



# Voice Gateway 4FXS User Manual

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# Welcome to Use

## Introduction

Thanks for purchasing our integrated access device (IAD). Make sure you have read this manual before use.

Applicable device' s model:

**Voice Gateway 4FXS**

Matters related to readers

This manual is suitable for




- Project planner
- Equipment opener
- Equipment maintenance personnel

Before consulting the manual, readers need to well know

- NGN/IMS technology
- TCP/IP Agreement
- Ethernet Technology

Form 1 Prompts

Icon	Reminding Type	Reminders
------	----------------	-----------

	Reminding	It means the important traits or operation guidance
	Attention	It means it may do harm to people, or cause damage to the system, or the business data to be disconnected or lost.
	Warning	It means it can lead people to be injured seriously.

## Operation Safety Rules

- It is necessary to inspect the related power cables on a regular basis because overloaded power sockets or broken lines and connectors all are likely to trigger electric shock or fire. Please replace it immediately if there is any damage on surface.
- Make sure to use the power adapter equipped with the device. Otherwise, it will damage the device or make it operate abnormally.
- Install the product in the place where is well-ventilated, and has no high temperature and sunlight, to prevent it and other relevant components from being broken down due to overheat.
- Make communication devices avoid moisture and water. Or else, the device will operate abnormally, or even provoke other dangers for short current.
- Do not put the device on an unstable upholder.

### Declaration

Without our permission, it is prohibited to reproduce or reprint any part of this manual. We will not notify you of any alteration of this manual.

Thanks for purchasing our product! Please feel free to give us any criticism and suggestion, we will deem them as the best encouragement and support for our work.

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# Chapter I Product Introduction

The chapter focuses on introducing the networking modes and technical specifications of voice gateway.

Following are the main contents:

- 📖 Product overview
- 📖 Product features
- 📖 Networking modes
- 📖 Technical specifications
- 📖 Exterior view

## 1.1 Product Overview

This voice gateway product is a small-sized integrated access device which is researched and developed by our company independently based on the next generation network (NGN). It belongs to the terminal device of NGN access layer. This voice gateway provides the traditional voice businesses and has the functions of data and voice processing. Namely, data packet transfer, simulate voice processing and media stream transporting, as well as support on existing and future new businesses of softswitch network. This series of products are equipped with FXS (telephone interface) and Ethernet interface. Based on the international standard protocol, we supply multiple business accesses to consumers, and can satisfy users for the demands of voice, fax, data and other comprehensive business accesses.



This voice gateway product is used widely. It can be installed in many places, such as corridor, house, phone bar and so forth. And it is helpful for a family, phone bar or small-sized company in network, telephone and fax, etc.

## **1.2 Product Features**

### 1.2.1 Function characteristics

- Multiple communication protocols: it supports session initiation protocol (SIP), has advantages of strong expansibility, good compatibility and the like, and is capable of interacting with all sorts of IMS platforms.
- Perfect business supply ability: It supports distributed networking application, cooperates with IMS platform to build IP voice access network, and supports IMS value-added business, and inherits PSTN traditional business.
- Reliable security: It supports to encrypt signaling and media stream respectively and supports MD5 encryption technology. Meanwhile, it refuses illegal access and business interference.
- Firewall/NAT penetration: It adopts port mapping or special agent technology. Penetrating firewall/NAT device can be disposed in the inside of local area network.
- Flexible IP address configuration: It includes static configuration, DHCP dynamic obtainment and PPPoE number dialing obtainment.
- Simple management maintenance: It is based on WEB network management, and also supports many configuration modes of CLI, TELNET and OMC (SNMP).
- Telecommunication-level reliability: It can inspect failures and perform network management alarm; and supports network re-connection after outage and SBC dual homing. It is possible to register on the two SBCs of IMS and supports active standby switch. Power source and interface are in possession of functions of over-current protection and over-voltage protection.

### 1.2.2 Voice characteristics

- Communication protocol: SIP (RFC3261, 3GPP)
- Authentication ways: It supports authentication ways of SIP Digest, HTTP Digest and IMSAKA.
- Voice coding: G.711a/u, G.723.1 (5.3kbps/6.3kbps), G.729
- Voice quality: voice activity detection (VAD), comfort noise generation (CNG), Jitter Buffer dynamic adjustment, echo cancellation (complying with ITU-T G.165/G.168), package loss compensation technology, DTMF detection/generation, output/input gain control
- Dialing rules: It supports E.164 coding rule, custom dialing rule and automatic search agent server.
- DTMF standard: Inband audio, outband over RTP (RFC2833/SIP INFO)
- Voice business: It supports hotline telephone, call transfer (forward transfer, backward transfer) and call waiting.
- Three-party services
- Safe communication: It supports signal encryption and media encryption.
- Billing function: It supports internet access private billing and POTS-standard reversed polarity signal billing.
- QOS support: It supports port priority control, IP TOS and 802.1p/q VLAN
- Fax function: It supports T.30 fax, VBD passthrough fax and T.38 fax.
- Modem support: It supports Modem business

### 1.2.3 Network characteristics

- Network access: multiple network access modes (static IP, DHCP, PPPoE)
- Network protocols: TCP/IP, UDP/IP, ARP/RARP, ICMP, IGMP, Telnet, HTTP, DNS, DHCP, SNTP, FTP/TFTP and SNMP
- Supporting network tools: Ping, Trace Route and Telnet Client

#### 1.2.4 Protocol standards

- IEEE 802.3 /802.3u 10 Base T/100Base TX
- Main G.711A/U, G.723-r63, G.729 voice codec, SIP RFC3261IAX2 (Inter-Asterisk-eXchange V2)
- TCP/IP: transmission control protocol/internet protocol.
- RTP: real-time transmission protocol
- RTCP: real-time transmission control protocol
- VAD/CNG: voice activity detection/comfort noise generation
- DHCP: dynamic host configuration protocol
- PPPoE: Point-to-point protocol over Ethernet
- DNS: domain name service
- HTTP: Hyper text transfer protocol
- FTP/TFTP: File transfer protocol/Trivial file transfer protocol
- UDP: User data protocol

#### 1.2.5 Management maintenance

- Telephone configuration: It supports to inquire and set the relevant configuration information by a simulate telephone.
- Network configuration: It supports to upgrade the configuration by ways of HTTP, TELNET and CLI
- User right: It supports to carry out level-to-level administration for users and administrators.
- Network management: It supports OMC (SNMP) network management.
- Backup restoration: It supports to export and import the configured files.
- Expansion function: Plate loading, device-level stack function

#### 1.2.6 Working environment

- Power input: 150 ~ 310V AC 47/63Hz
- Environment temperature: -40 ~ 70°C

- Relative humidity: 5 ~ 90% RH

### 1.3 Networking Mode

The next generation network (NGN) is developing and perfecting based on the soft switch. TP-64S in the access layer is used in extensive fields, including network access, telephone, fax and other demands of families, phone bars or small-sized companies.

1. Connected in the local area network with dynamic mode or static IP mode.
  - 1 ) It is applicable to the companies or users built interior local area network;
  - 2 ) Voice gateway WAN port is connected with the hub or switch;
  - 3 ) WAN port adopts dynamic IP (DHCP) mode or static IP mode according to environment of local area network.

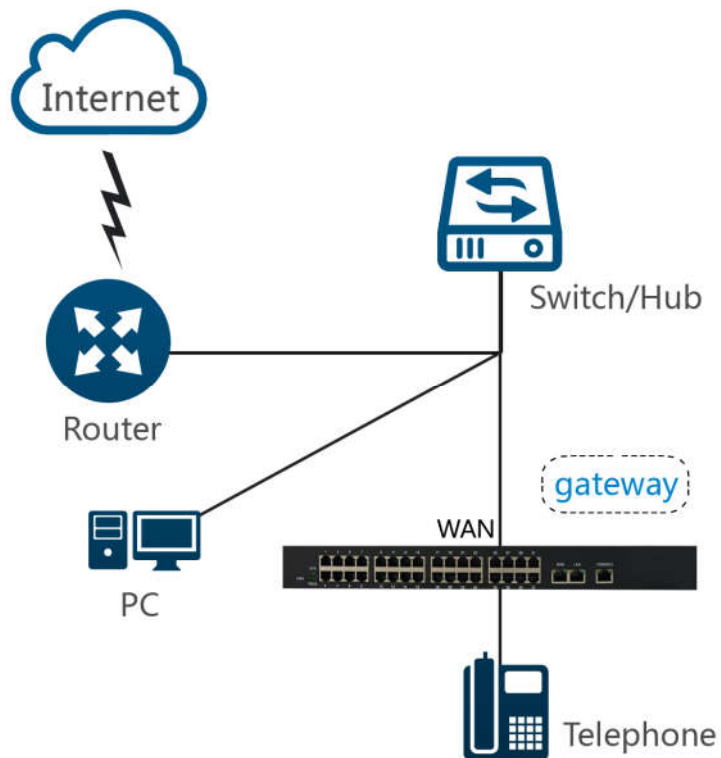


Figure 1-1 Connected in the Local Area Network with Dynamic Mode or Static IP Mode

2. As a proxy server, it is responsible for dial-up access.
  - 1 ) Voice gateway WAN port is directly connected with xDSL(Cable) Modem.
  - 2 ) As a proxy server, TP-64S is responsible for proxy access.

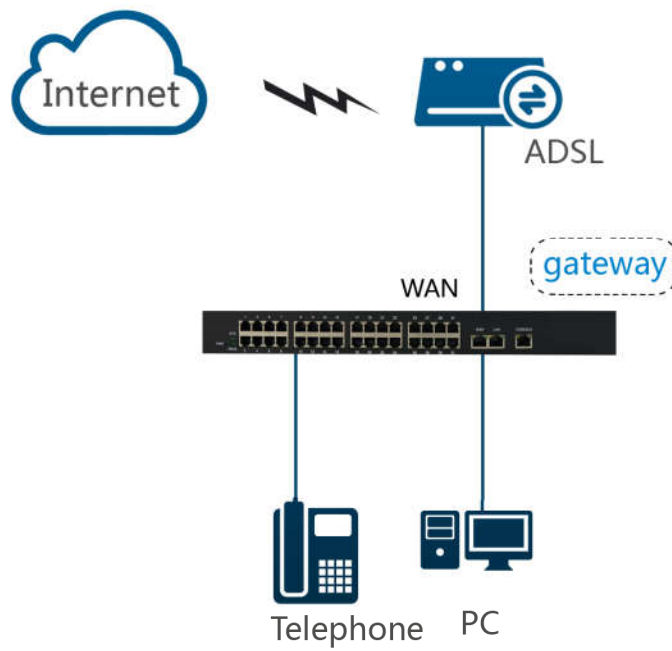


Figure 1-2 Responsible for Dial-up Access as A Proxy Server

## 1.4 Technical Specifications

Item	4FXS
Size (mm)	160×115×37mm

<b>W×H×D</b>		
<b>Weight</b>		0.8kg
<b>Max Power Consumption</b>		11w
<b>Power Source</b>		DC12V power adaptor
<b>Device Interface</b>	<b>10/100M RJ45</b>	10/100M RJ45
	<b>10/100M RJ45</b>	10/100M RJ45
	<b>Network management interface</b>	1 ↑ RS232 ( RJ45 )
<b>Voice Port</b>		4
<b>Interface Type</b>		4FXS
<b>Work Temperature</b>		-10°C~55°C
<b>Storage Temperature</b>		-10°C~55°C
<b>Humidity</b>		0 ~ 95%
<b>(Non-condensed)</b>		

## 1.5 Device View



Figure 1-3 4FXS voice gateway

# Chapter II Product Installation

This chapter focuses on deliberately explaining the matters with respect to installation preparation, fixing and cable connection of voice gateway. It mainly includes:

- 📖 Installation preparation
- 📖 Device fixing
- 📖 Cable connection
- 📖 Configuration environment establishment

## 2.1 Installation Preparation

Before voice gateway installation, make sure all components and conditions are complete.

### 2.1.1 Open-box Inspection

Open the box and inspect whether stuffs in the box are consistent with the list. If not, please directly contact us.

### 2.1.2 Installation Precautions

Voice gateway can be installed on the desk or wall. Before installation, you are required to pay attention to:

- The place where gateway will be installed should meet the conditions to connect the device with the external sites (such as: power line, network line, PC machine,

etc.). AC power socket should be single-phase three-core power socket, and ensure the earth line is reliably grounded.

- Where installation is executed should be well-ventilated, to help the device to dissipate heat (the suitable environment is -10°C ~ 55°C).
- Installation place should be free from water, moisture and thunder, etc. (the suitable humidity is 10% ~ 95%).

## 2.2 Device Fixing

This section introduces various installation modes of voice gateway to help users choose what they need in accordance with their demands.




### 2.2.1 Plan Fixing

Take out four rubber mats equipped with voice gateway and clip them into four small holes on the device' s base plate, and then put the device on a stable and flat desk, and make sure right and left sides have a good ventilation.

 **Reminding: Ensure voice gateway to ventilate well at two sides; and prohibit to place any object on it.**

## Chapter III Rapid Configuration

This chapter mainly introduces how to simply configure SIP business function for voice gateway by WEB website, and also simply introduces gateway' s other two login methods, Telnet and Console. The aim is to let customers rapidly configure voice gateway in special circumstances. Main contents include:

-  Cable connecting, PC address modification
-  Network access settings
-  Rapid configuration



Voice gateway offers users an imaging and simple-operation WEB conversation interface, so users are able to configure all functions of voice gateway just on the common web browser without installing a special software, which is helpful for consumers to lessen business opening cycle, quickly position failure and shorten failure restoration time, so as to satisfy users and save operation and maintenance cost.

### 3.1 Preparation before Configuration

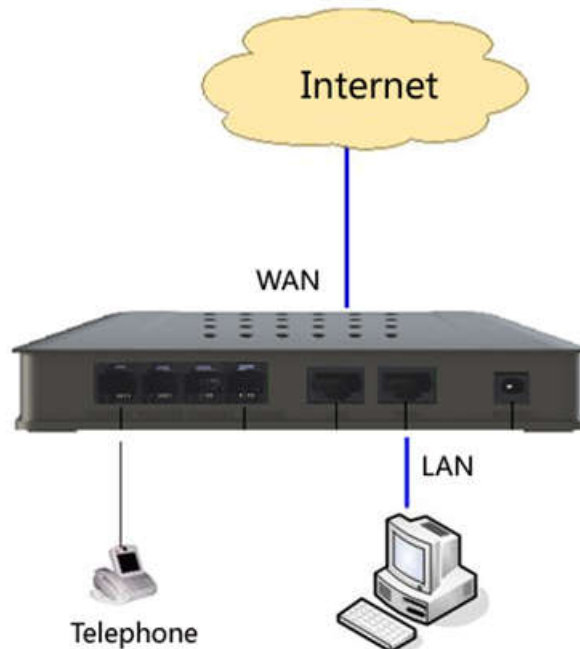
Before configuring voice gateway, you are required to first confirm:

1. Network access method:
2. Voice gateway' s WAN port supports PPPoE dialing, dynamic IP address and static IP address.
3. SIP server address, port, account and password.

For example: Voice gateway data configuration information (enter the italic information pursuant to the practical requirements).

IAD gateway IP:        *192.169.0.1*        //static IP address/  
IAD subnet mask:        *255.255.255.0*  
Routing gateway address: *192.168.0.1*  
SIP server address:        *192.168.0.10*  
SIP server port:        *5060*  
SIP account:        *6400~6407*  
SIP account password:    *123456*

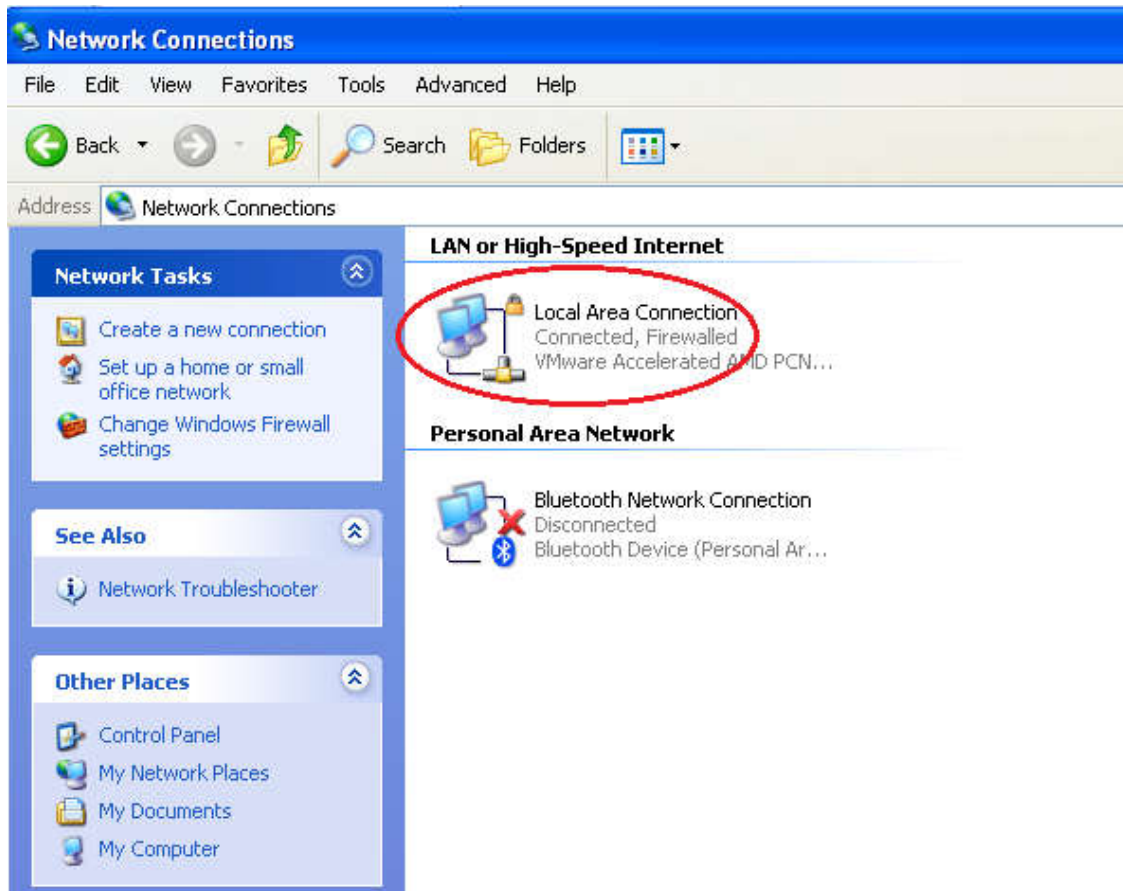
## 3.2 Cable Connecting



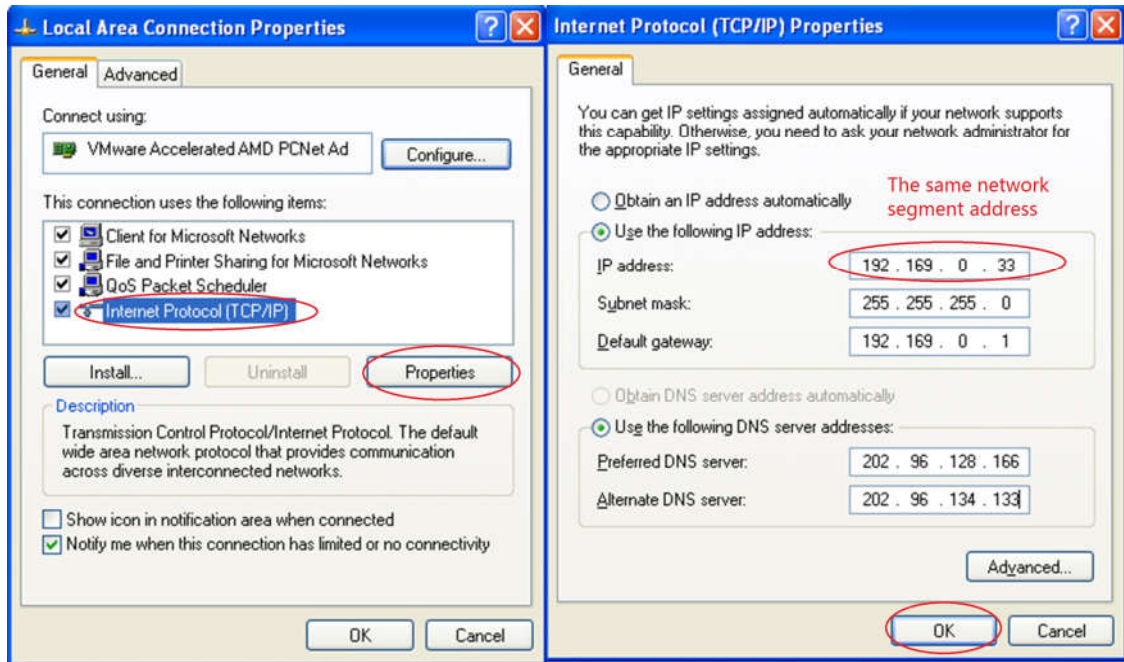
1. Connect the device power cord;
2. Link the upward network cable with IAD' s WAN port;
3. Connect voice gateway' s LAN port with PC, which is used to carry out management;
4. Connect RJ-11 port with user' s telephone.

## 3.3 PC' s IP Address Modification

Connect computer with IAD' s LAN port, and set its IP address as 192.169.0.2~192.169.0.254, subnet mask as 255.255.255.0, and gateway as 192.169.0.1. It is fine not to fill in DNS or keep the initial value.

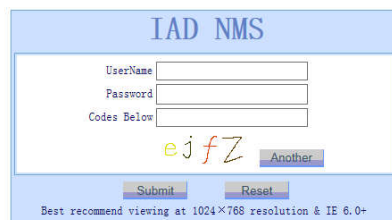


1. Open network connection, right click "local connection" , click property;
2. Open local connection property, choose "Internet protocol (TCP/IP)" , click property (R);
3. Choose the option of "Use of the following IP address" , modify PC' s IP address according to the practical needs.



### 3.4 Voice Gateway Login

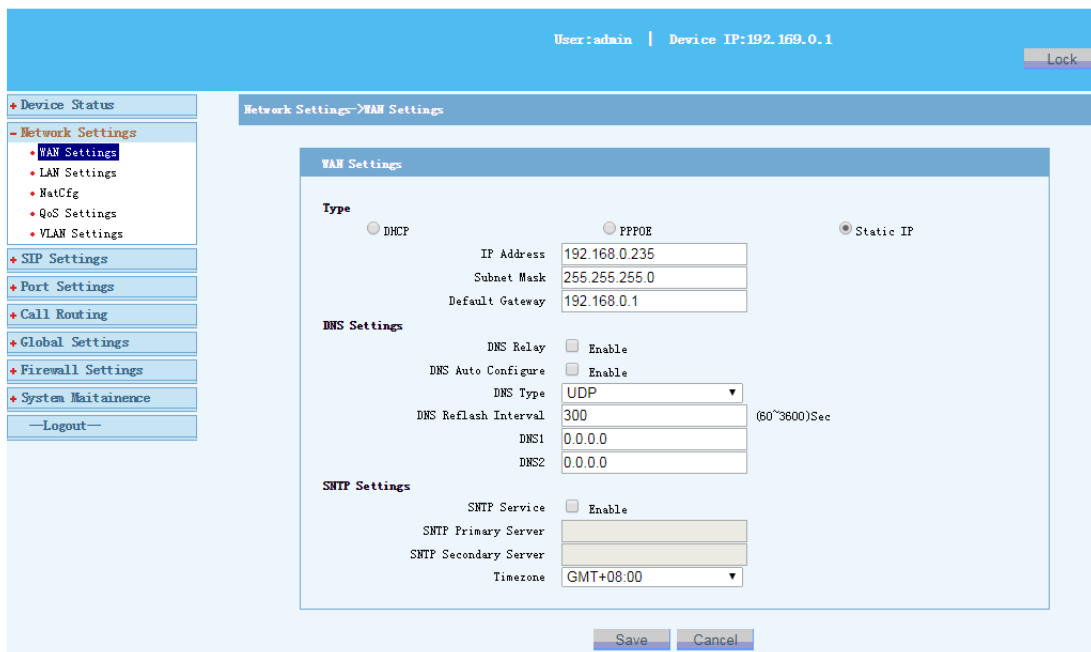
Open IE browser and input LAN port' s default IP address (IP 192.169.0.1 or 192.169.0.235) in address column.



Enter username as *admin* and password as *psw.iad* (note the capital and small letters), then import security code. It will immediately skip to gateway main interface once input right.



### 3.5 Network Settings



Choose "network settings → WAN port configuration" and choose "static IP", fill in the relevant parameters such as gateway IP address, subnet mask, exit gateway,

and then click to save.

Explanations:

- Choosing “DHCP to obtain IP” needs there is a DHCP server in the network;
- Choosing “PPPoE dialing” needs to fill in the username and password that broadband supplier provide.

## 3.6 SIP Setting

SIP Settings->Basic Settings

**SIP Public Parameter Settings**

NOTE: When SRV is enable, the primary or backup servers will be ignored. SRV domain is named with a prefix of \_sip.\_udp.

SRV Mode  Enable

SRV Domain

Primary Server Domain

Primary Server IP

Primary Server Port

Backup Server  Enable

Backup Server Domain

Backup Server IP

Backup Server Port

**SIP Local Settings**

Local Domain

Local SIP Port  (Option)

Registration Interval  (Option) (60~3600Sec)

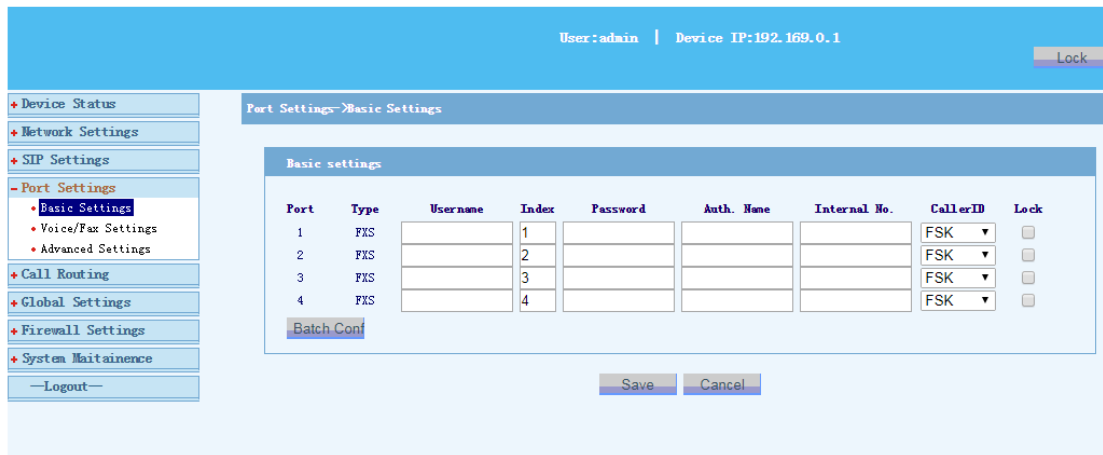
Save Cancel

Click “SIP settings → basic settings” that is in the left column, complete the main server’ s information and port in the basic settings, complete the local domain name in the local SIP parameter settings, and then click to save.

Explanations: SIP parameters are conditional upon the soft switch. Primary server port is 5060, and local domain name is SIP domain name or server IP.

## 3.7 Port Setting

Voice gateway is registered based on the port. Every port needs setting account and security password.



Click “port settings → basic settings” that is in the left column, username, password and Auth. Name in the basic settings, and then click to save.

Explanations: SIP parameters are conditional upon the soft switch. Usually, username is the Auth. Name.

### 3.8 Device status

You can check corresponding port's registration status after finishing the IAD configuration

User: admin | Device IP: 192.169.0.1

Lock

Device Status

- System Information
- Parts Status**
- WAN Status
- Call Statistics

Network Settings

SIP Settings

Port Settings

Call Routing

Global Settings

Firewall Settings

System Maintenance

Logout

Device Status -> Parts Status

Refresh AutoRefresh 1 Sec

No.	Phone No.	Act St.	Reg St.	Hook St.	Conn St.	Sig St.
1		Inactive		OnHook	Idle	Idle
2		Inactive		OnHook	Idle	Idle
3		Inactive		OnHook	Idle	Idle
4		Inactive		OnHook	Idle	Idle

Note: If one port shows “unregistered”, please check settings of corresponding port’s parameters, and consult SIP soft switch platform.

### 3.9 Device Reboot

Click “system maintenance → Device reboot” that is in the left column.

User: admin | Device IP: 192.169.0.1

Lock

Device Status

Network Settings

SIP Settings

Port Settings

Call Routing

Global Settings

Firewall Settings

**System Maintenance**

- User Management
- Software Update
- Config Backup
- Default Settings
- Device Reboot**
- System Log

Logout

System Maintenance -> Device Reboot

Reboot the device

Click reboot button to reboot the device.

Reboot

After reboot, use IE browser to log in device once more via LAN IP, check device status, and confirm the operating WAN port information in the status inquiry and confirm registration status in the user port status.

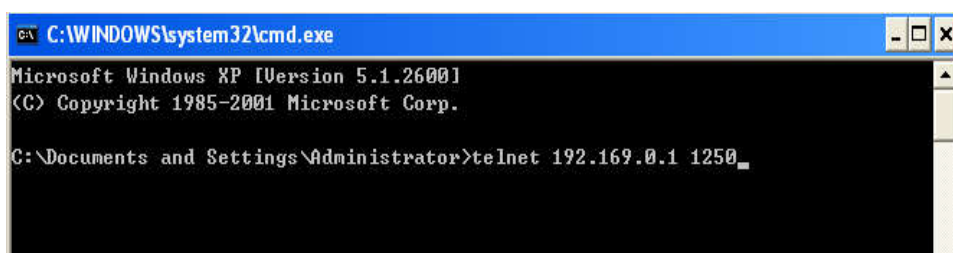


## 3.10 Telnet Login

Through Telnet to log the device in the configuration interface. (after the device is energized, LAN port' s default IP is 192.169.0.1 and subnet mask is 255.255.255.0). Carry out inband management to the device via command line configuration.

This device can Telnet to the configuration interface by LAN port and WAN port Telnet. But WAN port' s IP address perhaps is dynamically acquired via DHCP and PPPoE. So it may not be convenient for TELNET to visit. Therefore, it is suggested that users go to the configuration interface from LAN port TELNET. Entering TELNET needs to:

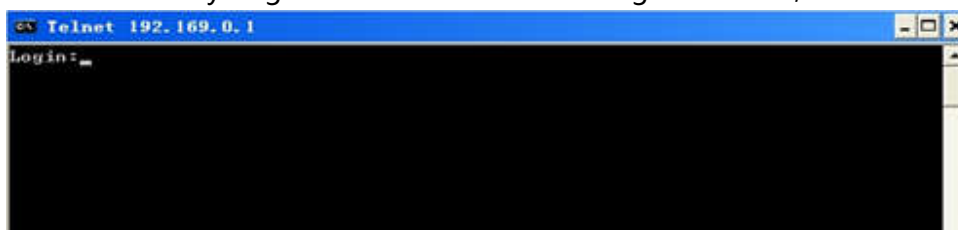
1. find a crossover cable or through line;
2. Use a cable to link PC machine' s network card and LAN port together. If LAN port' s LINK light flashes, it means PC machine has been connected with the Device;
3. Modify/add IP address of PC machine' s network card to be 192.169.0.x (X is an integer more than 2 and less than 254), and mask to be 255.255.255.0;
4. Open a command window on PC machine, and then  
[click WINDOWS' s <start> menu - >click <operation> to open the operation window, then enter cmd or command in <opening> drop-down box, finally, click to determine.]
5. execute the following command in command line' s window, refer to telnet 192.169.0.1 1250 in the following image:



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

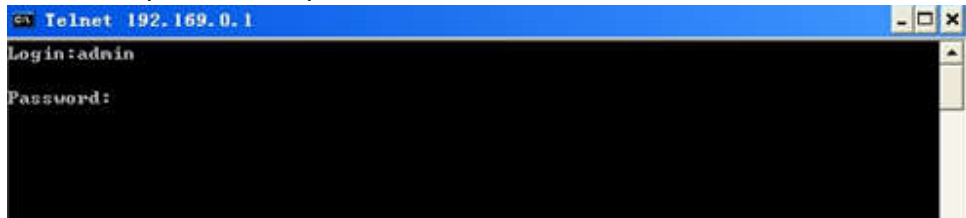
C:\Documents and Settings\Administrator>telnet 192.169.0.1 1250_
```

6. click enter key to go to the device' s telnet login interface, see below:

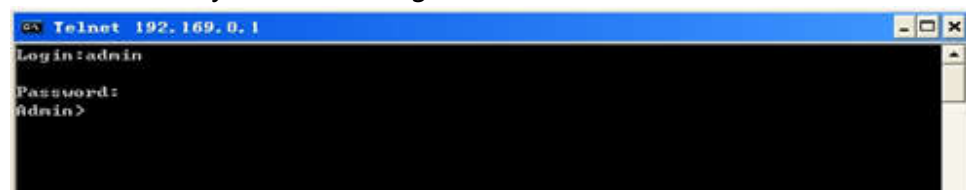


```
Telnet 192.169.0.1
Login: _
```

7. Input correct username and password, the default username is admin, and default password is psw.iad.



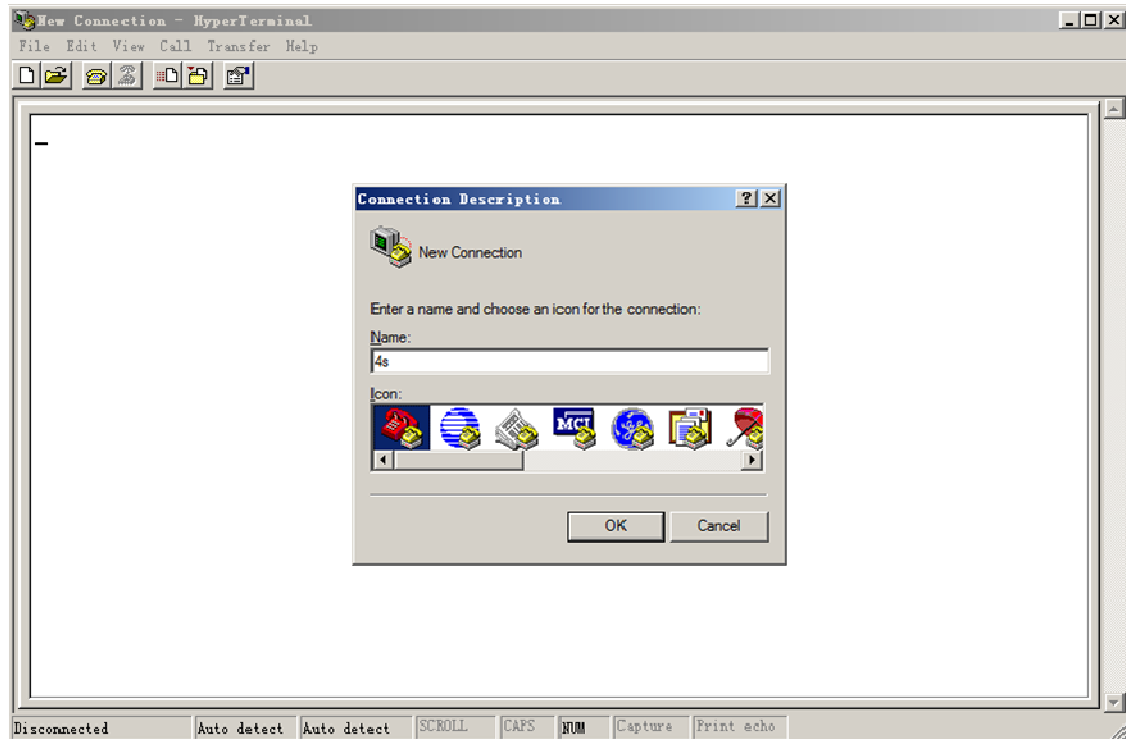
8. Click enter key to enter configuration interface.



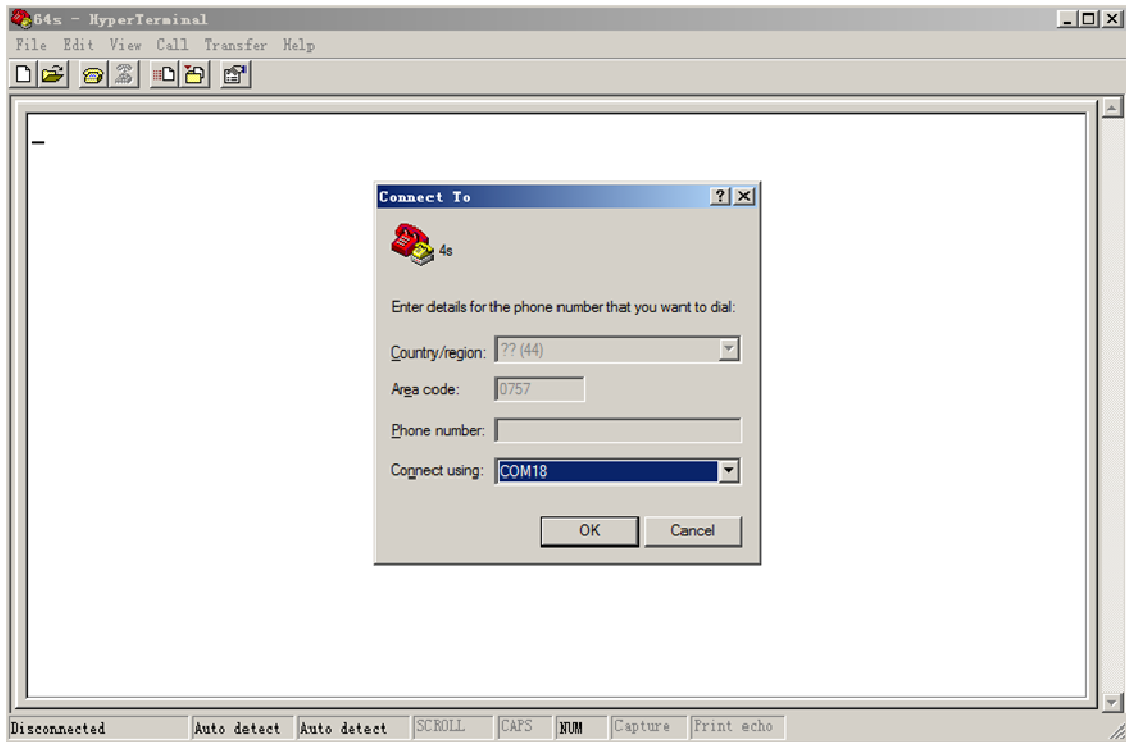
### 3.11 Super Terminal Login

Voice gateway can configure the device by CONSOLE port. Connect one end of serial port line to the device' s CONSOLE control port, and another end to any serial port of the computer. Then follow the sequences of start menu - >procedures - >appendix - >communication - >super terminal to start up super terminal. If no any super terminal is installed, please install it from control panel. For specific matters, please refer to Windows.

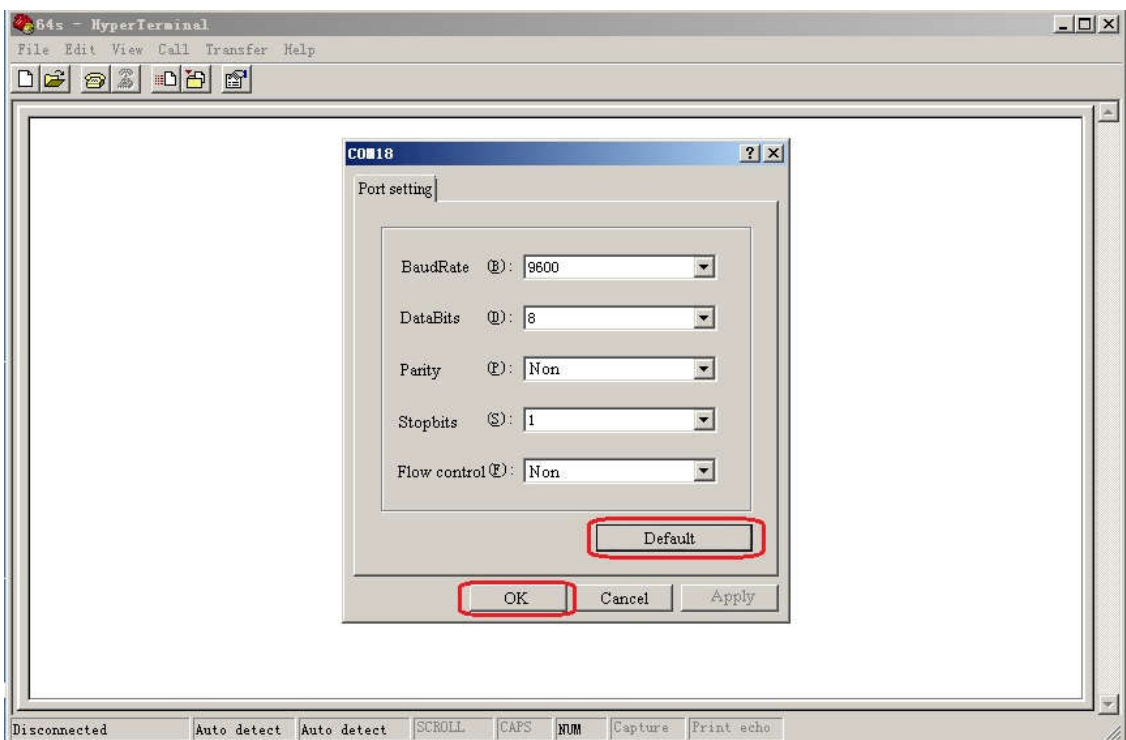
1. After the super terminal is turned on, a "link description" will appear, requiring to enter a name and choose icon for this link, shown as follows.



2. Import a link name, button enter key or use mouse to click "confirmation" to go to the next. Then, a "connection to" dialog box will appear. In "use at the time of connection" drop-down menu, make sure the chosen port must be consistent with serial port of PC machine linked with device, as shown in the following image.



3. Press enter key or click "confirmation" button to go to the next, and then set the port property.

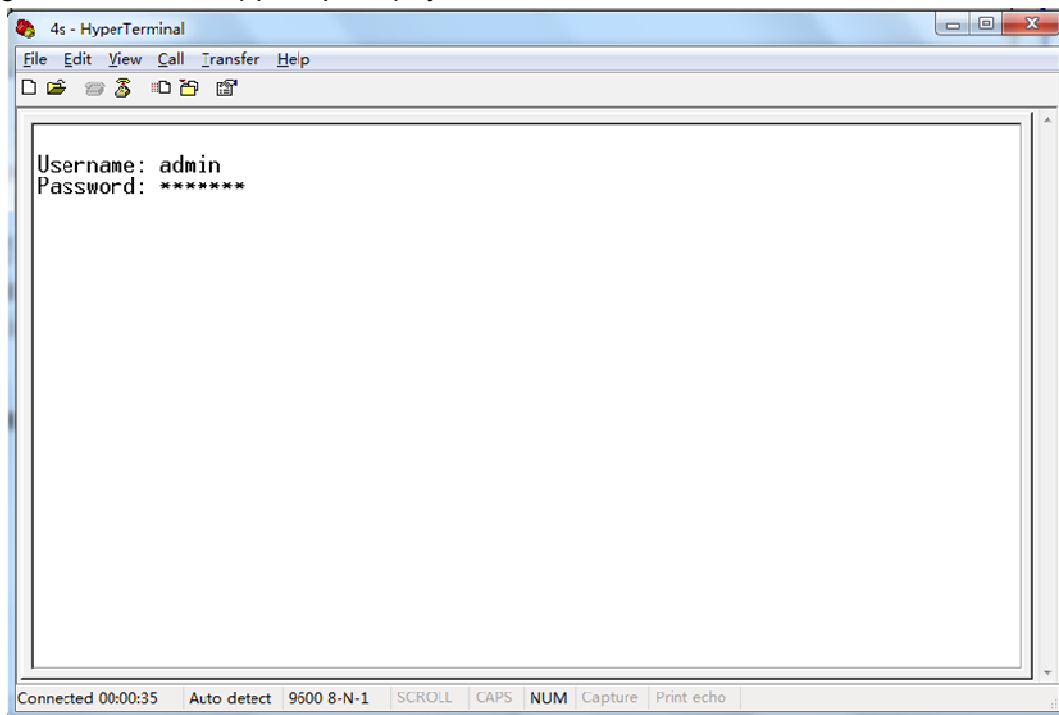


Perform settings as follows for port parameters:

- Bits for second: 9600
- Data bits: 8
- Odd-even check: No
- Stop bit: 1
- Data flow control: No

Press enter key or use mouse to click "confirmation" .

4. Once the device is started up (it will automatically start up once energized), user login interface will appear promptly.



5. Follow the system reminders and import correct username and password to log in.

If it is your first time to log in, please use the default account. Default username is admin, and default password is psw.iad. The detailed settings of the command are set forth in the later instructions.

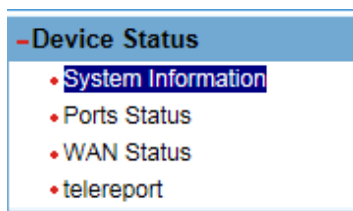
**Note:** draw attention to capital and small letters of username and password when performing login.

# Chapter IV Detailed Configuration

This chapter has a detailed introduction to all configurations on IAD' s WEB web. It mainly includes:

- 📖 System information
- 📖 Ports status
- 📖 WAN status
- 📖 telereport

## 4.1 Device Status



Here you are able to inquire device' s every status, including device model, operation time, software and hardware versions, WAN' s status information, LAN port information status, user port status and traffic statistic information, etc.

### 4.1.1 System Information

Click "Device Status" , and then click "System information" , the following information will appear in the system.

The screenshot shows the 'Device Status > System Information' page. The top navigation bar includes 'User: admin | Device IP: 192.169.0.1' and a 'Lock' button. A left sidebar contains a menu with 'Device Status' expanded, showing 'System Information' (selected), 'Ports Status', 'WAN Status', and 'Call Statistics'. Below this are other settings categories like 'Network Settings', 'SIP Settings', 'Port Settings', 'Call Routing', 'Global Settings', 'Firewall Settings', 'System Maintenance', and 'Logout'. The main content area has a 'Refresh' button and an 'AutoRefresh 1 Sec' dropdown. It contains two tables:

Product Information	
Product Model	IAD 4FXS
Hardware Version	V1.0
Software Version	V1.0
Compile Time	2015-10-12 17:36:41

Running Information	
Current Time	2000-01-01 08:19:32
Running Time	0 Days 00 Hour 19 Min 33 Sec

## 4.1.2 Ports Status

Click “Device status” , then click “Ports status” , the following information will appear in the system.

The screenshot shows the 'Device Status > Ports Status' page. The top navigation bar includes 'User: admin | Device IP: 192.169.0.1' and a 'Lock' button. A left sidebar contains a menu with 'Device Status' expanded, showing 'System Information', 'Ports Status' (selected), 'WAN Status', and 'Call Statistics'. Below this are other settings categories like 'Network Settings', 'SIP Settings', 'Port Settings', 'Call Routing', 'Global Settings', 'Firewall Settings', 'System Maintenance', and 'Logout'. The main content area has a 'Refresh' button and an 'AutoRefresh 1 Sec' dropdown. It contains a table with the following data:

No.	Phone No.	Act St.	Reg St.	Hook St.	Comm St.	Sig St.
1		Inactive		Onhook	Idle	Idle
2		Inactive		Onhook	Idle	Idle
3		Inactive		Onhook	Idle	Idle
4		Inactive		Onhook	Idle	Idle

### Explanations:

It is essential to review the port' s corresponding number and registered status of SIP business.

The current statuses include idleness, waiting for dialing, ringback tone, conversation, busy tone and ringing.

## 4.1.3 WAN Status

The screenshot shows the web interface for a Voice Gateway 4FXS. At the top, the user is identified as 'admin' and the device IP is '192.168.0.1'. A 'Lock' button is visible in the top right corner. On the left side, there is a navigation menu with the following items: Device Status (expanded), System Information, Ports Status, WAN Status (highlighted), Call Statistics, Network Settings, SIP Settings, Port Settings, Call Routing, Global Settings, Firewall Settings, System Maintenance, and a Logout button.

The main content area is titled 'Device Status -> WAN Status'. It includes a 'Refresh' button and an 'Auto Refresh 1 Sec' dropdown menu. Below this, there are two information panels:

**WAN Information**

Physical Connect Status	NOT CONNECTED
Connect Status	NOT CONNECTED
MAC Address	3c:d1:6e:0a:67:dd
Connect Type	Static IP
IP Address	192.168.0.235
Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS Relay	Disable
DNS1	0.0.0.0
DNS2	0.0.0.0

**LAN Information**

Physical Connect Status	CONNECTED
MAC Address	3c:d1:6e:0a:67:de
IP Address	192.168.0.1
Mask	255.255.255.0



## 4.1.4 Call Statistics

Refresh Auto Refresh 1 Sec ▾

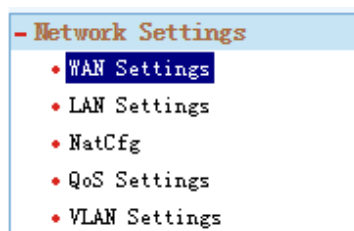
WAN Information	
Physical Connect Status	NOT CONNECTED
Connect Status	NOT CONNECTED
MAC Address	3c:d1:6e:0a:67:dd
Connect Type	Static IP
IP Address	192.168.0.235
Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS Relay	Disable
DNS1	0.0.0.0
DNS2	0.0.0.0

LAN Information	
Physical Connect Status	CONNECTED
MAC Address	3c:d1:6e:0a:67:de
IP Address	192.168.0.1
Mask	255.255.255.0

Explanations: Traffic statistics cover the real-time state of current activated port, conversation time and other information.

## 4.2 Network Settings



Network settings include:

WAN Settings: It refers to the upward access network port;

LAN Settings: It refers to the lower access network port including DHCP configuration;

NATCfg: It refers to network address transfer including DMZ configuration;

QoS Settings: It refers to quality of network service.

## VLAN Settings

## 4.2.1 WAN Settings

After entering WEB interface, choose "network settings >> WAN settings". This device can be get access to via three network access methods.

The screenshot shows the WAN Settings configuration page. The 'Type' section has three radio buttons: DHCP, PPPoE, and Static IP. The 'Static IP' radio button is selected. Below it, there are input fields for IP Address (192.168.0.235), Subnet Mask (255.255.255.0), and Default Gateway (192.168.0.1). The 'DNS Settings' section includes checkboxes for DNS Relay and DNS Auto Configure (both unchecked), a dropdown for DNS Type (UDP), and a text input for DNS Refresh Interval (300) with a unit of (60~3600)Sec. Below that are input fields for DNS1 (0.0.0.0) and DNS2 (0.0.0.0). The 'SMTP Settings' section has a checkbox for SMTP Service (unchecked), input fields for SMTP Primary and Secondary Servers, and a dropdown for Timezone (GMT+08:00). At the bottom right, there are 'Save' and 'Cancel' buttons.

Explanations:

## 1. Choose IP type

- Use DHCP to acquire IP
- By "online pattern" to open "DHCP to acquire IP", then click to save.
- PPPoE dialing, input account and password and then click to save.

This close-up shows the 'Type' section where the 'PPPoE' radio button is selected. Below the radio buttons are four input fields: Username, Password, MTU (with the value 1492), and Keepalive (with the value 60) Sec.

## 2. Static IP

Enter IP address, subnet mask and default gateway, and then click to save.

<b>Type</b>	
<input type="radio"/> DHCP	<input type="radio"/> PPPOE
	<input checked="" type="radio"/> Static IP
IP Address	192.168.0.235
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1

### 3. DNS settings

DNS service, Use start, choice of DNS type, DNS refresh interval (usually it defaults 5 minutes), and prior DNS 1and standby DNS 2.

<b>DNS Settings</b>	
DNS Relay	<input type="checkbox"/> Enable
DNS Auto Configure	<input type="checkbox"/> Enable
DNS Type	UDP
DNS Reflash Interval	300 (60~3600)Sec
DNS1	0.0.0.0
DNS2	0.0.0.0

4. SNTP settings coincide with network time protocol, and automatically synchronize with the device time.


<b>SNTP Settings</b>	
SNTP Service	<input type="checkbox"/> Enable
SNTP Primary Server	
SNTP Secondary Server	
Timezone	GMT+08:00

## 4.2.2 LAN Settings

### 4.2.2.1 LAN port settings

Open "network settings >> LAN port settings" to configure LAN port' s IP address.

<b>LAN Port Settings</b>	
IP Address	192.169.0.1
Subnet Mask	255.255.255.0

 : LAN port' s default IP is 192.169.0.1 / 255.255.255.0. It is suggested not to make any modification but a special case! Especially ensure not to repeat LAN port IP network segment and WAN port IP segment!

DHCP Settings	
DHCP Server	<input type="checkbox"/> Enable
IP Pool Start Address	192.169.0.2
IP Pool End Address	192.169.0.254
Lease Interval	7200
Default DNS	202.96.128.68
Default Gateway	192.169.0.1

#### Explanations:

- In this device there is a DHCP server, which is defaulted not to start using.
- IP pool start/ IP end address cessation: It refers to DHCP server automatically allocates IP' s start/ IP end addresses cessation. To full extent it could have 254 addresses.
- Lease Interval: It refers to the service time that terminal acquires an IP address, defaulting to be 7200 seconds.
- Default DNS (optional), input it in the DNS server offered by ISP. If there is any question, please consult ISP.
- Default gateway (optional), it is suggested to fill in LAN port' s IP address or in designated exit gateway IP.

**✎ : If LAN port IP parameters (including IP address, subnet mask) are altered, make sure IP pool address set in DHCP parameters is in the network segment where new LAN port IP is also in, and restart IAD. In order to make DHCP server display its functions, TCP/IP protocol of each computer in local area network must be set as "automatically acquired IP address" .**

### 4.2.3 QOS Settings

Network service quality (QOS), voice gateway supports prior marks of two-layer and

three-layer data frames, to ensure conversation quality of IP voice.

Layer2 Setting	
Signalling VLAN Enable	<input type="checkbox"/> Enable
Signalling VLAN ID	<input type="text" value="0"/>
Signalling VLAN Priority Level	<input type="text" value="0"/>
Media VLAN Enable	<input type="checkbox"/> Enable
Media VLAN ID	<input type="text" value="0"/>
Media VLAN Priority Level	<input type="text" value="0"/>

Explanations:

- Layer2 settings: VLAN ID is the tag based on 802.1Q.
- ID value ranges from 1~4096.
- VLAN prior level is 802.1P. It ranges from 0~7.

**Note: Before start, please firstly determine whether the entire transit network backs up VLAN or not. Otherwise, it will contribute to some faults, such as IP disconnection, DNS analysis failure, registration failure and so on.**

Layer3 Setting	
TOS Mode	<input type="checkbox"/> Enable
TOS Value	<input type="text" value="0"/>
IP Precedence	<input type="text" value="0"/>
DSCP Mode	<input type="checkbox"/> Enable
DSCP Value	<input type="text" value="0"/>

Explanations:

- Either TOS or DSCP, only one mode can be adopted;
- TOS mode is not turned on by default;
- TOS value is 5 by default;
- IP Precedence is 5 by default;
- DSCP mode is not opened by default;
- DSCP value is 0 by default.

## 4.2.4 NatCfg

This device support NAT function, can visit network via LAN.

Network Settings->NatCfg

**NAT Settings**

NAT Function  Enable

DMZ Host

**Port Mapping**

No.	Proto.	Local IP	Int. Port	Ex. Port	Operation
<input type="button" value="Add"/>					

## 4.3 SIP Settings

**- SIP Settings**

- Basic Settings
- Advanced Settings

SIP parameters are set pursuant to soft switch.

The service provider usually has set the server' s parameters beforehand. In case you need to set them by yourself, please inquire the address, account and password from the facilitator to register the server.

## 4.3.1 Basic Settings

SIP Public Parameter Settings	
<b>NOTE:</b> When SRV is enable, the primary or backup servers will be ignored. SRV domain is named with a prefix of _sip_udp.	
SRV Mode	<input type="checkbox"/> Enable
SRV Domain	<input type="text"/>
Primary Server Domain	<input type="text"/>
Primary Server IP	0.0.0.0
Primary Server Port	5060
Backup Server	<input type="checkbox"/> Enable
Backup Server Domain	<input type="text"/>
Backup Server IP	0.0.0.0
Backup Server Port	5060

- SRV mode: It needs opening when DNS server adopts SRV-type DNS analysis;
- SRV domain: When it is the SRV-type DNS analysis, SRV domain name needs to be configured. Domain name starts with \_sip\_udp. For example, if the allocated domain name is sbc.chinamobile.com, the configured one will be \_sip\_udp.sbc.chinamobile.com.

### Explanations:

- Primary server: It supports domain name or IP address form;
- Primary server port: It defaults to be 5060, but to fill in practically;
- Backup server: To fill in it as per the main server' s parameters;
- This device can support backup server: if there is something wrong with the primary server, it will automatically register into the backup server. (at this time please open heartbeat switch).
- If the primary/backup servers adopt domain name mode, please open DNS configured under WAN port, and correctly fill in DNS address.

SIP Local Settings	
Local Domain	<input type="text"/>
Local SIP Port	5060 (Option)
Registration Interval	600 (Option) (60~3600Sec)

### Explanations:

- Local domain: It is usually the same as the registered server;
- Local SIP port: It is defaulted to be 5060, and this device needs restarting if it has any modification;
- Registration Interval: It refers to the interval that IAD sends online information to SIP server, 60 to 3600 seconds are available, and factory default one is 600 seconds.

## 4.3.2 Advanced Settings

This voice gateway supports multiple soft switch systems. The specific parameters are conditional on soft switch.

SIP Settings→Advanced Settings

<b>NAT</b>		NAT STUN <input type="checkbox"/> Enable	NAT Keepalive Interval <input type="text" value="5"/> Seconds
<b>Heartbeat</b>		Heartbeat Switch <input type="checkbox"/> Enable	Heartbeat Interval <input type="text" value="16"/> Seconds
			Heartbeat Threshold <input type="text" value="3"/>
<b>Register</b>		Register Switch Mode <input type="text" value="By Register"/> ▼	Register Flow Limit <input type="text" value="20"/> P/s
		Switch To Backup SBC <input checked="" type="checkbox"/> Enable	Switch Back To Primary SBC <input checked="" type="checkbox"/> Enable
		SBC Switching <input type="text" value="Switch"/>	
<b>Session</b>		Session Renew <input type="checkbox"/> Enable	Session Renew Interval <input type="text" value="360"/> Seconds
			Session Minimum Time <input type="text" value="90"/> Seconds
		Register Authentication <input type="checkbox"/> Enable	SIP URI With User Param <input checked="" type="checkbox"/> Enable
		PRACK <input checked="" type="checkbox"/> Enable	URI Format <input type="text" value="SIP"/> ▼
		Offline Interval <input type="text" value="30"/> Seconds	
		CallerID Mode <input header"="" type="text" value="From"/> ▼	
		Fax Bypass Parameter <input type="text" value="fax/modem"/> ▼	
		Phone Number Format <input type="text" value="Normal"/> ▼	
		User-Agent Value <input type="text"/>	
		Blind Transfer Mode <input type="text" value="Normal"/> ▼	
		Don't Support Reinvite <input type="checkbox"/> Enable	
		Always Add SDP <input type="checkbox"/> Enable	
		Send Echo Parameter <input type="checkbox"/> Enable	
		Caller Transfer <input type="checkbox"/> Enable	
		Proxy Authentication Mode <input type="text" value="General"/> ▼	
		183 P-Early-Media <input type="text" value="Disable"/> ▼	
		INVITE P-EarlyMedia <input type="text" value="Disable"/> ▼	
		Media Play Mode <input type="text" value="Platform"/> ▼	
		replace from <input type="checkbox"/> Enable	



### Explanations:

1. 1. NAT: Usually, IAD in intranet is in need of turning on NAT penetration. It can normally communicate with IAD once used in SIP platform;

- NAT Stun: It defaults to being open;
- NAT keepalive Interval: It is 5 seconds by default;

### 2. Heartbeat

- Heartbeat switch: It is set to send heartbeat parameters to platform, not turned on by default;
- Heartbeat Interval: It refers to the cycle that IAD sends heartbeat packet in a set time. Unit is second.
- Heartbeat Threshold: It refers to the quantity of these heartbeat packets without response which are sent out by IAD. Unit is piece.

### 3. Register

- Registered switch mode, the option means use option message as judgment way of SBC switch. The register does not use option message mode, with the number of success or failure as a judgment way;
- Register Flow Limit, It can set the number of packets per second
- Be allowed to fall back to backup SBC
- Be allowed to fall back to the primary SBC
- To manually switch SBC

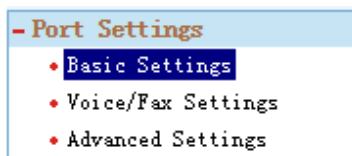
### 4. Session

- Session Update: It is closed by default;
- Session Update Interval: It means the interval for session update;  
Initial registration with authorization: It needs clicking when platform supports SIP DIGIST notarization. While it needs closing when platform supports HTTP digist notarization. Close is defaulted.
- SIP URI with User parameters: It refers to the configured parameters connected with platform.
- Offline interval: when the SBC server is unavailable, resulting in no response to the registration message, IAD initiates a registration request to the SBC server at an offline interval;
- CallerID Mode: Get the explicit number from the From header field or the PPI (P-Preferred-Identity) header field
- Fax bypass parameters: set the parameters that are incidental to the fax negotiation in order to accommodate different platform requirements,

fax/modem or x-fax/x-modem.

- Phone number format: respectively, normal and escape characters.

## 4.4 Port Settings



Opening "port settings" can execute the basic settings like device' s SIP registered account, registered code and other parameters;

Besides, users also can set user group, relay search group, voice fax and advanced business.

### 4.4.1 Basic Settings

The image shows the "Basic Settings" configuration page. At the top, it says "Port Settings->Basic Settings". Below that is a "Basic settings" section containing a table with columns: Port, Type, Username, Index, Password, Auth. Name, Internal No., CallerID, and Lock. There are four rows for ports 1, 2, 3, and 4. Each row has input fields for Username, Password, and Internal No., a dropdown for CallerID (all set to FSK), and a checkbox for Lock. A "Batch Conf" button is at the bottom left of the table. Below the table are "Save" and "Cancel" buttons.

Port	Type	Username	Index	Password	Auth. Name	Internal No.	CallerID	Lock
1	FXS		1				FSK ▼	<input type="checkbox"/>
2	FXS		2				FSK ▼	<input type="checkbox"/>
3	FXS		3				FSK ▼	<input type="checkbox"/>
4	FXS		4				FSK ▼	<input type="checkbox"/>

Explanations:

- Port: The sequence for telephone cable is in accordance with the marks on machine' s external case;
- Type: FXS and FXO;
- Username: SIP account;

- Password: IIP account' s password;
- Auth. Name: It is usually identical to the username and needful for part of soft switch systems;
- Internal No.;
- CallerID: It includes types like FSK, DTMF, FSK2 and DTMF2;
- Lock: It means SIP cancellation state. The port is not allowed to be opened under this state.

## 4.4.2 Voice/Fax Settings

Port Settings -> Voice/Fax Settings

**Voice Fax Settings**

Select Port: Port1

**Voice Settings**

Silence Compression:  Enable

Echo Cancellation:  Enable

Flash:  Enable

Codec Priority: [1] G.711A @G.711U @G.729 @G.723.1

Packet Interval: 20ms

DTMF Mode: In Band

DTMF Gain: -4 DB

In Gain: 0 DB

Out Gain: 0 DB

Jitter Buffer Level: 120 ms

**Fax Settings**

Fax ECM:  Enable

Fax Mode: T30 Transparent

Max Rate: 14400

High Rate Redundance: 0

Low Rate Redundance: 0

Save Cancel

### Explanations:

- Select Port: It refers to choosing the port needs configuring.
- Voice Settings:
  - Silence Compression: It is closed by default, means the period to recognize and eliminate the long-time silence from sound signal flow, so as to save network resources;
  - Echo Cancellation: It is turned on by default;

- Flash: It is polarity reversal and polarity function, they are not opened by default;
- Voice coding: It means voice coding of set port, and supports G711A/U. G723.1. G729 ;
- Packet Interval: It means the size of voice data package of conversation setting. The more bigger the value is, the more bigger the voice data package transmitted at the time of conversation will be, which suggests it makes full use of the network broadband. Normally, it is applicable to the network with low broadband. However, the voice delay therefrom is more bigger as well. Accordingly, set the value small depending on the network rate. The default value is 1, equal to 15ms;
- DTMF Mode: It supports inband, SIPINFO and RFC2833;
- DTMF gain: It is defaulted to be -4dB;
- In Gain: DSP input gain;
- Out Gain: DSP output gain;
- Jitter Buffer Level: It is defaulted to be 120 milliseconds.

Fax Settings	
Fax Enable	<input type="checkbox"/> Enable
Low Fax Echo Cancellation	<input type="checkbox"/> Enable
Fax ECM	<input type="checkbox"/> Enable
Fax Mode	T30 Transparent ▼
Max Rate	14400 ▼
High Rate Redundance	0 ▼
Low Rate Redundance	0 ▼

#### Explanations:

##### Fax Settings

- Fax ECM: Fax error correction;
- Fax modes: It includes three modes of Voice, T38 and bypass (T30);
- Max Rate;
- High Rate Redundance;

- Low Rate Redundance.

## 4.4.4 Advanced Settings

Port Settings -> Advanced Settings

**Advanced Settings**

**Select Port** Port1

No Disturb  Enable

Call Wait  Enable

State Subscribe  Enable

Message Tx  Enable

Message Destinations

Caller Display Restrict  Enable

Call Hold Mode Standard

Call Transfer Mode Platform

Phone Mode Normal

HotLine Num

Callout Constraint

With PBX Callout Prefix  Enable

**Local Services**

**Call Forwarding**

Unconditional  Enable

On Busy  Enable

No Answer  Enable

Call Forwarding Number

No Answer Time 40 (0~250Sec)

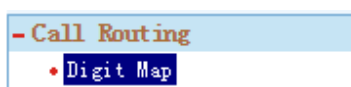
Save Cancel

### Explanations:

- Select Port: It means to choose serial number of the port needing configuration;
- No disturbing: The port will not be called in in enabled mode, so it needs to be started;
- Call wait: It deems to be stated using;
- State Subscribe: It is not started using by default;
- Register State Subscribe user specifies the subscription user, which is not enabled by default
- Session State Subscribe user specifies the subscription user, which is not enabled by default
- Message Tx, specified message sent user, not enabled by default;

- Caller Display Restrict, which is not enabled by default
- Call Hold Mode, includes Standard, SSCC, normal
- Phone Mode, includes Normal and Hotline mode.
- HotLine Num, Enter the designated hotline number here after setting the usage pattern as the hotline;

## 4.5 Call Routing



The Call Routing includes Digit Map settings.

### 4.5.1 Digit Map

 A screenshot of the "Digitmap Settings" configuration page. The page has a blue header with the title "Digitmap Settings". Below the header, there are several settings:
 

- DigitMap:  Enable
- Quick Dial:  Enable
- Unmatch Report:  Enable
- DigitMap: A text area containing the configuration string: `(0100XX|100XX|11[023459]|111XX|12[02]|121XX|123XX|12530`
- Reduce Length:
- Add Prefix:
- Add Suffix:
- Dial Route IP:
- Route Port:

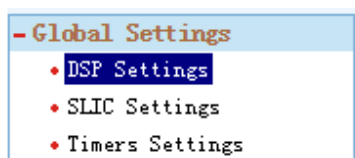
 At the bottom of the page, there are two buttons: "Save" and "Cancel".

Explanations:

- DigitMap: It is defaulted to be enabled;

- Quick Dial: Call out when getting # number, and set up according to requirements;
- DigitMap: It is configured as "X" , which means it can call out by dialing any number; also can be configured as "XXX" , completely matching with the length of three numbers. If \* and # combined together with a number, for instance, dialing #700\*, the diagram will be set as FX.E; use " | " to separate more than one dialed numbers, for example, X.| FXXXE.
- Reduce Length: It refers to the replacement rule of the number set as called number;
- Add Prefix: It refers to the replacement rule of the number set as called number;
- Add Suffix: It refers to the replacement rule of the number set as called number;
- Dial Route IP: It is 0.0.0.0 by default, and used to register SIP server configuration. If it is mutually called in a same device, it will be set as 127.0.0.1; if it is point-to-point callin, it should be configured as the IP address of counter party;
- Route Port: It should be filled in as requested by SIP server, and the default is 5060.

## 4.6 Global Settings



## 4.6.1 DSP Gloable Settings

DSP Global Settings	
RFC2833 Payload	97
RFC2198 Payload	96
RTP Port Min	10000
RTP Port Max	20000
Port Shared with T.38	<input checked="" type="checkbox"/> Enable
Flash Min	200 ms
Flash Max	600 ms

### Explanations:

- RFC2833 Payload: The corresponding value is set as 97 ~ 101 based on demands, and the default is 97;
- RTP port scope: It refers to the port that RTP protocol is using at the time of setting conversation. SIP protocol ranges from 5000-6000 by default;
- RTP Port Min: It is 10000 by default;
- RTP Port Max: It is 20000 by default;
- Flash Min/Max: Shoot fork upper and lower limit, you can modify the upper and lower time of the racket fork

## 4.6.2 SLIC Settings

SLIC Global Settings	
Ring Mode	Mode Two ▼

- Ring mode: different ringing modes can be set, including mode 1, mode 2 and



mode 3; different modes of ringing voltage are different; defaults to mode 2.

### 4.6.3 Timer Settings

Timers Settings	
Start Timer	16 (0~300Seconds)
Short Timer	4 (0~300Seconds)
Long Timer	16 (0~300Seconds)
Ring Tone Duration	60 (0~300Seconds)
Busy Tone Duration	16 (0~300Seconds)
Howler Tone Duration	16 (0~300Seconds)
RingBack Tone Duration	40 (0~300Seconds)

Ringing Pattern Settings	
External Group Ringing	1000 - 4000 - 0 - 0 (on-off-on-off Unit:ms)
Internal Group Ringing	1000 - 1000 - 0 - 0 (on-off-on-off Unit:ms)
CID before Ring Time	2000 (on-off-on-off Unit:ms)

International Call Setting	
Call Times Limit	5 / 60 (Seconds)
Session Timeout	3600 (Seconds)

Explanations:

- Start Timer: It is 16 seconds by default;
- Short Timer: It is 4 seconds by default;
- Long Timer: It is 16 seconds by default;
- Ring Tone Duration: It is 60 seconds by default;
- Busy Tone Duration: It is 16 seconds by default;
- Howler Tone Duration: It is 16 seconds by default;
- RingBack Tone Duration: It is 40 seconds by default.
- Ringing Pattern Settings, set different ringing modes to distinguish between

group and out of group call.

- International Call Setting, which limits international call out.

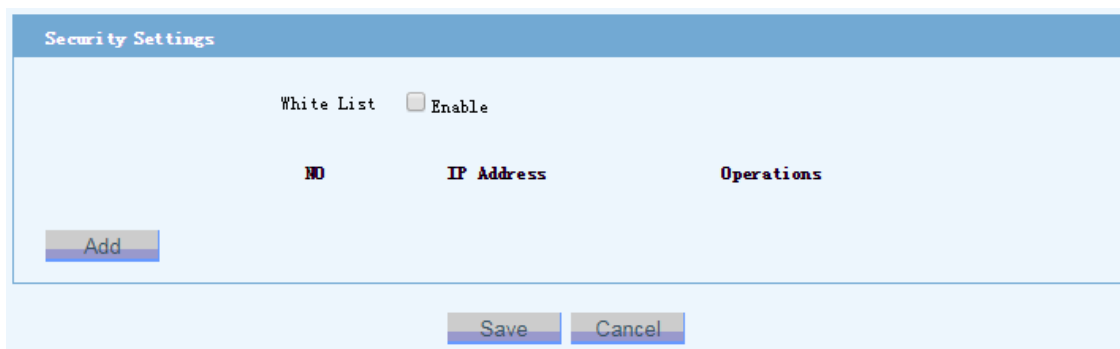
## Chapter V Firewall Settings

This chapter introduces how to make use of device to perform some advanced settings by WEB web to let users utilize expanded functions. The contents contain in this section as follows:

- 📖 White List
- 📖 Port Settings

### 5.1 Firewall Settings

#### 5.1.1 White List



The screenshot shows a web interface titled "Security Settings". Under the "White List" section, there is an "Enable" checkbox which is currently unchecked. Below this, there is a table with three columns: "NO", "IP Address", and "Operations". An "Add" button is located below the table. At the bottom of the interface, there are "Save" and "Cancel" buttons.

Explanation:

The white list function is closed by default.

**⚠️Note: If not set any whilt list after turning on this function, it will stop all IP to login the web after save it. So if do not use white list function, please turn off it!**

## 5.1.2 Port Settings

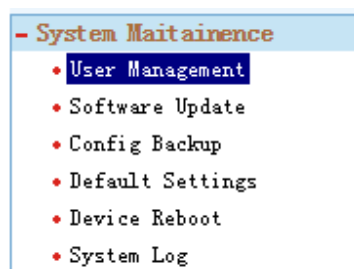
Port Settings			
HTTP Port	<input type="text" value="8008"/>		<input checked="" type="checkbox"/> Enable
TELNET Port	<input type="text" value="1250"/>		<input checked="" type="checkbox"/> Enable
HTTPS Port	<input type="text" value="4433"/>		<input checked="" type="checkbox"/> Enable
SSH Port	<input type="text" value="2222"/>		<input checked="" type="checkbox"/> Enable

SIP DDoS Settings			
Threshold	<input type="text" value="10"/> / <input type="text" value="60"/>	Second	<input type="checkbox"/> Enable
Gray List Time	<input type="text" value="180"/>	Second	

Only accept SIP server message: It opens by default and refuses to accept illegal SIP messages from not a SIP server. Turn off this function if you need to make the device FXO port jumper.

## 5.3 System Maintenance



System Maintenance cover authority management, software upgrading, data backup upgrading, factory setting restoration, etc.

With the help of this functions, it is very easy to manage and back up device rights, and to upgrade device settings and replace software for device.

## 5.3.1 User Management

User List					
NO	User Name	User Level	State	Operations	
1	admin	Administrator	Normal	Modify	Delete
2	ac_iad	Operator	Normal	Modify	Delete

[Add User](#)

⚠ Pay attention to capital and small letters when entering password.

Account number: admin Password: psw.iad

Account number: ac\_iad password: psw.access

- If you enter the password 5 times error will lead to account is locked, You need to login with the correct password through the serial port, and then go to the system directory and unlock using the user unlock admin command.
- If you forgot the password, please restore the factory configuration.

## 5.3.2 Software Update

⚠ **Note:** It is more likely to provoke irreparable damage in case of improper operation! Be cautious to use!

Update System	
Please select a update file	<input type="button" value="Choose file"/> No file chosen
<input type="button" value="Submit"/>	

Device supports to update the software via http loaded file.

**⚠ Note: During upgrade, be sure to supply power for device, and forbid to cut off device' s power supply!**

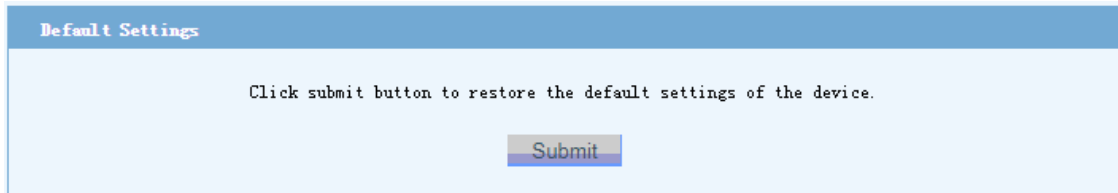
### 5.3.3 Config Backup

The screenshot displays two sections of a web interface. The top section, titled 'Update System', contains a note: 'Note1:User is allowed to upload local PC data file to device to finish update.' Below this note, there is a text prompt 'Please select a update file' followed by a 'Choose file' button and the text 'No file chosen'. An 'Upload' button is positioned below these elements. The bottom section, titled 'Backup System', contains a note: 'Note2:User is allowed to download current data file from device and store in local PC.' Below this note, there is a 'Backup' button.

**⚠Note: Prohibit the use of non configuration file, if you do not operate properly, it may cause irreversible damage! Please be careful with!!**

To back up and restore the gateway configured information.

## 5.3.4 Default Settings



Explanation: It needs to reserve gateway' s IP address and routing settings except for factory settings.

## 5.3.5 Device Reboot



Explanations: Reboot gateway causes the unsaved parameters to be lost. It takes around 2 minutes.

## 5.3.6 System Log

choice: loglevel  module

sys log

```
[1] [2000-1-1 08:01:11.903][ALARM][CFGMNG]CPU Overload End(RATIO=0%)
[2] [2000-1-1 08:01:07.858][ALARM][CFGMNG]CPU Overload(RATIO=100%)
[3] [2000-1-1 08:00:31.453][ALARM][CFGMNG]Device start up(Cold Start)
[4] [2000-1-1 08:00:15.736][INFO][CFGMNG]WAN Connected
[5] [2000-1-1 08:01:21.937][ALARM][CFGMNG]CPU Overload End(RATIO=56%)
[6] [2000-1-1 08:01:07.777][ALARM][CFGMNG]CPU Overload(RATIO=100%)
[7] [2000-1-1 08:00:31.350][ALARM][CFGMNG]Device start up(Cold Start)
[8] [2000-1-1 08:00:15.726][INFO][CFGMNG]WAN Connected
[9] [2000-1-1 08:00:31.794][ALARM][CFGMNG]Device start up(Soft Restart)
[10] [2000-1-1 08:00:15.687][INFO][CFGMNG]WAN Connected
[11] [2000-1-1 08:06:07.905][ALARM][CFGMNG]Device reboot
[12] [2000-1-1 08:06:07.350][CTRL][WEB]Load default config
[13] [2000-1-1 08:06:04.267][CTRL][WEB]Load default config
[14] [2000-1-1 08:04:26.723][CTRL][WEB]Program upgrade
[15] [2000-1-1 08:00:31.849][ALARM][CFGMNG]Device start up(Cold Start)
[16] [2000-1-1 08:00:15.936][INFO][CFGMNG]WAN Connected
[17] [2000-1-1 08:02:22.213][ALARM][CFGMNG]Device reboot
[18] [2000-1-1 08:02:22.209][CTRL][CLI]Load factory config
[19] [2000-1-1 08:01:42.147][ALARM][CFGMNG]CPU Overload End(RATIO=42%)
[20] [2000-1-1 08:01:07.797][ALARM][CFGMNG]CPU Overload(RATIO=100%)
```

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# Chapter VI Appendix

## Appendix I Basic Configuration Commands

### This section includes:

Command line interface profile: It focuses on introducing how to log onto the command line interface, command line format and characteristics;

Compressed chip configuration: It focuses on introducing the configuration commands and methods related to compressed chip;

Network parameters configuration: It focuses on introducing the configuration commands and methods related to network parameters;

System parameters configuration: It focuses on introducing the configuration commands and methods related to system.

## 6.1 Profile of Voice Command Line Interface

### 6.1.1 Command Line Entry

Users can get access to command line interface via the two ways as follows.

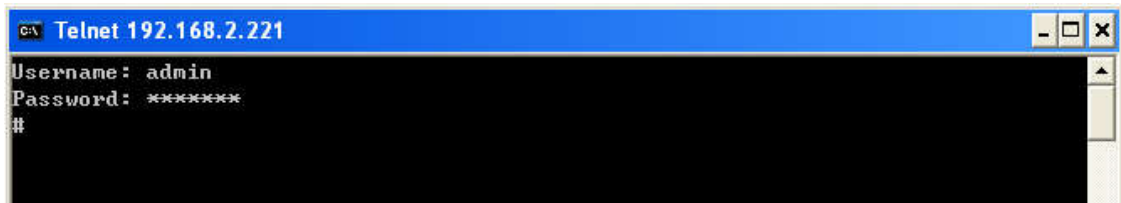
Link target board with PC via serial port, and then make use of super terminal and other software to log in;

Link target board with PC via network port, and then make use of Telnet login software to log in;

Under either login method, it needs to import the default username and password to log in. The default username is admin, and password is psw.AG. How to configure the



users with different authorities, refer to section 1.2.4. Now it is possible for you to operate all introduced commands. See command line login interface as follows:



```

C:\> Telnet 192.168.2.221
Username: admin
Password: ****
#
  
```

## 6.1.2 Command Line Prompts

CLI mould' s command line prompts include the following two levels:

Root command level: Cursor display with " #" after, it means the current command is in the root command layer;

Sub-command level: current setting directory name with ">" and cursor display after , it means the current command is in the sub-command layer;

## 6.1.3 Command Classification and Command Format

**Two major commands are root command and sub-command:**

### **Root command**

It refers to the first-layer command set after entering CLI, including

codec: compressed chip configuration command

network: network parameters setting command

protocol: protocol-related parameters setting command

switch: CLI command entering data configuration

system: command of system-related parameters setting and tool

manage: CLI command of management protocol-related settings

logout: CLI cancellation command

Help: command for help

show: various parameters display command

reboot: MDU restart command

take-effect: command to take make parameters effect.

Among the above said commands, 1~5 belong to the directory commands, namely, they have sub-commands.

Sub-command

It refers to the command set after entering a particular setting directory, see below:

Command Layer	Sub-command
Codec-layer sub-command	audio_port , cid , cn , dtmf , df_codec , ec , fax , fax_ctrl_mode , g.723.1 , gain , jb , line_hook , oa , pktintvl , priority , rfc2833_pt , rfc2833_neg_mode , rfc2833_red_pt , ring , ring_pattern , sc , t38_ev_det_mode , t38_mode , t38_port , tone , tone_duration , dm_timer , keepRTP , vbd , show , exit , help
Network-layer sub-command	dns , gateway , hostname , ip-mask , mode , ntp , vlan , pppoe , show , exit , help
Protocol-layer sub-command	al_par_en , cmddelay , digitmap , empty_no_with_blank , ep_name , ephterm , heartbeat , howler_logout , local_ctrl_resp , local_tone_ctrl , md5 , mg , mgc , mgc2 , mgc3 , mgcmode , port_vis , pos_num , reg_reason_code , remote_dscr_resp , rereg , resend_time , send_local_sdp , sig_ab_mode , trans_type , wt_to_handle , show , exit , help
System-layer sub-command	debug , dmesg , download , ifshow , load , logoutep , logoutmg , mem , regmg , resourceinquiry , ping , protocol , ps , regep , reboot_type , route , save , test , timezone upload , version , exit , help
Manage/snmp-layer sub-command	agent, community, exit, group, help, show, switch, trap, user

Every command format is organized in the form of "command name, parameter 1, parameter 2....." . For instance, network> ip-mask 192.168.1.2/24

Therein, "network>" is the command prompt, "ip-mask" is the command name, and "192.168.1.2/24" is a parameter.

Part of commands have no need of parameters, and can be operated by way of interaction.

## 6.1.4 Auxiliary Function

**Automatic completion functions of command and parameter**

CLI module has the automatic completion functions of command and partial parameters. If users press "TAB" button when entering command word or parameters, CLI will automatically look for the words matching with the entered ones. If it looked for a sole matched command or parameter, CLI will automatically make the whole word complete and add a space after it so as to smoothly import a next parameter. For instance, after inputting "n" + TAB in the root command layer, CLI will automatically complete the command "network" : # n ( TAB ) —> # network. If no any match word can be found, TAB button will be ignored.

**Function for command line history record**

After ending the command line entry (press enter key after nonempty character string), CLI will write the contents input last time into command history buffer memory; After pressing upkey or downkey, users are able to search command history records and the searched records will be automatically written into command line.

**Parameter absence reminding function**

When parameters are not filled in or incorrect ones are completed in, a lot of available parameters will display once enter key is pressed. For example, input "cid" in "codec" command layer and press enter key, CLI will display reminding information `codec_ep1> cid (enter key): The command is not completed! Available parameters: dtmf fsk command usage: cid {dtmf | fsk}`

**Hidden command and maskoff command**

The hidden command refers to the command that the user fails to complete by CLI command or help function. These commands only work after users manually enter the preset hidden command name. For instance: `system> user`

The maskoff command refers to the command is not allowed to execute under the

command line logged in by Telnet. These commands also are the ones that were preset via procedure code.

## 6.2 Detailed Explanations for Voice Command Usage

### 6.2.1 Compressed Chip Setting Command Set

You could go to compressed chip setting contents once entering "codec" command, see below: # codec

Please input endpoint index (1 ~ 24): 1

In consideration of many ONU ports, so the subport displays port' s parameters. The host of parameters are the global parameters, and the parameters showing in every port mode is the same as the set ones. Including

Endpoint1 audio port: 4000

Endpoint1 T.38 port: 14000

The above two are different from the parameters shown in each port, and they can be set respectively.

#### **CID mode setting command**

```
codec_ep1> cid { parameter }
```

This command is used to set the caller ID display mode, parameter is "dtmf" or "fsk" .

### **Comfort noise setting command**

```
codec_ep1> cn {parameter}
```

The parameter is only "enable" or "disable" , "enable" means to turn on the comfort noise function, and "disable" means to turn it off.

### **DTMF mode setting command**

```
codec_ep1> dtmf
```

DTMF Mode:

[1] In Band

[2] RFC2833

[3] RFC2833 Redundance

Input your choice[1~3]:

This command is set by way of interaction, and it will work if only the corresponding serial number is chosen.

### **Command to cancel Echo switch setting**

```
codec_ep1> ec {parameter}
```

The parameter is only "enable" or "disable" , "enable" means to turn on the echo canceling function, and "disable" means to turn it off.

### **Fax mode setting command**

```
codec_ep1> fax {parameter}
```

The parameter is only "t38" or "transparent" , "t38" means the fax protocol is T.38, and "transparent" means the fax protocol is EAP over radius.

### **G.723.1 code rate setting command**

```
codec_ep1> g.723.1 {parameter}
```

The parameter is only "high" or "low" , "high" means the code rate is 6.3Kbps,

and "low" means it is 5.3Kbps.

### **Gain setting command**

```
codec_ep1> gain { parameter 1} { parameter 2}
```

Therein, parameter 1 is the In-Gain, the value of In-Gain; parameter 2 is Out-Gain, the value of Out-Gain. The value of the both ranges from -31to 31, unit is dB.

### **Vibrating buffer depth setting command**

```
codec_ep1> jb {parameter}
```

The parameter is only "0" , 50" , 100" , 150" or "200" , unit is ms.

### **"line hook" parameter setting command**

```
codec_ep1> line_hook
```

This command is set by way of interaction, it does not need any parameter, and the set parameters include:

- Pulse Min Width
- Pulse Max Width
- Inter Digit Min Time
- Flash Min Time
- Flash Max Time
- Off Hook Time
- On Hook Time

Such as:

```
codec_ep1> line_hook
```

Pulse Min Width [40]:

Pulse Max Width [75]:

Inter Digit Min Time [150]:

Flash Min Time [100]:

Flash Max Time [400]:

Off Hook Time [40]:

On Hook Time [400]:

Therein, the value in “[ ]” refers to the value set to the parameter currently, unit is ms.

### **Output attenuation setting command**

```
codec_ep1> oa {parameter}
```

The parameter is only “ - 3.5” , “ - 7” or “0” , unit is dB.

### **Command to set compressed chip package cycle**

```
codec_ep1> pktintvl {parameter}
```

The parameter is the package cycle, unit is ms. For example:

```
codec_ep1> pktintvl 20
```

### **Coding priority setting command**

Interaction setting mode:

```
codec_ep1> priority
```

Only “priority” command is entered, the command line will inquire the priority that user is going to set, as shown below:

Algorithm priorities:

[1]	G.711A	G.711U	G.729	G.723.1
[2]	G.711U	G.711A	G.723.1	G.729
[3]	G.729	G.711A	G.711U	G.723.1
[4]	G.729	G.723.1	G.711A	G.711U
[5]	G.723.1	G.711A	G.711U	G.729
[6]	G.723.1	G.729	G.711A	G.711U

Input your choice[1~6]:

At this time it is only allowed to enter numbers from choice [1~6]. Users are able to press "Ctrl+C" or directly button enter key to get out of priority setting status if driven by the intention to give up setting.

### **Non-interaction setting method**

```
codec_ep1> priority {parameter}
```

The parameter is only chosen from [1~6], which stands for the sequences of six coding priorities under interaction method.

### **Setting command of value of RFC2833 payload type**

```
codec_ep1> rfc2833_pt {parameter}
```

The parameter ranges from 96 ~ 127.

### **Ring time setting command**

```
codec_ep1> ring {parameter1} {parameter2}
```

Parameter 1 is "on time" , namely the ring duration time; parameter 2 is "off time" , namely the ring interval time. The parameters for the both range from 0 ~ 65535, unit is ms.

### **Command of mute compressed switch setting**

```
codec_ep1> sc {parameter}
```

The parameter is only "enable" or "disable" . Therein, "enable" means to open the mute compressing function; and "disable" means to close it.

### **T38 control mode setting command**

```
codec_ep1> t38_mode {parameter}
```

The parameter is only "mgc" or "mg" . Therein, "mgc" means T38 mode is controlled by mgc; and "mg" means T38 mode is controlled by mg.



**T38 port setting command**

```
codec_ep1> t38_port
```

The command is set by mode of interaction, it does not need any parameter. After carrying out a command, CLI will show the value range of port is 1 ~ 65535, and show the port number of Endpoint 1, input new port number after Endpoint1. For example:

Port range: 1 ~ 65535

Endpoint1 [14000]: 10000

During the setting, users button the enter key to keep the original port setting, and press "Ctrl + C" to cancel it.

**Ring style setting command**

```
codec_ep1> tone {parameter}
```

The parameter is only "0" , "1" or "2" , which stands for different ring styles.

Command for progress tone duration time setting 

```
codec_ep1> tone_duration
```

The command is set by mode of interaction, it does not need any parameter. The set parameters include:

- Dial Tone Duration

- Busy Tone Duration

- Howler Tone Duration

- Digit max interval

- Ringback Tone Duration

- Ring Max Time

- Call Waiting Time

- Confirm Tone Duration

Such as:

Dial Tone Duration (1 ~ 254), [60]:

Busy Tone Duration (1 ~ 254), [60]:

Howler Tone Duration (1 ~ 254), [60]:

Digit Max Interval (10 ~ 60), [25]:

Ringback Tone Duration (1 ~ 254), [60]:

Ring Max Time (1 ~ 254), [60]:

Call Waiting Time (1 ~ 30), [30]:

Confirm Tone Duration (1 ~ 254), [0]:

Therein, the numbers in "[ ]" means the value set for the parameter currently, unit is second.

#### **H.248 timer setting command**

```
codec_ep1> dm_timer {parameter1} {parameter2} {parameter3}
```

Therein, parameter1 is the short timer, parameter 2 is the long timer, parameter 3 is the start timer, and unit is second.

#### **Setting command of RTP flow keeping of H.248**

```
codec_ep1> keepRTP
```

The command is set by mode of interaction, it does not need any parameter. After performing the command, CLI will show RTP flow keeping on-off state, and then inquire the user whether to turn it on or turn it off. For example:

RTP keeping is enabled.

Enable RTP keeping? [y/n]:

At this time users only can enter bite "y" or "n", and have no need of noting capital and small letters. "y" means to turn on, and "n" means to turn off.

Users can close, or directly press enter key to automatically get out of the setting, or press "Ctrl + C" to cancel the setting.

```
codec_ep1> show {parameter}
```

The parameter can be "all" or the command name of each compressed chip setting, for instance:

```
codec_ep1> show dtmf
```

When the parameter is "all", it will show all parameter values in directory of this layer; when the parameter is the designated command name, it will show the parameter value. Therein, when the parameter configuration value is different from the value which is being used, CLI will show the value which are being used together, and with "\*" before them. For instance:

```
codec_ep1> show fax
```

( "\*" means the Running Config Value)

```
FAX mode:                T.38                * Transparent
```

### Exit command

Interactive exit mode

```
codec_ep1> exit
```

If there is no any parameter set, please directly go back to the root command layer.

If there is one or more parameter sets, after buttoning "exit", the command line will inquire the users whether to save the setting or take effect immediately, see below:

Changes found, please select the operations:

[1] Discard changes.

[2] Save changes without taking effect.

[3] Save changes with taking effect instantly.

Your choice? (Press Ctrl-C or Enter to cancel exiting):

Therein, "[1]" means to give up setting, "[2]" stands for only to save the changed parameters instead of taking effect immediately, and "[3]" refers to saving the changed parameters and take effect immediately. After making a choice, CLI will go back to the root command layer. Users can button "Ctrl-C" or enter key to cancel

the operation.

### **Non-interaction mode**

```
codec_ep1> exit discard
```

Give up setting and return back to the root command layer.

```
codec_ep1> exit save-only
```

Only save the setting and do not take effect immediately.

```
codec_ep1> exit effect
```

Save the setting and take effect immediately

How to perform “exit” command in the directory of each layer? It is the same as the above said. So there will be no any detailed explanations.

### **Help command**

```
codec_ep1> help [parameter]
```

The parameter is the name of any command in this directory, it is optional. For instance, enter “help ring” : codec\_ep1> help ring in codec layer.

Function: Set ring on time and off time.

Command usage: ring {On Time} {Off Time}

Therein, “Function” is the functional explanation of this command; and “Command usage” is the grammar of it.

When command “help” has no any parameter, CLI will show the function explanations of all commands in this layer.

In future, usage of command “help” in directory of each layer is same, and there will be no any detailed explanation.

## **6.2.2 Network Parameter Setting Command Set**

Once input "network" command in the root command layer, you could go to network parameter setting content, for example, #network

If the network setting is based on the unit of connection, every connection can be set different network configurations.

Add connection#network> add connection {parameter}

Parameter is the identifier of connection which is going to be added. After adding connection, you could go into the corresponding connection to set related parameters.

Go into the corresponding connection

#network> connection {parameter}

Parameter is the identifier of connection which is going to be gone into. You could go into the corresponding connection to set related parameters, including IP, VLAN and the like.

Example: #network> connection connection1

Setting of the physical port for connection

# network/conn connection1> set phyport {parameter}

Parameter is the physical port. There are two physical ports on the device, one is FE0, the other is FE1. So parameter' s value is fec0 or fec1.

Setting of connection static network mode

#network/conn connection1> set ip static {parameter1} {parameter2}

Parameter 1 is the IP address that will be set, and parameter 2 is netmask.

Setting of connection dhcp network mode

#network/conn connection1> set ip dhcp

There is no need of any parameter when setting connection dhcp network mode, just

button enter key.

Setting of connection PPPoE network mode

```
#network/conn connection1> set ip pppoe {parameter1}{parameter2}
```

Parameter 1 is the username of pppoe; and parameter 2 is the password of it.

VLAN of connection closure

```
#network/conn connection1> set vlan {parameter}
```

Setting parameter as disable can close VLAN of connection.

VLAN of connection setting

```
#network/conn connection1> set vlan enable {param1} {param2}
```

Parameter 1 is the ID of vlan; and parameter 2 is the priority of it.

configuration of connection effect taking

```
# network/conn connection1> exit effect
```

The configuration of connection will take effect once this command is carried out.

DNS setting command

```
network> dns {parameter1} {parameter2}
```

Parameter 1 is the IP of DNS1; and parameter 2 is the IP of DNS2.

The address format is xxx.xxx.xxx.xxx. For instance, 202.116.128.86. All the IP addresses mentioned below are subject to this format.

Gateway setting command

```
network> gateway {parameter}
```

The parameter is the gateway IP address.

NTP setting command

```
network> ntp
```

The command is set by mode of interaction, it does not need any parameter. After performing the command, CLI will show the on-off state of current NTP client service, and then inquire users whether to open or close it. Users can choose "disable" or directly button enter key to get out of the setting, or else, CLI will show the value set for the address of current NTP server, and inquire users about the server address that is going to be reset. For instance:

Ntp service is disabled.

Enable Ntpserver? [y/n]: y

Current Ntp IP or domain name is "www.asia.pool.ntp.org".Please  
input a new Ntp IP or domain name.

NTPSERVER (Enter to pass):

Ntp IP or domain name is not changed.

Buttoning "Ctrl + C" during setting can give up setting.

Exit command

```
network> exit [parameter]
```

Help command

```
network> help [parameter]
```

### 6.2.3 Protocol-related Parameter Setting Command Set

It will immediately go into the protocol-related parameter setting content once input

“protocol” command in the root command layer, see below:

```
# protocol
```

Port name setting command

```
protocol_ep1> ep_name {parameter}
```

The parameter is the port name, and the max bit is 255.

Command to set heartbeat mode and interval `protocol_ep1> heartbeat`

The command is set by mode of interaction, it has no need of any parameter. Buttoning enter key will remind you whether to close heartbeat mode or which heartbeat mode should be chosen. Choosing “disable” or directly buttoning enter key will automatically get out of settings; choosing “[2]MGC” or “[3]MG” will let system require to set heartbeat interval and heartbeat survival time, and choosing “[3]GC” mode will inquire whether to send heartbeat package. Heartbeat interval’ s value ranges from 1~65535, and its survival time’ s value ranges from 1~255, unit is ms.

Command to set MG domain name and port

```
protocol_ep1> mg {parameter1} [parameter2]
```

Parameter 1 is the MG domain name, and parameter 2 is the MG port number (optional). The max domain name bit is 255, and port number ranges from 0~65535.

Command to set MGC domain name and port `protocol_ep1> mgc {parameter1} [parameter2]`

Its usage is the same as the “mg” command.

Command for setting standby MGC domain name and port

```
protocol_ep1> mgc2 {parameter1} [parameter2]
```



或

```
protocol_ep1> mgc3 {parameter1} [parameter2]
```

Its usage is the same as the "mg" command.

Command of H.248 permission mode setting

```
protocol_ep1> trans_type {parameter}
```

The parameter is only "tcp" or "udp" .

Command for setting H.248 signaling abbrev-mode

```
protocol > sig_ab_mode {parameter}
```

The parameter is only "enable" or "disable" . "enable" means to open it, and "disable" means to close it.

Command for setting H.248 temporary endpoint

```
protocol > ephterm
```

The command is set by mode of interaction, it does not need any parameter. After carrying out the command, CLI will require users to set relevant parameters. Direct buttoning of the enter key by users will keep the original set value, and buttoning "Ctrl + C" can cancel the settings. For instance:

```
protocol_ep1> ephterm
```

Ephterm Prefixion [RTP/]:

Start NO. [0]:

Ephterm Max Number [10000]:

Ephterm Step [1]:

Ephterm Name same length [n] (y/n)?

Command to set H.248 command re-sending time

```
protocol_ep1> resend_time {parameter}
```

The parameter is the time value of reset command, and unit is second.

MGC platform setting command of H.248

Interaction setting mode

```
protocol_ep1> mgcmode
```

After only entering “mgcmode” command, the command will inquire users about the MGC platform that will be set. See below:

MGC Mode:

[0] DEFAULT

[1] HW

[2] ZTE

[3] BELL

Input your choice[0~3]:

At this time only numbers chosen from 0 ~ 3 can be input. If the users want to give up the settings, they are able to button “Ctrl + C” or directly button enter key to get out of priority setting state.

Non-interaction setting mode

```
protocol_ep1> mgcmode {parameter}
```

Only numbers chosen from 0 ~ 3 can be input, which stands for the three MGC platforms under interaction mode.

Command to set H.248 command delay

```
protocol_ep1> cmddelay {parameter}
```

The parameter is the time value of command delay, and unit is ms.

Parameter displaying command

```
protocol_ep1> show {parameter}
```

The parameter is only "all" , auth ", "ep" , heartbeat" , mg" , mgc" or "type" . If the configured parameter value is not the same as the valued being used, CLI will display the being used value concurrently, and before them there is "\*" , for instance:

```
system> show mg
```

( "\*" means the Running Config Value)

```
MG name:          192.168.1.1          * 192.168.1.166
MG port:          2727
```

Exit command

```
protocol_ep1> exit [parameter]
```

Help command

```
protocol_ep1> help [parameter]
```

## 6.2.4 System Parameter Settings and System Tool Command Set

You are able to enter system parameter settings and system tool contents once input "system" command in the root command layer, see below:

```
# system
```

System user configuration command

The user groups of the system cover Admin, DataUser, VoiceUser and Guest. Each group has the default users, they are Admin, DataUser, VoiceUser and Guest respectively. Password and username are not different. Users from different group have different rights. User from guest group only has right to read, but has no right to configure; user from VoiceUser is only able to configure voice business but unable to configure data business; user from DataUser is only able to configure data

business but unable to configure voice business; and user from Admin group is administrator, possessing all rights. The following command is for user from Admin group, and they are invisible for users from other groups after login.

System users increase

```
#system> user add {parameter1} {parameter2} {parameter3}
```

Parameter 1 is the username which will be added; parameter 2 is the login password of users; and parameter 3 is the group that the users belong to. The parameter 3 is only 1, 2, 3 or 4, they are Admin, DataUser, VoiceUser and Guest respectively.

System users modification

```
#system> user modify {parameter1} {parameter2} {parameter3}
```

Parameter 1 is the modified username; parameter 2 is the login password of users; and parameter 3 is the group that the users belong to. The parameter 3 is only 1, 2, 3 or 4, they are Admin, DataUser, VoiceUser and Guest respectively.

System users deletion

```
#system>user delete antion {parameter}
```

The parameter is the username that will be deleted.

All system users displaying

```
#system>user list
```

This command has no need of any parameter. All information, including username and user group, will be displayed after the command is performed..

Commission command

```
system> debug {parameter1} {parameter2}
```

Parameter 1 is only "call" , pri" or "start" ; and parameter 2 is only 0~3. Parameter 1 refers to the commissioned objects that will be set, such as "Call" module and

private protocol module, or the "start" when the users begin to enter the commission status. Parameter 2 refers to commission level. Normally, display of more information means the level is more lower. No any information will be displayed at level 0. For example:

```
system> debug pri 3
system> debug start
```

Users are unable to perform other commands in the commission status. The command line status can not be restored until you button "Ctrl + C" to get out of the status.

Document upload/download command

Download command

```
system> download {parameter1} {parameter2} {parameter3}
```

Parameter 1 only can be "config" , pf0" , pf1" , pf2" or "program" . Of them, "program" refers to procedure mapping files, others refer to parameter configuration files, they are required to be relative to the different parts of Flash respectively. Parameter 2 is the IP address of server, for instance, 192.168.1.3. Parameter 3 is the name of server port document, for example:

```
system> download config 192.168.1.3 cfg-pf2
system> download program 192.168.1.3 prog
```

Upload command

```
system> upload {parameter1} {parameter2} {parameter3}
```

Usage is similar with download command.

Internet interface information display command

```
system> ifshow
```

This command does not need any parameter. It is transplanted into ifconfig command of busybox, and used to display network access information, but is without

configuration function. For example:

```
eth0  Link encap:Ethernet  HWaddr 00:1D:2B:02:AB:0C
      inet6 addr: fe80::21d:2bff:fe02:ab0c/64 Scope:Link
      UP BROADCAST RUNNING  MTU:1500  Metric:1
      RX packets:736646 errors:0 dropped:0 overruns:0 frame:0
      TX packets:471395 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RXbytes:63351556(60.4  MiB) TXbytes:31267836
      Interrupt:1
```

Manual-cancellation endpoint command

```
system>logoutep
```

This command is performed by way of interaction, it does not need any parameter. It is used to force endpoint to be canceled from MGC, so as to forbid this endpoint' s NGN business. After the command is executed, CLI will display the following information:

```
system> logoutep
Start endpoint (1~24): 1
Number of endpoints (1~24): 1
POTS1 Status
Act:
Port:
Reg:
Hook:                HOOK_ON
Conn:                IDLE
Sig:                IDLE
```

Among them, "Start endpoint" is the operating start endpoint number, beginning with 1; and "Number of endpoint" refers to the quantity of the operating endpoints,

it is at least 1, but is not allowed to exceed the practical endpoint number.

#### Memory status display command

```
system> mem
```

This command does not need any parameter. It is used to display the current memory status of the system.

#### Network connectivity test command

```
system> ping {parameter}
```

The parameter is the IP address planned to be tested, for instance:

```
system> ping 192.168.1.1
```

Users can button "Ctrl + C" to get out of the command.

#### Protocol mode setting command

```
system> protocol {parameter}
```

The current protocol type will not be listed into the parameter reminding list. For example:

```
system> protocol h248
```

#### Progress information display command

```
system> ps
```

This parameter has no need of any parameter. It is transplanted into ps command of busybox and used to display related information of current each progress of the system. For instance:

PID	TTY	TIME	CMD
9930	pts/2	00:00:00	bash
19587	pts/2	00:00:01	Init315
19588	pts/2	00:00:00	Init315

19589 pts/2            00:00:00 cli

19967 pts/2            00:00:00 ps

#### Manual-registration endpoint command

```
system> regep
```

This command is adopted to manually open the endpoint of the forbidden NGN business, and then the endpoint will be used to register at MGC once more. The usage of the command is similar with 2.4.4.

#### Routing table display command

```
system> route
```

This parameter has no need of any parameter. It is transplanted into the route command of busybox to display current route setting state of the system, but it has no configuration function.

#### Command to save and load parameters

##### Parameter saving command

```
system> save or
```

```
system> save as {parameter}
```

The parameter only can be "pf0" , pf1" or "pf2" . "save as pf0" means there is no any parameter for this command. The command is used to save the configured values of the all current parameters into the different parts of Flash. For example:

```
system> save as pf1
```

##### Parameters loading command

```
system> load {parameter}
```

The parameter only can be "pf1" , pf2" , df1" or "df2" . "pf1" and pf2" means two places of the memory, with two sets of default configured values saved, which are not allowed to be changed by users. The command is used to load the configured



values in the Flash or memory as the current configured values. For example:

```
system> load pf2
```

Testing command

```
system> test {parameter}
```

The parameter only can be ring, connect, playtone {parameter}, loop or gr909{ parameter }. Therein, the parameter of playtone only can be Silence, dial, ringback, busy, callwaiting or howler; and the parameter of gr909 is Channel No.

```
system> timezone
```

This command is set by way of interaction, and does not need any parameter. After carrying out the command, CLI will display the time zone set currently and require new time zone to be entered. Negative number means east time zone, positive number means west time zone. For example, China locates at east time zone 8, UTC offset [-8].

During setting, users button enter key to keep the original port settings, and button "Ctrl + C" to cancel the setting.

Command to display software and hardware version numbers

```
system> version
```

It has no need of any parameter. After the command is performed, CLI will display the following information:

```
Hardware Version:    ... ..
Software Version:   ... ..
Created Time:       ... ..
```

"Hardware Version" and "Software Version" refer to the version number of hardware and software respectively, and "Created Time" refers to the software compilation time.

Exit command

```
system.> exit [parameter]
```

Help command

```
system.> help [parameter]
```

## 6.2.5 CLI Cancellation Command

#logout

The command has no need of any parameter, and it is used to cancel CLI.

## 6.2.6 System Restart Command

# reboot

The command has no need of any parameter, and it is used to restart the target board.

## 6.2.7 Parameter Display Command

# show {parameter}

The parameter can only be "codec" , "protocol" , "net" , "private" or "epstatus" . Of them, "codec" refers to the compressed chip; "protocol" refers to the protocol; "net" refers to network; and "private" means the private protocol. If the configured parameter value differs from the value being used, CLI will display all values which are being used together, and with "\*" before them. When the parameter is "net" or "private" , CLI will also show the state of current module, for example:

# show private

( "\*" means the Running Config Value)

Private IP:	10.25.101.1
OLT:	255
ONU:	255
Current status:	CONFIGING

If the parameter is "epsatus" , the system will remind to input port number after the command is performed. Once entered, the state of the port number, including actived state, registered MGC state, hookswitch state, linking state and signal state, etc., will be shown, for instance:

# show epstatus

Please input endpoint index(0 for MG status) (0 ~ 24): 1

POTS1 Status	
Act:	ACTIVED
Port:	REGISTERING
Reg:	REGISTERING
Hook:	HOOK_ON
Conn:	IDLE
Sig:	IDLE

## 6.2.8 Parameter Effect-taking Command

# take-effect

The command does not need any parameter. It is adopted to force the current all configured values to take effect.

## 6.2.9 SNMP-related Parameter Setting Command Set

Command to enable or disable snmp setting

#manage/snmp> switch { parameter }

This command is to turn on or off the snmp module. The parameter only can be "on" or "off ". "on" means to turn on snmp function; and "off" means to turn

off snmp function.

Example : #manage/snmp> switch on

Command to add community

```
#manage/snmp>community      set { parameter1  }{          parameter2}  
{ parameter3}
```

The command with two parameters is used to add community. Parameter 1 refers to the name of the community being going to be added, and parameter 2 refers to the rights of community, the right only can be "ro" or "rw" . "ro" indicates that community only has the right to read, while "rw" indicates that it has the right of both writing and reading. Parameter 3 is an IP address, showing the community only can be visited via that IP. This parameter is not essential. Absence of it means the community can use any IP.

Example : #manage/snmp> community set public rw

Community deletion command

```
#manage/snmp> community delete { parameter }
```

This command is used to delete system' s community. Parameter is the name of deleted community.

Command to display all community information

```
#manage/snmp> community list
```

This command displays all community information in the system, including name of community, right, and the IP designated to be visited.

Command for setting snmp proxy port

```
#manage/snmp> agent port { parameter }
```

This command is to set the proxy port. Its defaulted number is "162" . Parameter is the number of the proxy port planned to be set.

Example : #manage/snmp> proxy port 161

Command to enable or disable trap

```
#manage/snmp> trap switch { parameter }
```

This command is adopted to turn on or turn off trap function of snmp. Parameter only can be "on" or "off" . "on" means to turn on trap function; and "off" means to turn it off.

Example : #manage/snmp> trap switch on

Command for setting trap-related parameters

```
#manage/snmp> trap set { parameter1 } { parameter2 }
```

The command is used to set trap' s port number and host IP. Parameter 1 is host IP, namely the address that trap information is sent to; parameter 2 is trap' s port number, the default is 162. (All communities here use the same trap configuration).

Example : #manage/snmp> trap set 192.168.3.17 162

Command for displaying SNMP configured information

```
#manage/snmp> show all
```

Once the command is carried out, all of snmp configured information will be shown.