From global configuration mode to user database configuration mode.

user number

Grammar	Description

user number	From global configuration mode to user database configuration mode. Number indicates the logic number of user.

interface

From global configuration mode to interface configuration mode.

interface interface-name

Grammar	Description
interface interface-name	From global configuration mode to interface configuration mode. interface-name indicates the interface names of three layers.

line

From global configuration mode to virtual terminal configuration mode.

line vty

Grammar	Description
line vty	From global configuration mode to virtual terminal configuration mode

2.2 The common command under all command modes

This section introduces the common command under all command modes.

2.2.1 Command Description

Command	Description	Configuration Mode
exit	Quit the running mode and return to the previous mode.	All modes
end	Quit to privileged mode directly.	All modes except user mode
help	Print shell basic help information.	All modes
quit	The same as exit command	All modes

exit

Quit the running mode and return to the previous mode.

exit

Grammar	Description
exit	Quit the running mode and return to the previous mode.

end

Quit to privileged mode directly.

end

Grammar	Description
end	Use this command can quit to privileged mode under any command mode.

🕮 Notice: User mode does not includes this command.

help

Print shell basic help information.

help

Grammar	Description
help	print shell basic help information.

quit

Quit the running mode and return to the previous command mode.

quit

Grammar	Description
quit	Quit the running mode and return to the previous command mode.

🕮 Notice: the command is another name of exit.

2.3 Virtual Terminal Configuration

This section describes the virtual terminal configuration of XtendLan EOC products.

2.3.1 Command Description

Command	Description	Configuration Mode
exec-timeout	Configure the terminal timeout period.	virtual terminal configuration mode
login	Configure if a password check is needed when enter to telnet.	virtual terminal configuration mode

exec-timeout

Configure the terminal timeout period. When the terminal no stroke time is longger than the configuration value, console terminal will quit back to user mode automatically, telnet terminal will cut connection automatically.

exec-timeout minutes seconds

no exec-timeout

Grammar	Description
exec-timeout minutes seconds	Configure the terminal timeout period. Minutes indicates the expired minutes, seconds indicates the expired seconds.
no exec-timeout	Recover the terminal timeout period to the defult value. The defult value is 1 minutes timeout period.

login

Configure if a password check is needed when enter to telnet.

login

no login

Grammar	Description
login	Password check is needed when enter to telnet. The default is need password check.
no login	Password check is not required when enter to telnet.

2.4 Privileged Mode and Telnet Login Password Configuration

This section explains the method of how EOC products enter to privileged mode and Telnet login password configuration.

2.4.1 Command Description

Command	Description	Configuration

		Mode
password	Configure telnet login password	Global mode
enable password	Configure privileged mode password	Global mode
enable password-encryption	Start encrypted password	Global mode

password

Configure the login password when enter to Telnet.

password login_password

no password

Grammar	Description
password enable_password	Configure the login password when enter to Telnet. *login_password* parameter indicates the configured password.
no password	Cancel Telnet login password.

enable password

Configure the login password for enable command when enter to privileged mode.

enable password enable_password

no enable password

Grammar	Description
enable password *enable_password*	Configure the login password to privileged mode. *enable_password* parameter indicates the user configuredpassword.
no enable password	Recover the login password to privileged mode to be thedefault value. The system defult password is “admin”.

enable password-encryption

Start the encrypted password function.

nable password-encryption

no enable password-encryption

Grammar	Description
enable password-encryption	Start the encrypted password. After execute the command, the privileged mode password and Telnet

	login password will be stored in start script after encryption.
no enable password-encryption	Cancel password encryption function. After execute the command, Telnet password will be deleted, the privileged mode password will become to the default value of “admin.”

2.5 Application Program Start-up Prompting Message

This section introduces the configuration method of the prompting message when XtendLan EOC products start-up.

2.5.1 Command Description

Command	Description	Configuration Mode
banner motd default	Print edition information when the application is started up.	Global mode
no banner motd	No print of edition information when the application is started up.	Global mode

banner motd

Configure if the print of prompt information when the application is started up.

banner motd default

no banner motd default

Grammar	Description
banner motd default	Print the default prompt information when the application is started up.
no banner motd	No print of the prompt information when the application is started up.

2.6 Start Script Configuration and Display

This section explains the configuration and display command of script start for XtendLan EOC products.

2.6.1 Command Description

Command	Description	Configuration Mode
write	Save the running system configuration to the startup script.	privileged mode
copy running-config startup-config	Save the running system configuration to the startup script.	privileged mode
show running-config	Display the running system configuration.	privileged mode
show startup-config	Display startup script file.	privileged mode

write

Save the running system configuration to the startup script file of file system.

write

Grammar	Description
write	Save the runningy system configuration to the startup script file of file system. The startup script file is saved in a non volatile memory, shell will execute the commands in the startup script line by line to configure the system automatically.

copy running-config startup-config

Save the running system configuration to the startup script file of file system.

copy running-config startup-config

Grammar	Description
copy running-config startup-config	Save the running system configuration to the startup script file of file system. The startup script file is saved in the non volatile memory, shell will execute the commands in the startup script line by line to configure the system automatically.

🕮 Notice: this command is another name of write.

show running-config

Show the ruuning configuration.

show running-config

Grammar	Description
show running-config	Show the ruuning configuration.

🕮 Notice: This command can only generate script according the running system configuration, the configuration only exist in the system memory, not saved in the startup script file.

show startup-config

show the saved script file content in the non volatile memory.

show startup-config

Grammar	Description
show startup-config	The command is used to show the saved script file content in the non volatile memory. The shown content is the command which will be executed when the application be started up again.

2.7 System Miscellaneous

This section introduces the commands of system reload, debugging, terminal print control, online terminal information display, network tool and so on other function.

2.7.1 Command Description

Command	Description	Configuration Mode
system reload	reload system	privileged mode
debug	Debug command	privileged mode
terminal monitor	Terminal monitor	privileged mode
who	Online terminal information show	privileged mode
ping	Ping tool	privileged mode
fast-ping	Fast ping tool	privileged mode

system reload

system reload

Grammar	Description
system reload	Reload the system. When the application is started up, it will execute the last saved startup cript, the unsaved running configuration information will lost.

debug

Debug command, for the technique service man to check the debug information of the function modules. It's no need for normal users to pay attention to these commands.

debug function

undebug *function*

Grammar	Description
debug function	Start the debug of a function. *Function* parameter indicates the function module needs debug, after execute, it will print on the debug information when the module is executing.
undebug *function*	Close the debug of a function. *function* parameter indicates the function module needs debug.

terminal monitor

Start the debug information of the Telnet terminal.

terminal monitor

Grammar	Description
terminal monitor	This command is only valid for Telnet, it is used to control the output of some print information.

Who

Check the connected terminal information to this device.

Grammar	Description
who	This command is used to show all the virtual terminals information on the device. As Console terminal does not have IP address, the address bar shows NULL.

ping

ping tool.

ping ip-address

Grammar	Description
ping ip-address	Ping tool, *ip-address parameter* indicates the IP address of the target host

fast-ping

fast ping packet tool. This tool uses 1400 bits big packet to fast ping the target host.

fast-ping ip-address

fast-ping ip-address packet-number

Grammar	Description
fast-ping *ip-address*	fast ping packet tool. *ip-address* parameter indicates the IP address of target IP.
fast-ping ip-address packet-number	fast ping packet tool. *ip-address* parameter indicates the IP address of target IP. *spacket-number* parameter indicates the ping package.

Chapter Three Head End Configuration

This chapter describes the head end configuration method of EOC product. Before enter to the head end configuration mode, please run **service stop** under to stop station equipment (NC) global mode. Execute **service start** command to start the service to make the parameters effective. The Chapter includes the following configuration command:

Automatic power control configuration.

Head end work mode configuration.

System buffer configuration.

Work frequency configuration.

IGMP-SNOOPING configuration.

Min connection establishment parameter configuration.

Modulation density parameter configuration.

Noise gate configuration.

Transmit power configuration.

🕮 **Notice:** As the above stated commands are important to proper operation of the equipment, to make sure the proper operation, user should use the defual configuration by the manufacturer before understanding the functions.

3.1 Head End Configuration Command

1. this section elaborates the meanings of the head end parameters and the usage of configuration command.

3.1.1 Command Description

Command	Description	Configuration Mode
apc-begin-phyrate	Configure the start operation point of automatic power control.	Head end configuration mode
authentication	Configure the enter control way.	Head end configuration mode
buffer	Configure the allocation of buffer area in the chip.	Head end configuration mode
frequency	Configure NC work frequency.	Head end configuration mode
igmp-snooping	Configure IGMP-SNOOPING	Head end

	function switch.	configuration mode
min-link-threshold	Configure the lowest enter PHY rate.	Head end configuration mode
phy-bit-mask	Configure modulation density.	Head end configuration mode
phy-margin	Configure noise gate.	Head end configuration mode
transmit-power	Configure transmit power	Head end configuration mode
service	Configure forward service start/stop	Global configuration mode

apc-begin-phyrate

XtendLan EOC adopts OFDM modulation mode with 256 subcarriers, it can work between QAM2~QAM128 according to the physical channel condition near each of the subcarriers. When physical link is in good condition, all the subcarriers are negotiated as QAM128, the PHY rate at the coaxial cable end can reach to 250-270Mbps at the time. When there is interfering signal on a subcarrier, the QAM number will reduce, the PHY rate will reduce accordingly. When APC module tested that the PHY rate is lower than the configuration, it will increase the transmit power to cover the interfere automatically to keep the perfect PHY rate.

apc-begin-phyrate <50-270>

no apc-begin-phyrate

Grammar	Description
apc-begin-phyrate <50-270>	Configure the start operation point PHY rate of automatic power control. The value range is from 50 to 270Mbps. System defaul value is 250Mbps.
no apc-begin-phyrate	Reset the start operation point PHY rate of automatic power control to be the default value.

authentication

Configure enter control way. When a connect request to NC sent from a CPE, NC will locate the user database according to the globally unique indentity Identifier (UID), and then initially connect according to the configuration value in the user database. When the parameter of authentication is configured as on, the CPE in the database to be located are not allowed to enter. When the parameter of authentication is configured as off, the CPE to be located in the database are allowed to enter.

authentication <on | off>

Grammar	Description
authentication <on | off>	Configure enter control way. The defaul value is off, allow the unfound CPE to enter to NC by default parameter.

buffer

Configure the allocation of buffer area in the chip. Therein, **be** means service the queue best, **af** means ensure forwad service queue, **ef** means expedited forwarding service queue.

buffer be <0-37> af <0-37> ef <0-37>

no buffer

Grammar	Description
buffer be <0-37> af <0-37> ef <0-37>	Configure the allocation of buffer area in the chip. The summation should equal to 37. The system default value is be 31 af 6 ef 0.
no buffer	Reset the allocation of buffer area in the chip to the default value.

frequency

Configure the work frequency of NC.

frequency <950 | 975 | 1000 | 1025 | 1050 | 1075 | 1100 | 1125 | 1150 | 1175 | 1200 | 1225 | 1250 | 1275 | 1300 | 1325 | 1350 | 1375 | 1400 | 1425 | 1450 | 1475 | 1500>

no frequency

Grammar	Description
frequency <950 | 975 | 1000 | 1025 | 1050 | 1075 | 1100 | 1125 | 1150 | 1175 | 1200 | 1225 | 1250 | 1275 | 1300 | 1325 | 1350 | 1375 | 1400 | 1425 | 1450 | 1475 | 1500>	Configure the work frequency of NC. The default of work frequency is 1000Mhz.
no frequency	Reset the work frequency of NC to the default value.

igmp-snooping

Start/stop NC IGMP-SNOOPING function. NC will sniff IGMP protocol message when L2 is forwarding, NC will only forward message to the CPE multicast group. After the function is closed, NC will forward multicast messages to all the online CPE.

igmp-snooping <enable | disable>

no igmp-snooping

Grammar	Description
igmp-snooping <enable | disable>	Start/stop IGMP-SNOOPING function. System default value is **disable**.
no igmp-snooping	Reset IGMP-SNOOPING configuration to default value.

min-link-threshold

Configure allowable min PHY rate enter to NC. When the receiving PHY rate of the CPE requesting to connect to NC is lower than the min value, NC will stop the enter of the CPE.

min-link-threshold <18-200>

no min-link-threshold

Grammar	Description
min-link-threshold <18-200>	Configure allowable min PHY rate enter to NC. System default value is 18Mbps.
no min-link-threshold	Reset allowable min PHY rate enter to NC to system default value.

phy-bit-mask

Configure max NC modulation density. The configuration limits the max modulation density of OFDM subcarriers.

phy-bit-mask <0-qam | 2-qam | 4-qam | 8-qam | 16-qam | 32-qam | 64-qam | 128-qam>

no phy-bit-mask

Grammar	Description
phy-bit-mask <0-qam | 2-qam | 4-qam | 8-qam | 16-qam | 32-qam | 64-qam | 128-qam>	Configure max NC modulation density. ystem default value is 128-qam.
no phy-bit-mask	Reset allowable max NC modulation density to system default value.

phy-margin

Configure NC noise gate. The value is used to control the quantification of QAM data.

phy-margin <-6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6>

no phy-margin

Grammar	Description
phy-margin <-6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6>	Configure NC noise gate. The unit is 0.5dB, the system default value is 2 (1dB).
no phy-margin	Reset NC noise gate to system default value.

transmit-power

Configure transmit power between NC and CPE when communicate.

transmit-power <0dbm | -3 dbm | -7 dbm | -10 dbm | -13 dbm | -16 dbm | -19 dbm | -22 dbm | -25 dbm | -28 dbm | -31 dbm >

no transmit-power

Grammar	Description
transmit-power <0dbm | -3 dbm | -7 dbm | -10 dbm | -13 dbm | -16 dbm | -19 dbm | -22 dbm | -25 dbm | -28 dbm | -31 dbm >	Configure NC transmit power, the system default value is 0dbm.
no transmit-power	Reset NC transmit power to system default value.

service

Start/Stop NC to forward message.

service <start | stop>

Grammar	Description
service <start | stop>	Start/Stop NC to forward message. System default value is forward.

Chapter Four User Database Configuration

This chapter describes the configure method of XtendLan EOC products user database. This section includes the following configure commands:

User CPE globally unique identifier.

User traffic policing.

User comment information.

Work frequency configuration.

User enter denied configuration.

User CPE port parameter configuration.

4.1 User database configuration command

XtendLan terminal device includes 31 databases, when the uid property configuration of each entry is not 00:00:00:00:00:00, the entry is effective.

4.1.1 Command Description

Command	Description	Configuration Mode
uid	Configure user CPE GUID.	User database configuration mode
be-service-upstream	Configure be service upward traffic policing.	User database configuration mode
be-service-downstream	Configure be service downward traffic policing.	User database configuration mode
af-service-upstream	Configure af upward traffic policing.	User database configuration mode
af-service-downstream	Configure af service downward traffic policing.	User database configuration mode
ef-service-upstream	Configure ef service upward traffic policing.	User database configuration mode
ef-service-downstream	Configure ef service downward traffic policing.	User database configuration mode
remark	Configure comment information.	User database configuration mode
shutdown	User enter delied.	User database configuration mode
cpe-port	CPE port parameter configuration.	User database configuration mode

uid

Configure the CPE GUID of a user, the number can be checked on the bottom side of Xtendlan CPE equipment.

uid <user_id>

no uid

Grammar	Description
uid <user_id>	Configure the CPE UID of a user, system default is 00:00:00:00:00:00, showing no uid is configured.
no uid	Cancel the UID of the user.

service-stream

Configure the upward and downward stream parameter of be, af and ef services. The corresponding 802.1p priority value is 0-3 of be service, the corresponding 802.1p priority value is 4-5 of af service, and the corresponding 802.1p priority value is 6-7 of ef service, among XtendLan EOC products. Normally, the ef is corresponding to interactive service, af is corresponding to video traffic, be is corresponding to normal network service. Cir parameter is used to configure stream committed rate, pir parameter is used to configure stream peak rate. The following commands are for the stream policing of the three services.

be-service-upstream cir <*0-100*> pir <*0-100*>

be-service-downstream cir <*0-100*> pir <*0-100*>

af-service-upstream cir <*0-64*> pir <*0-64*>

af-service-downstream cir <*0-64*> pir <*0-64*>

ef-service-upstream cir <*0-10*> pir <*0-10*>

ef-service-downstream cir <*0-10*> pir <*0-10*>

no be-service-upstream

no be-service-downstream

no af-service-upstream

no af-service-downstream

no ef-service-upstream

no ef-service-downstream

Grammar	Description
be-service-upstream cir <*0-100*> pir <*0-100*>	Configure the upstream limit of be service, system default is 100Mbps.

be-service-downstream cir <*0-100*> pir <*0-100*>	Configure the downstream limit of be service, system default is 100Mbps.
af-service-upstream cir <*0-64*> pir <*0-64*>	Configure the upstream limit of af service, system default is 0Mbps.
af-service-downstream cir <*0-64*> pir <*0-64*>	Configure the downstream limit of af service, system default is 0Mbps.
ef-service-upstream cir <*0-10*> pir <*0-10*>	Configure the upstream limit of ef service, system default is 0Mbps.
ef-service-downstream cir <*0-10*> pir <*0-10*>	Configure the downstream limit of af service, system default is 0Mbps.
no be-service-upstream	Reset upstream limit of be service to default.
no be-service-downstream	Reset downstream limit of be service to default.
no af-service-upstream	Reset upstream limit of af service to default.
no af-service-downstream	Reset downstream limit of af service to default.
no ef-service-upstream	Reset upstream limit of ef service to default.
no ef-service-downstream	Reset downstream limit of ef service to default.

🕮Note: only pir value is effective of current XtendLan EOC product, the configured cir value is not effective. To reserve cir parameter is to make the command compatible with the chipset in the future.

remark

Configure user comment information.

remark <remark_string**>**

no remark

Grammar	Description
remark <remark_string**>**	user comment information, system default is empty string.
no remark	Delete user comment information.

shutdown

Configure user status as enter barred.

shutdown

no shutdown

Grammar	Description
shutdown	Configure user status as enter barred. System default is enter barred.
no shutdown	Reset user status to default.

cpe-port

Configure the CPE port attribute of a user. When the CPE user get online, the IP address of NC management interface is correctly configured, and the configuration of port 1 and 2 of CPE are completed, NC will transmit port configuration information to user CPE, and configure the two ports of user CPE as specified value.

cpe-port <*1-2*> enter-vlan <*vlan_id*> <enter | trunk> dot1p <*0-7*> storm-control <on | off>

no cpe-port

Grammar	Description
cpe-port <*1-2*> enter-vlan <*vlan_id*> <enter | trunk> dot1p <*0-7*> storm-control <on | off>	Configure the VLAN number, port mode, port priority and port storm control parameter of user CPE port. System default VLAN is 0, 0 indicats the configuration is not effective, user CPE works at hub mode.
no cpe-port	Reset user CPE port attribute to default.

Chapter Five SNMP Parameter Configuration

This chapter describes the configuration method of XtendLan EOC product SNMP server parameter. This chapter contain the following configuration command:

Configure community name.

Startup SNMP server.

5.1 User Database Configuration Command

XtendLan station device is embeded with SNMP server, user can use XtendLan network management system or the third network management equipment to configure and manage remotely the devices.

5.1.1 Command Description

Command	Description	Configuration Mode
snmp community	Configure user CPE global UID	User database configuration mode
snmp server	Configure the upstream control of be service	User database configuration mode

snmp community

Configure community name.

snmp community <*community_name*>

Grammar	Description
snmp community <*community_name*>	Configure community name.

snmp server

Start or stop SNMP server.

Grammar	Description
snmp server <start | stop>	Start or stop SNMP server. System default is stop.

Chapter Six Configuration Example

This chapter describes the configuration method of commonly used function for EOC products. The section includes the following configuration examples:

Configure NC to control user enter.

Configure SNMP server.

Configure the VLAN of user CPE port.

6.1 Use user enter control function

XtendLan station device can work under the work mode of “authentication” or “non-authentication”. The

difference between the two work modes is that if the CPE cannot be found UID is allowed to enter, under the work mode of authentication, the CPE is not allowed to enter, while the CPE is allowed to enter by system default parameter under the work mode of non-authentication.

6.1.1 Configuration Examples

Example: the user with the UID of 00:23:1f:10:16:ad is allowed to enter to a NC.

```
GD.LINK# config terminal                          /*enter global configuration mode*/
GD.LINK(config)# service stop                     /*stop NC*/
GD.LINK(config)# headend                          /*enter headend configuration mode*/
GD.LINK(config-headend)# authentication on        /*configure NC work under authentication mode*/
GD.LINK(config-headend)# exit                     /*return to global configuration mode*/
GD.LINK(config)# service start                    /*start NC*/
GD.LINK(config)# user 1                           /*use user database item 1 and binding UID*/
GD.LINK(config-user<01>)# uid 00:23:1f:10:16:ad   /*configure the UID attribute of the item*/
GD.LINK(config-user<01>)#end                      /*return to privileged mode*/
GD.LINK#write                                     /*save configuration to start script*/
```

6.2 Start-up SNMP Server

Gungda station device is embeded with SNMP server, user can use XtendLan network management system or the third network management system to configure and manage the equipments remotely. Before using the function, user should configure the SNMP server parameter and start SNMP service on the station device first.

6.2.1 Configuration Examples

Example: start SNMP server on a NC so as to adopt network software management.

```
GD.LINK# config terminal                          /*enter global configuration mode*/
GD.LINK(config)# interface manage-interface       /*enter interface configuration mode*/
GD.LINK(config-if)# ip-address 10.10.10.1/24      /*configure IP address*/
GD.LINK(config-if)# vlan 10                       /*manage interface enter to VLAN10*/
GD.LINK(config-if)# exit                          /*return to global configuration mode*/
GD.LINK(config)# snmp community test              /*configure SNMP community name as test*/
GD.LINK(config)# snmp server start                /*start SNMP server*/
```

GD.LINK(config-user<01>)#end /*return to privileged mode*/

GD.LINK#write /*save configuration to start script*/

6.3 Remote Configuration for the VLAN of User CPE Port

XtendLan EOC support remote (by network management software, Console port, Telnet) and user terminal (by CPE configure port) to configure CPE port attribute. Here we introduce remote configuration method. The configured CPE port attributes are saved in the user database, NC will transmit the port parameter to the user CPE when get online, CPE will compare the received the parameter with the configured data, if there is any difference, CPE will update the local configuration and restart to make effective.

When use remote configuration function, the following conditions are indispensable:

The IP address of management interface are correctly configured.

cpe-port 1、cpe-port 2 are correctly configured in the user database.

NC will transmit the configure information by management interface when the above conditions are ready.

6.3.1 Configuration Examples

Example: the user with the UID of 00:23:1f:10:16:ad is allowed to enter to a NC, and configure VLAN of port 1 as 10, VLAN of port 2 as 20.

GD.LINK# config terminal /*enter global configuration mode*/

GD.LINK(config)# service stop /*stop NC*/

GD.LINK(config)# headend /*enter headend configuration mode */

GD.LINK(config-headend)# authentication on /*configure NC under privileged mode*/

GD.LINK(config-headend)# exit /*return to global configuration mode*/

GD.LINK(config)# service start /*start NC*/

GD.LINK(config)# user 1 /*user user database item 1 and binding UID*/

GD.LINK(config-user<01>)# uid 00:23:1f:10:16:ad /*configure the UID attribute of the item*/

GD.LINK(config-user<01>)#cpe-port 1 enter-vlan 10 enter dot1p 0 storm-control on

/*enter port 1 to vlan 10, port is under enter mode, port priority is 0, storm control on*/

GD.LINK(config-user<01>)# cpe-port 2 enter-vlan 20 enter dot1p 0 storm-control on

/*enter port 2 to vlan 20, port is under enter mode, port priority is 0, storm control on*/

GD.LINK(config-user<01>)#end /*return to privileged mode*/

GD.LINK#write /*save configuration to start script*/