



**Synway SMG Series Wireless Gateway**

**SMG4004**

**SMG4008**

**SMG4016**

**SMG4032**

**Wireless Gateway**

# **User Manual**

**Version 2.0.0**

**Synway Information Engineering Co., Ltd**

**[www.synway.net](http://www.synway.net)**

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**Note:** Please visit our website <http://www.synway.net> to obtain the latest version of this document.

# Chapter 1 Product Introduction

Thank you for choosing Synway SMG Series Wireless Gateway!

The Synway SMG series wireless gateway products (hereinafter referred to as ‘wireless gateway’), as a part of the Synway gateway products, works mainly for connecting the wireless network with the VoIP network. It adopts an updated VoIP processor and the wireless module, uses the push-pull SIM card socket for easy replacement of the SIM card, quite advanced in technology. So far, only SMG4008 is available.

See below table for the modules of SMG series wireless gateway:

Series	Module & Ports	Supported Frequency Band/Code
GSM Gateway	SMG4032-32G1	<b>GSM: 850/900/1800/1900MHz</b>
	SMG4032-32G	
	SMG4016-16G1	
	SMG4016-16G	
	SMG4008-8G	
	SMG4004-4G	
WCDMA Gateway	SMG4016-16W	<b>GSM: 900/1800MHz</b> <b>UMTS: 900/2100MHz</b>
	SMG4008-8W	
	SMG4004-4W	
	SMG4032-32WA	<b>GSM: 850/900/1800/1900MHz</b> <b>UMTS: 850/1900MHz</b>
	SMG4016-16WA	
	SMG4008-8WA	
	SMG4004-4WA	
	SMG4016-16WT	<b>GSM: 850/900/1800/1900MHz</b> <b>UMTS: 850/2100MHz</b>
	SMG4008-8WT	
	SMG4004-4WT	

	SMG4016-16WZ	<b>GSM: 850/900/1800/1900MHz</b> <b>UMTS: 850/900/1900/2100MHz</b>
	SMG4008-8WZ	
	SMG4004-4WZ	
CDMA Gateway	SMG4032-32C	<b>CDMA: CDMA 2000 800MHz</b>
	SMG4016-16C	
	SMG4008-8C	
	SMG4004-4C	
LTE Gateway	SMG4032-32LE	<b>FDD LTE: B1/B3/B5/B7/B8/B20</b> <b>TDD LTE: B38/B40/B41</b> <b>WCDMA: B1/B5/B8</b> <b>GSM: B3/B8</b>
	SMG4016-16LE	
	SMG4008-8LE	
	SMG4004-4LE	
	SMG4032-32LC	<b>FDD LTE: B1/B3</b> <b>TDD LTE: B38/B39/B40/B41</b> <b>TDSCDMA: B34/B39</b> <b>WCDMA: B1</b> <b>CDMA2000 1X/EVDO: BC0</b> <b>GSM: 900/1800MHz</b>
	SMG4016-16LC	
	SMG4008-8LC	
	SMG4004-4LC	
	SMG4032-32LA	<b>TDD LTE: B40</b> <b>FDD LTE: B1/B1/B3/B4/B5/B7/B8/B28</b> <b>WCDMA: B5/B8/B2/B1</b> <b>GSM: 850/900/1800/1900MHz</b>
	SMG4016-16LA	
	SMG4008-8LA	
	SMG4004-4LA	
	SMG4032-32LT	<b>TDD LTE: B40</b> <b>FDD LTE: B1/B1/B3/B4/B5/B7/B8/B28</b> <b>WCDMA: B5/B8/B2/B1</b> <b>GSM: 850/900/1800/1900MHz</b>
	SMG4016-16LT	
	SMG4008-8LT	



	SMG4004-4LT	<b>FDD LTE: B4/B13</b>
	SMG4032-32LV	
	SMG4016-16LV	
	SMG4008-8LV	
	SMG4004-4LV	

Table 1-1 Model List

## 1.1 Typical Application

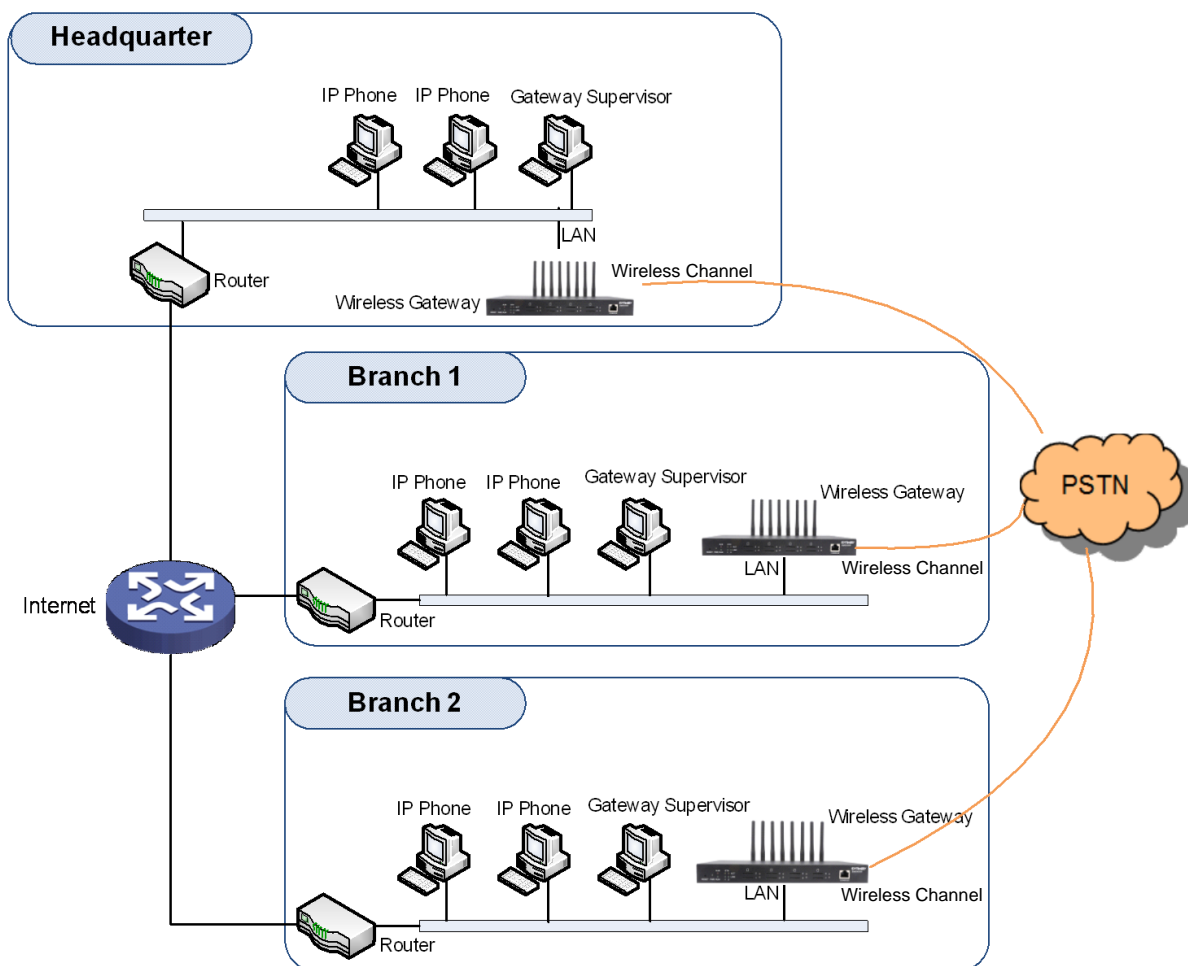


Figure 1-1 Typical Application

## 1.2 Feature List

Basic Features	Description
----------------	-------------

<b>TDM Call</b>	Call initiated from TDM to IP, via routing and number manipulation to obtain the called IP address.	
<b>IP Call</b>	Call initiated from IP to TDM, via routing and number manipulation to obtain the call destination.	
<b>Number Manipulation</b>	Peels off some digits of a phone number from left/right, or adds a prefix/suffix to a phone number.	
<b>Call Forward</b>	Three options available: Unconditional, Busy, No Reply and Unreachable.	
<b>CID</b>	Displays the CallerID.	
<b>Echo Cancellation</b>	Provides the echo cancellation feature for a call conversation over the wireless port.	
<b>TDM/VoIP Routing</b>	Sets a routing path: from IP to TDM or from TDM to IP.	
<b>Simultaneous Register to Multiple Servers</b>	Registers the gateway to a master registrar server and a spare registrar server simultaneously.	
<b>IMS Network</b>	Registers the gateway to a server under IMS network.	
<b>Custom IVR Recording</b>	Provides the interface to customize the IVR Recording.	
<b>White/Black List</b>	Allows the setting of the white/black list for WEB access.	
<b>Voice Gain Adjust</b>	Supports the gain adjustment for the received or sent voice.	
<b>Receive or Send SMS/USSD</b>	Supports the SMS sending and receiving, as well as the USSD request and response.	
<b>Auto Select Network</b>	Supports the auto identification and selection of the network operator.	
<b>SMS CODEC</b>	Two options available: ASCII and UCS2.	
<b>Signaling &amp; Protocol</b>	<b>Description</b>	
<b>SIP Signaling</b>	Supported protocol: SIP V1.0/2.0, RFC3261.	
<b>Voice</b>	CODEC	G.711A, G.711U, G.729A/B, G.723, G.722, AMR, iLBC
	DTMF Mode	RFC2833, SIP INFO, INBAND
<b>Network</b>	<b>Description</b>	
<b>Network Protocol</b>	Supported protocol: TCP/UDP, HTTP, ARP/RARP, DNS, NTP, TFTP, TELNET, STUN.	
<b>Static IP</b>	IP address modification support.	
<b>DHCP</b>	IP address dynamic allocation support.	
<b>DNS</b>	Domain Name Service support.	
<b>Security</b>	<b>Description</b>	
<b>Admin Authentication</b>	Supports admin authentication to guarantee the resource and data security.	
<b>System Monitor</b>	Monitors the running status of the system and the server.	
<b>Maintain &amp; Upgrade</b>	<b>Description</b>	

<b>WEB Configuration</b>	Support of configurations through the WEB user interface.
<b>Language</b>	Chinese, English.
<b>Software Upgrade</b>	Support of user interface, gateway service, kernel and firmware upgrades based on WEB.
<b>Tracking Test</b>	Support of Ping and Tracert tests based on WEB.
<b>SysLog Type</b>	Three options available: ERROR, WARNING, INFO.

## 1.3 Hardware Description

The wireless gateway supports two LANs and adopts an external 12V power supply. See below for product appearance.



Figure 1-2 SMG4008 Front View



Figure 1-3 SMG4008 Rear View

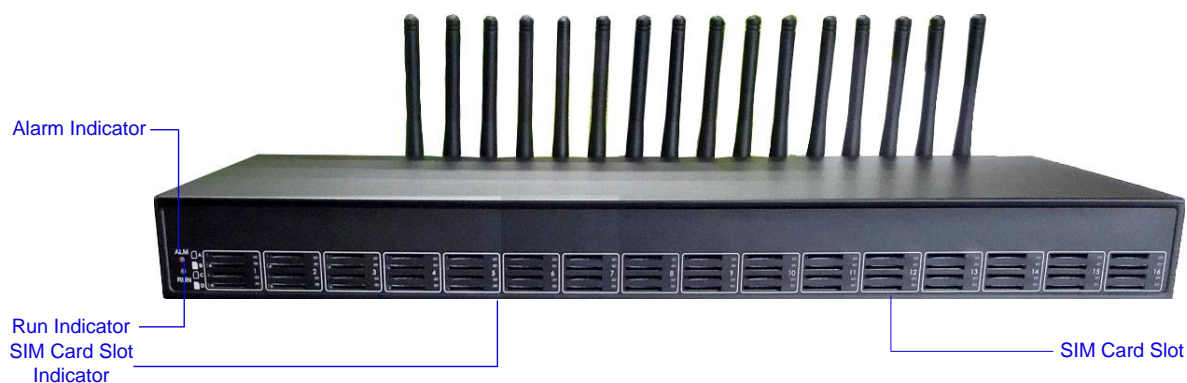


Figure 1-4 SMG4016 Front View



Figure 1-5 SMG4016 Rear View

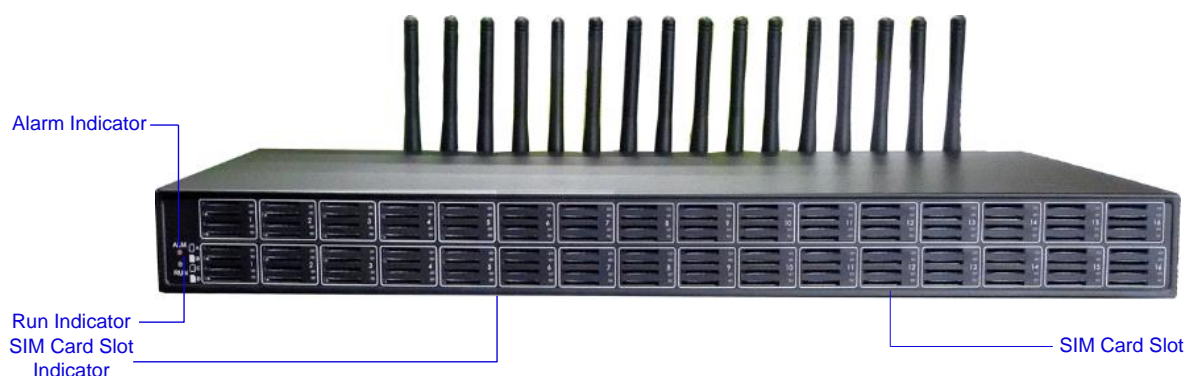


Figure 1-6 SMG4032 Front View



Figure 1-7 SMG4032 Rear View

The table below gives a detailed introduction to the interfaces, buttons and LEDs illustrated above:

Interface	Description
<b>LAN</b>	Amount: 2
	Type: RJ-45
	Bandwidth: 10/100 Mbps
	Self-Adaptive Bandwidth Supported
	Auto MDI/MDIX Supported
	Built-in Link indicator and ACTIVE indicator. For more details, refer to <a href="#">1.4 Indicator Info</a>
<b>SIM Card Slot</b>	Amount: 4, 8, 16*4, 32*4
	Network Supported: GSM, WCDMA, CDMA, VoLTE
<b>Console Port</b>	Amount: 1
	Type: RS-232
	Baud Rate: 115200bps
	Connector: RJ45 to DB-9 Connector (4004, 4008 series), Mini-USB connecting line (4016, 4032 series)
	Data Bits: 8 bits
	Stop Bit: 1 bit
	Parity Unsupported
	Flow Control Unsupported
<b>External Power Supply Interface</b>	Provide the 12V voltage with positive inside and negative outside, and the current is larger than 3A
Button	Description
<b>Reset Button</b>	Restore the gateway to factory settings by pressing this button persistently for 3 seconds
LED	Description
<b>Power Indicator</b>	Indicates the power state. It lights up when the gateway starts up with the power cord well connected
<b>Run Indicator</b>	Indicates the running status. For more details, refer to <a href="#">1.4 Indicator Info</a> .
<b>Alarm Indicator</b>	Alarms the device malfunction. For more details, refer to <a href="#">1.4 Indicator Info</a> .
<b>Link Indicator</b>	The green LED on the right of LAN, indicating the network connection status.
<b>ACT Indicator</b>	The orange LED on the left of LAN, whose flashing tells the data are being transmitted.
<b>Port Indicator</b>	<ol style="list-style-type: none"> <li>When the port is idle, the LED Lights up in green and keeps on;</li> <li>When the port is unavailable, the LED Lights up in red and keeps on;</li> <li>When the port is in use, the LED flashes in green</li> <li>When the port module is disabled, the LED flashes in red</li> <li>For SMG4016 series, only the indicator of the card slot in which the SIM card is in using lights up and other indicators will go out in the case that there are more than one SIM cards inserted in the same channel.</li> </ol>

For other hardware parameters, refer to [Appendix A Technical Specifications](#).

## 1.4 Indicator Info

The wireless gateway is equipped with two indicators denoting the system's running status: Run Indicator (green LED) and Alarm Indicator (red LED). The table below explains the states and meanings of the two indicators.

LED	State	Description
<b>Run Indicator</b>	Go out	System is not yet started.
	Light up and flash fast	System is starting.
	Flash slowly	Device is normal.
<b>Alarm Indicator</b>	Go out	Device is normal.
	Light up	Upon startup: Device is normal. In runtime: Device is abnormal.
	Flash	Device is abnormal.

**Note:**

- The startup process consists of two stages: System Booting and Gateway Service Startup. The system booting costs about 1 minute and once it succeeds, both the run indicator and the alarm indicator light up. Then after the gateway service is successfully started and the device begins to work normally, the run indicator flashes and the alarm indicator goes out.
- During runtime, if the alarm indicator lights up or flashes, it indicates that the device goes abnormal. If you cannot figure out and solve the problem by yourself, please contact our technicians for help. Go to [Appendix D Technical/sales Support](#) to find the contact way.

## Chapter 2 Quick Guide

This chapter is intended to help you grasp the basic operations of the wireless gateway in the shortest time.

### Step 1: Confirm that your packing box contains all the following things.

- Wireless Gateway \*1
- External 12V Power Adapter \*1
- GSM/WCDMA/CDMA/LTE Rubber Antenna \*4/8/16/32
- Standard RJ45 to DB-9 Switcher (4004/4008 series) \*1, Mini-USB connecting line (4016/4032 series) \*1
- 8mm Antenna Wrench \*1
- Rubber Foot Pad \*4
- Network Cable \*1
- Warranty Card \*1
- Installation Manual \*1

### Step 2: Connect the network cable.

This product provides RJ-45 interfaces.

### Step 3: Insert the SIM card (standard size) and install the antenna.

The wireless gateway provides a SIM card slot. You are required to insert the SIM card before using it. Take out the rubber antennae from the packing box, install them onto the wireless gateway, screw them up and evenly arrange them.

### Step 4: Power on and start the gateway.

To use the wireless gateway, you need an external power supply. Insert it to the power interface of the wireless gateway and power it on with 100~240V AC. See the figure below:



Figure 2-1 Wireless Gateway Power Connection



**Step 5: Log in the gateway.**

Enter the original IP address (192.168.1.101) of the wireless gateway in the browser to go to the WEB interface of the gateway. The original username and password of the gateway are both 'admin'. For detailed instructions about login, refer to [3.1 System Login](#). We suggest you change the initial username and password via 'System Tools → Change Password' on the WEB interface as soon as possible after your first login. For detailed instructions about changing the password, refer to [3.11.6 Change Password](#). After changing the password, you are required to log in again.

**Step 6: Modify IP address of the gateway.**

You can modify the IP address of the gateway via 'Advanced Settings → Network' on the WEB interface to put it within your company's LAN. Refer to [3.5.1 Network](#) for detailed instructions about IP modification. After changing the IP address, you shall log in the gateway again using your new IP address.

**Step 7: Make phone calls.**

Note: For your easy understanding and manipulation, all examples given in this step do not involve registration, that is, SIP initiates calls in a point-to-point mode.

**Situation 1: Call from a station to an IP phone (Tel→IP)**

1. Go to 'Advanced Settings → Dialing Rule' on the WEB interface and click the 'Add New' button to add a new dialing rule. Refer to [3.5.4 Dialing Rule](#) for detailed instructions. Enter either a particular number or a string of 'x's to represent several random numbers. For example, 'xxx' denotes 3 random numbers. You may use the default value of 'Index' and are required not to leave 'Description' empty.

**Example:** Set **Index** to **99**, fill in **Description** with **test** and configure **Dial Rule** to **123**.

2. Go to 'Port Settings → Port Group' on the WEB interface and click the 'Add New' button to create a new port group and add the corresponding ports to it. Refer to [3.8.2 Port Group](#) for detailed instructions. You may use the default values of other configuration items and are required not to leave 'Description' empty.

**Example:** Provided the added port is Port1, check the checkbox before **Port1**, set **Index** to **1**, fill in **Description** with **test**, and keep the default values of other configuration items.

3. Go to 'Route Settings → Tel→IP' on the WEB interface and click the 'Add New' button to add a new routing rule. Refer to [3.9.3 Tel→IP](#) for detailed instructions. Select the port group created in Step2 as 'Source Port Group' and fill in 'Destination IP' and 'Destination Port' with the IP address and the Port number you plan to call. You may use the default values of other configuration items and are required not to leave 'Description' empty.

**Example:** Provided the remote IP address intended to call is 192.168.0.111 and the port is 5060. Set **Index** to **63**, **Source Port Group** to **1**, fill in **Description** with **test**, configure **Destination IP** to **192.168.0.111**, **Destination Port** to **5060**, and keep the default values of other configuration items.

4. Use an external phone to call the number of this SIM card, and then follow the cue tone to dial the number set in Step1 to ring the remote IP phone. If you have set a particular number in Step 1, only this number you can dial; if you have set a string of 'x's, how many 'x's there are, how many random numbers you can dial.

**Example:** The external phone dials the number of this SIM card, and then follows the cue tone to dial 123. Then the IP phone with the IP address 192.168.0.111 and the port 5060 will ring.

**Situation 2: Call from an IP phone to a station (IP →Tel)**

1. Go to 'Port Settings → Port Group' on the WEB interface and click the 'Add New' button to create a new port group and add the corresponding ports which are connected with stations to it. Refer to [3.8.2 Port Group](#) for detailed instructions. You may use the default values of other configuration items and are required not to leave 'Description' empty.



**Example:** Provided the added port is Port1, check the checkbox before **Port1**, set **Index** to **1**, fill in **Description** with **test**, and keep the default values of other configuration items.

2. Go to 'Route Settings → IP→Tel/IP' on the WEB interface and click the 'Add New' button to add a new routing rule. Refer to [3.9.2 IP→Tel/IP](#) for detailed instructions. Fill in 'Source IP' with the IP address which initiates the call and select the port group created in Step1 as 'Destination Port Group'. You may use the default values of other configuration items and required not to leave 'Description' empty.

**Example:** Provided the IP address of the IP phone which initiates the call is 192.168.0.111. Set **Index** to **63**, **Destination Port Group** to **1**, fill in **Description** with **test**, configure **Source IP** to **192.168.0.111**, and keep the default values of other configuration items.

3. Pick up the IP phone and call the IP address and port of the wireless gateway to make outgoing calls from the wireless channel.

**Example:** Provided the IP address of the wireless gateway is 192.168.0.101, the port is 5060, use the IP phone to call the IP address 13529101232@192.168.0.101 and then the first idle wireless port in the port group of step 2 will make an outgoing call to 13529101232.

## Special Instructions:

- As the device will gradually heat up while being used, please maintain good ventilation to prevent sudden failure, ensuring that the ventilation holes are never jammed.
- During runtime, if the alarm indicator lights up or flashes, it indicates that the device goes abnormal. If you cannot figure out and solve the problem by yourself, please contact our technicians for help. Otherwise it may lead to a drop in performance or unexpected errors.

## Chapter 3 WEB Configuration

### 3.1 System Login

Type the IP address into the browser and enter the login interface. See Figure 3-1.



Figure 3-1 Login Interface

The gateway only serves one user, whose original username and password are both 'admin'. You can change the username and the password via 'System Tools → Change Password' on the WEB interface. For detailed instructions, refer to [3.11.6 Change Password](#).

After login, you can see the System Info interface.

### 3.2 Operation Info

Operation Info includes four parts: **System Info**, **Port State**, **Call Count** and **SIP Message Count**, showing the current running status of the gateway. You can press the following button to unfold or fold them.



Figure 3-2 Button to Unfold/fold

#### 3.2.1 System Info




























On the system info interface, you can click **Refresh** to obtain the latest system information. See the table below for details.




Item	Description
<b>MAC Address</b>	MAC address of LAN.
<b>IP Address</b>	The three parameters from left to right are IP address, subnet mask and default gateway of LAN.
<b>DNS Server</b>	DNS server address of LAN.

<b>Receive Packets</b>	The amount of receive packets after the gateway's startup, including three options: All, Error and Drop.
<b>Transmit Packets</b>	The amount of transmit packets after the gateway's startup, including three options: All, Error and Drop.
<b>Current Speed</b>	Show the current speed of data receiving and transmitting.
<b>Work Mode</b>	Show the work mode of the network, including four modes: 10 Mbps Half Duplex, 10 Mbps Full Duplex, 100 Mbps Half Duplex, 100 Mbps Full Duplex.
<b>Runtime</b>	Time of the gateway keeping running normally after startup, which will be automatically updated.
<b>WEB</b>	Current version of the WEB interface.
<b>Gateway</b>	Current version of the gateway service.
<b>Serial Num</b>	Unique serial number of a wireless gateway.
<b>Authorization Code</b>	The authorization codes vary from different wireless modules.
<b>FPGA</b>	Current version of FPGA.
<b>U-boot</b>	Current version of Uboot.
<b>Kernel</b>	Current version of the system kernel on the gateway.
<b>Device Type</b>	Type of the wireless gateway.

### 3.2.2 Port State

The Port State interface shows such information as the port type, the port state, etc. See the table below for details.

Item	Description																														
Port	Port number on the device.																														
Type	Port type on the device. So far, only GSM, WCDMA, CDMA and LTE types are supported.																														
State	Displays the port state in real time. You can move the mouse onto the port state icon for detailed state information.																														
	<table><tr><th>State</th><th>Icon</th><th>Description</th></tr><tr><td>Idle</td><td></td><td>The port is available.</td></tr><tr><td>Off-hook</td><td></td><td>The port picks up the call.</td></tr><tr><td>Wait Answer</td><td></td><td>The port receives the ringback tone and is waiting for the called party to pick up the phone.</td></tr><tr><td>Ringing</td><td></td><td>The port is in the ringing state.</td></tr><tr><td>Talking</td><td></td><td>The port is in a conversation.</td></tr><tr><td>Dialing</td><td></td><td>The port is dialing.</td></tr><tr><td>Pending</td><td></td><td>The port is in the pending state.</td></tr><tr><td>Internal State</td><td></td><td>Internal state of the port.</td></tr><tr><td>Unusable</td><td></td><td>The port is unavailable. And the exact cause is shown in the following brackets: Module Detecting..., Module Starting..., SIM Card Detecting..., BS Connecting..., Module Disabled, or SIM Card Lost.</td></tr></table>	State	Icon	Description	Idle		The port is available.	Off-hook		The port picks up the call.	Wait Answer		The port receives the ringback tone and is waiting for the called party to pick up the phone.	Ringing		The port is in the ringing state.	Talking		The port is in a conversation.	Dialing		The port is dialing.	Pending		The port is in the pending state.	Internal State		Internal state of the port.	Unusable		The port is unavailable. And the exact cause is shown in the following brackets: Module Detecting..., Module Starting..., SIM Card Detecting..., BS Connecting..., Module Disabled, or SIM Card Lost.
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Voice Type	Displays the voice type of the current call.																														

	<b>Note:</b> For the LTE series gateway, it is Net type and will display the network type of the current call.
<b>Direction</b>	Displays the direction of the call on port.
<b>CallerID</b>	Displays the CallerID of the call on port.
<b>CalleeID</b>	Displays the CalleeID of the call on port.
<b>SIM Card</b>	Displays the real-time state of the SIM card. Move the mouse onto the corresponding icon and you can find the exact state of the SIM card.  means card inserted,  means no card inserted,  means card in use. Note: This item is unavailable for SMG4004 and SMG4008 series.
<b>Cell Phone No.</b>	Displays the number of the corresponding channel set in Wireless Parameters.
<b>Connection</b>	Displays the connection status between the SIM card and the base station.
<b>Signal</b>	Displays the signal intensity of the wireless module.
<b>SIP Reg Status</b>	Displays the registration status of the port.

### 3.2.3 Call Count

The Call Count Interface shows the detailed information about all the calls counted from the startup of the gateway service to the latest open or refresh of this interface. You can click **Refresh** to obtain the current call count information. See the table below for details.

Item	Description
<b>Call Direction</b>	A condition for call count, two options available: <i>IP→Tel</i> and <i>Tel→IP</i> .
<b>Total Calls</b>	Total number of calls in a specified call direction.
<b>Successful Calls</b>	Total number of successful calls in conversation.
<b>Busy</b>	Total number of calls which fail as the called party has been occupied and replies a busy message.
<b>No Answer</b>	Total number of calls which fail as the called party does not pick up the call in a long time or the calling party hangs up the call before the called party picks it up.
<b>Routing Failure</b>	Total number of calls which fail because no routing rules are matched.
<b>Dialing Failure</b>	Total number of calls which fail as the called party number does not conform to the dialing rule or due to dialing timeout.
<b>Unknown Failure</b>	Total number of calls which fail due to unknown reasons.
<b>Total Calls</b>	The total numbers of the outgoing calls.
<b>Remote Ringing</b>	The count of the calls which bring the remote terminal into the ringing state.
<b>Talking Count</b>	The count of the outgoing calls which are answered by remote terminal.
<b>Failure Count</b>	The count of the failure calls, i.e. the counts of the calls which cannot be made out by the port.
<b>Continuous Failure</b>	The count of the calls which failed continuously twice or more.
<b>Call Completion Rate</b>	The percentage of successful calls to total calls.
<b>Accumulated Time</b>	The total time of the calls which are answered by the remote terminal.
<b>Average Time</b>	The average time length of each call answered by the remote terminal.

### 3.2.4 SIP Message Count

The SIP Message Count interface records the amount of the normal SIP messages that are sent/received or repeatedly sent/received during the period from the startup of the gateway service to the latest open or refresh of the interface. Click **Refresh** to refresh the count of SIP messages, or click **Clear** to clear the current count of SIP messages.

## 3.3 Quick Config

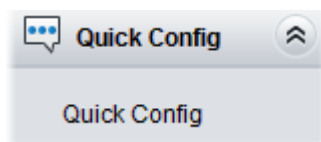
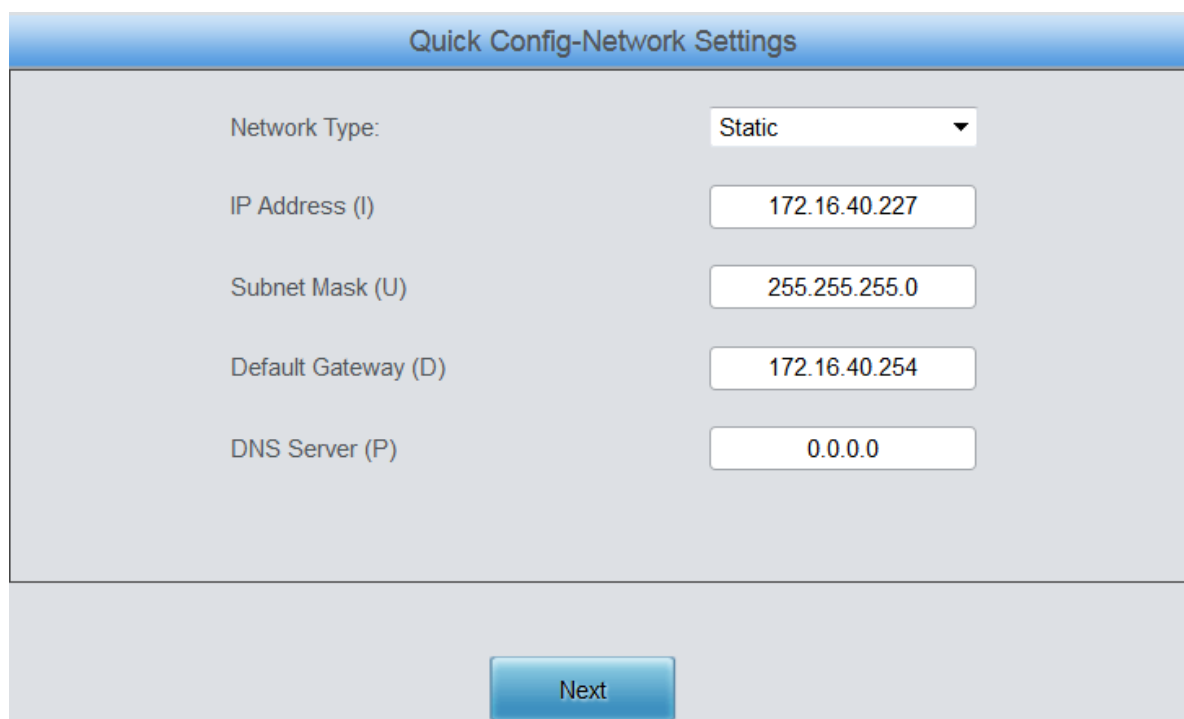


Figure 3-3 Quick Config Interface

See Figure 3-3 for the Quick Config interface. Follow the gateway Quick Configuration wizard and you can easily complete the settings on network, SIP and Port. The gateway can work normally after configuration.

Refer to [3.5.1 Network](#) for detailed settings. After configuration, click **Next** to enter the SIP Settings interface.



Quick Config-Network Settings	
Network Type:	Static
IP Address (I)	172.16.40.227
Subnet Mask (U)	255.255.255.0
Default Gateway (D)	172.16.40.254
DNS Server (P)	0.0.0.0
<b>Next</b>	

Figure 3-4 Quick Config-Network Settings Interface

The configuration items on the Quick Config-SIP Settings interface are the same as those on the SIP interface. Refer to [3.4.1 SIP](#) for detailed settings. You are required to fill with the information about the registrar if the gateway must be registered. After configuration, click **Back** to go back to the Network Settings interface; click **Next** to enter the Port Settings interface.

Quick Config-SIP Settings

Registrar IP Address

Registrar Port

Spare Registrar IP Address

Spare Registrar Port

Registry Validity Period (s)

Back

Next

Figure 3-5 Quick Config-SIP Settings Interface

The configuration items on the Port Settings interface are the same as those on the Port interface. Refer to [3.8.1 Port](#) for detailed settings. After configuration, click **Back** to go back to the SIP Settings interface; click **Next** to enter the Quick Config-Completion interface.

Port Settings												Batch Modify
Port	SIP Account	Authentication Username	Connection Method	Bound Number	Forbid Outgoing Call	Forbid Incoming Call	Caller ID Detection	Reg Status	Echo Canceller	Color Ring	Color Ring Index	Modify
1	8001	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
2	8002	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
3	8003	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
4	8004	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
5	8005	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
6	8006	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
7	8007	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
8	8008	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
9	8009	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
10	8010	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
11	8011	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
12	8012	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
13	8013	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
14	8014	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
15	8015	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
16	8016	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
17	8017	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
18	8018	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
19	8019	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
20	8020	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
21	8021	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
22	8022	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
23	8023	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
24	8024	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
25	8025	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
26	8026	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
27	8027	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
28	8028	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
29	8029	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
30	8030	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
31	8031	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	
32	8032	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---	

Back

Next

Figure 3-6 Port Settings Interface

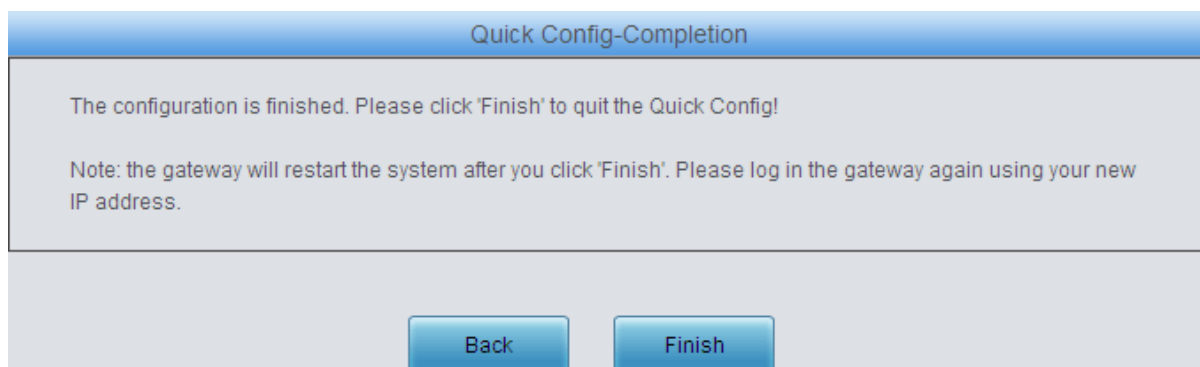


Figure 3-7 Quick Config-Completion Interface

Click **Back** to go back to the Port Settings interface; click **Finish** to finish the Quick Config wizard and now the gateway can work normally with basic configuration.

## 3.4 VoIP Settings

VoIP Settings includes six parts: **SIP**, **SIP Compatibility**, **SIP Station**, **SIP Server**, **NAT Setting** and **Media**. **SIP Settings** is used to configure the general SIP parameters, **SIP Compatibility** is used to set which SIP servers and SIP messages will the gateway be compatible with, **SIP Station** is to set the basic information of the SIP station, **SIP Server** is to set the basic information of the SIP server, **NAT Setting** is used to configure the parameters for NAT, and **Media Settings** is to set the RTP port and the payload type.

### 3.4.1 SIP

On the SIP Settings interface you can configure the general SIP parameters. After configuration, click **Save** to save your settings into the gateway or click **Reset** to restore the configurations. If a dialog box pops up after you save your settings asking you to restart the system, do it immediately to apply the changes. Refer to [3.11.9 Restart](#) for detailed instructions. See the table below for details.

Item	Description
<b>SIP Port</b>	Monitoring port of SIP signaling. The value range of it must be greater than 1024 and less than 65535, with the default value of 5060.
<b>Send 180</b>	Sets whether to send the 180 message to respond to the ringing tone when the SIP end serves as the called party.
<b>Called Number Prefix for 180 Reply</b>	Once the feature "Send 180" is enabled, the gateway will reply the 180 message to those calls which have the calleeID with the designated prefix; otherwise, it will reply the 183 message. By default, the value is null, that is, replying the 183 message to all calls.
<b>Register Status</b>	Registration status of the gateway. When <b>Register Gateway</b> is set to <i>No</i> , the value of this item is <i>Unregistered</i> ; when <b>Register Gateway</b> is set to <i>Yes</i> , the value of this item is either <i>Failed</i> or <i>Registered</i> .
<b>Register Gateway</b>	Sets whether to register the gateway as a whole. The default value is <i>No</i> . Only when this configuration is set to <i>Yes</i> can you see the configuration items <b>SIP Account</b> and <b>Password</b> .
<b>SIP Account</b>	When the gateway initiates a call to SIP, this item corresponds to the username of SIP.
<b>Password</b>	Registration password of the gateway. To register the gateway to SIP, both

	configuration items <b>SIP Account</b> and <b>Password</b> should be filled in.
<b>Authentication Username</b>	Authentication username for registration.
<b>Registrar IP Address</b>	Address of the registry server for the gateway to register.
<b>Registrar Port</b>	Signaling port of the registry server.
<b>Spare Registrar Server</b>	Check the enable checkbox to enable the spare registrar server. By default, it is <b>disabled</b> .
<b>Spare Registrar IP Address</b>	Address of the spare registry server for the gateway to register. The gateway will enable the spare registrar server if the master registrar server has no reply, or the master server is detected with no response in case the item <b>Detection Server Cycle</b> is enabled.
<b>Spare Registrar Port</b>	Signaling port of the spare registry server.
<b>Registry Validity Period</b>	Validity period of the SIP registry. Once the registry is overdue, the gateway should be registered again. This configuration item is valid only when <b>Register Gateway</b> is set to Yes. Range of value: 10~3600, calculated by s, with the default value of 600.
<b>Multi-Registrar Server Mode</b>	Tick the checkbox before to enable the multi-registrar server mode. By default, it is <b>disabled</b> .
<b>SIP Transport Protocol</b>	There are two modes <b>UDP</b> and <b>TCP</b> available for running the SIP protocol. The default value is <b>UDP</b> .
<b>Switch Signal Port if SIP Registration Failed</b>	If the SIP registration fails, the SIP signaling port N will switch to N+1 for a new registration. It will continue until the registration succeeds. By default, it is disabled.
<b>IMS Network</b>	Once this feature is enabled, the gateway will send signaling messages to the corresponding externally bound address and port when it registers to the server. By default, this feature is <b>disabled</b> . Only when this feature is <b>enabled</b> will these items <b>Externally Bound Address</b> , <b>Externally Bound Port</b> and <b>Authentication Username</b> be shown.
<b>Externally Bound Address</b>	Externally bound IP address for registration.
<b>Externally Bound Port</b>	Externally bound port for registration.

### 3.4.2 SIP Compatibility

On the SIP Compatibility interface you can configure the SIP parameters to determine which SIP servers and SIP messages will the gateway be compatible with. After configuration, click **Save** to save your settings into the gateway or click **Reset** to restore the configurations.

See the table below for details.

Item	Description
<b>Obtain CalledID from</b>	There are two optional ways to obtain the called party number: from "To" Field and from "Request" Field. The default value is "Request" Field.
<b>Set CallerID Position</b>	There are two options to set the position of the calling party number: "Displayname of From Field" and "Username of From Field". The default value is "Username of




	<i>From Field</i> '.
<b>Obtain CallerID from</b>	There are two optional ways to obtain the calling party number: from "Displayname of From Field" and from "Username of From Field". The default value is " <i>Username of From Field</i> ".
<b>Use Contact Address</b>	Sets whether to send the request message according to the content of Contact, with the default setting of <i>disabled</i> . As it is disabled, if the Contact field indicates an IP address within the LAN, the request message will be sent according to the source address; if the Contact field indicates an IP address belonging to the WAN, the request message will be sent according to this IP address.
<b>Reply To Source Address</b>	Once this feature is enabled, the gateway will reply the source address in the invite message. As the item <b>Use Contact Address</b> conflicted with this item, you may now shield the other one while enabling one of them.
<b>Two Stage Dialing for SIP Incoming Call</b>	Once this feature is enabled, the incoming call from SIP should perform the two stage dialing operation. By default this feature is disabled.
<b>Maximum Wait Answer Time</b>	Sets the maximum time for the SIP channel to wait for the answer from the called party of the outgoing call it initiates. If the call is not answered within the specified time period, it will be canceled by the channel automatically. The default value is 60, calculated by s.
<b>SIP Station Supported</b>	Once this feature is enabled, a SIP terminal can be registered to the gateway to become a SIP station. By default this feature is disabled.
<b>Set SIP Identifying</b>	Sets the SIP identifying content in the SIP call message. The default setting is <i>Gateway</i> .
<b>Maximum Wait RTP Time</b>	Sets the maximum time for the SIP channel to wait for the RTP packet. If no RTP packet is received within the specified time period, the channel will enter the pending state automatically and release the call. The default value is 0 ( <i>disabled</i> ), calculated by s.
<b>Ignore ACK</b>	Once this feature is enabled, it is not necessary for the gateway to wait for the ACK message after sending the 200OK message to establish a call. By default it is <i>disabled</i> .
<b>Iptable for SIP Calls</b>	Only some special SIP messages, which can be configured by users, are allowed to send to the gateway.
<b>SIP Encryption</b>	Once this feature is enabled, you can encrypt the SIP signal following selecting an encryption criterion and setting a key. By default it is <i>disabled</i> .
<b>Encryption Criterion</b>	The criterion used to encrypt the SIP signal. At present only VOS1.1 is supported.
<b>Identifier</b>	The identifier field of the VOS encryption, which is used to obtain the key of the SIP encryption.
<b>Key</b>	The key to encrypt the SIP signal.
<b>RTP Encryption</b>	Once this feature is enabled, you can encrypt the RTP package. By default it is <i>disabled</i> .
<b>Abnormal Call Hangup Detection</b>	Sets the interval between checks of the remote end's abnormal hangup, with the default value of 0 (feature disabled), calculated by s. It is suggested to set to 10s if this feature is necessary to be used.

<b>Server Status Detection</b>	The interval of sending a heartbeat packet to detect the master registrar server status, with the default value of 0 (feature disabled), calculated by s. It is suggested to set to 15s if this feature is necessary to be used.
<b>Available Port Negotiation</b>	When this feature is enabled, the gateway will send messages to the preset negotiation server (e.g. VOS server) to let it know the number of available ports on the gateway. By default this feature is disabled.
<b>Cycle, Address</b>	Cycle means how soon will the gateway send a message; Address indicates the server address (e.g. VOS server).
<b>Occasion to Reply 183</b>	Sets the occasion to reply the 183 message. Two options are available: Immediately and After ringing, with the default value of <i>Immediately</i> .
<b>Occasion to Reply 200 Ok</b>	Sets the occasion to reply 200 OK. Three options are available: Immediately, After pickup and After ringing, with the default value of <i>After pickup</i> .
<b>Delays</b>	Sets the time of delay to reply the 200OK message, with the default value of 0.

### 3.4.3 SIP Station

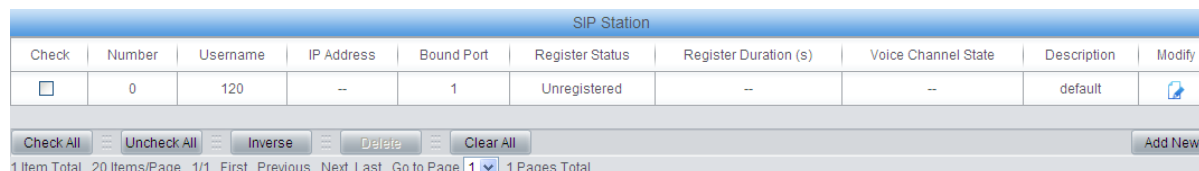
A SIP terminal can be registered to the gateway to become a SIP station. Tick the option of '**SIP Station Supported**' on [3.4.2 SIP Compatibility](#) interface, and you will see the item SIP Station on the VoIP Settings menu. Click '**SIP Station**' to go into the SIP Station interface. By default, there is no available SIP station.

Click  to go into the SIP Station interface. You can configure basic SIP station information on this interface. The bound port to a SIP station must be a wireless port and unique. The username must be the same as that used to register the SIP terminal to the gateway.

See the table below for details:

Item	Description
<b>Number</b>	The logical number for a SIP station to register to the gateway.
<b>Username</b>	The username used to register a SIP station to the gateway.
<b>Password</b>	The password used to register a SIP station to the gateway.
<b>Bound Port</b>	The wireless port which is bound to the SIP station.
<b>Description</b>	It is user-defined, with the default value of <i>default</i> .
<b>Batch Setting</b>	Used to set multiple SIP stations at the same time.

After configuration, click **Save** to save the settings into the gateway or click **Close** to cancel the settings. See Figure 3-8 for the applied SIP station information.




SIP Station									
Check	Number	Username	IP Address	Bound Port	Register Status	Register Duration (s)	Voice Channel State	Description	Modify
<input type="checkbox"/>	0	120	--	1	Unregistered	--	--	default	
Check All   Uncheck All   Inverse   Delete   Clear All   Add New									
1 Item Total   20 Items/Page   1/1   First   Previous   Next   Last   Go to Page 1   1 Pages Total									

Figure 3-8 SIP Station Interface

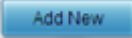
Click **Modify** in the above figure to modify the configuration of the SIP station.

To delete a SIP station, check the checkbox before the corresponding index in Figure 3-8 and click the **Delete** button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all SIP stations at a time, click the **Clear All**

button in Figure 3-8.

### 3.4.4 SIP Server

The gateway supports the multi-registrar server feature. Enable the feature of '**Multi-Registrar Server Mode**' on the [SIP](#) interface (see [3.4.1 SIP](#)) and you will see the item SIP Server under the VoIP Settings menu. Click '**SIP Server**' to go into the SIP Server interface. By default, there is no available SIP server.

Click  to add SIP servers manually. You can configure basic SIP server information on this interface.

All the items except Index and Description are the same as those on [the SIP](#) interface ([3.4.1 SIP](#)).

Item	Description
<b>Index</b>	The index of each SIP server. The gateway supports up to 8 SIP servers.
<b>Description</b>	More information about each SIP server, with the default value of <i>default</i> .

After configuration, click **Save** to save the settings into the gateway or click **Cancel** to cancel the settings. See Figure 3-9 for the SIP server management interface.

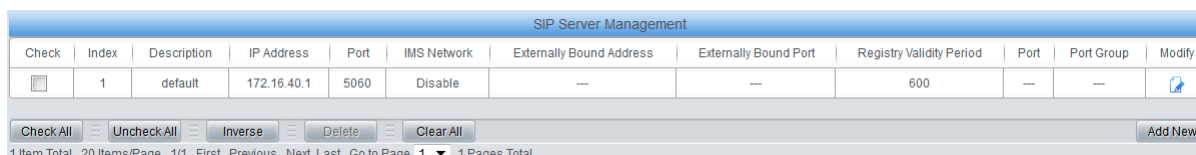


Figure 3-9 SIP Server Management

Click **Modify** in the above figure to modify the configuration of the SIP server.

To delete a SIP server, check the checkbox before the corresponding index in Figure 3-9 and click the **Delete** button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all SIP servers at a time, click the **Clear All** button in Figure 3-9.

### 3.4.5 NAT Setting

On the NAT Setting interface you can configure the parameters for NAT. After configuration, click **Save** to save your settings into the gateway or click **Reset** to restore the configurations.

The table below explains the items shown on the interface.

Item	Description
<b>STUN Server</b>	Sets whether to enable the STUN server for NAT traversal. By default the STUN server is disabled.
<b>NAT Type</b>	Detected NAT (Network Address Translation) type. The gateway will return the NAT type automatically in case <b>STUN Server</b> is enabled. It includes 9 types: unknown; no NAT; ConeNat; RestrictedNat; PortRestrictedNat; Symmetric NAT; Symmetric NAT with firewall; can't detect over (fail to send detect message) and fail to detect (No reply from the stun server).
<b>STUN Server Address</b>	Address of the server for STUN traversal.
<b>Mapping Address</b>	It should be filled in when there exists NAT or other mapping relationships which

	<p>leads to the failure of direct communication between the gateway and the destination address, so as to ask the remote end to send signaling messages or voice data to it during the signaling or voice communication between the gateway and the destination.</p> <p><b>Note:</b> Once this item is filled out, it will be used as the first choice even if Rport and NAT IP are enabled.</p>
<b>RTP Self-adaption</b>	<p>When this feature is enabled, the RTP reception address or port carried by the signaling message from the remote end, if not consistent with the actual state, will be updated to the actual RTP reception address or port. By default, this feature is <i>disabled</i>.</p>
<b>Rport</b>	<p>When this feature is enabled, a corresponding Rport field will be added to the Via message of SIP. The default value is <i>enabled</i>.</p>
<b>Auto Detect NAT IP</b>	<p>When this feature is enabled, the gateway will parse the corresponding address and port in the message returned by Rport so as to use them for the following communication. By default, this feature is <i>disabled</i>.</p> <p><b>Note:</b> This feature gets valid only when Rport is enabled.</p>

### 3.4.6 Media

On the Media Settings interface you can configure the RTP port and payload type depending on your requirements. After configuration, click **Save** to save your settings into the gateway or click **Reset** to restore the configurations. If a dialog box pops up after you save your settings asking you to restart the system, do it immediately to apply the changes. Refer to [3.11.9 Restart](#) for detailed instructions. The table below explains the items shown on the interface.

Item	Description
<b>DTMF Transmit Mode</b>	Sets the transmit mode for the IP channel to send DTMF signals. The optional values are <i>RFC2833</i> , <i>In-band</i> and <i>Signaling</i> , with the default value of <i>RFC2833</i> .
<b>RFC2833 Payload</b>	Payload of the RFC2833 formatted DTMF signals on the IP channel. Range of value: 90~127, with the default value of 101.
<b>RTP Port Range</b>	Supported RTP port range for the IP end to establish a call conversation, with the lower limit of 10000 and the upper limit of 60000 and the difference between larger than 480. The default value is 50000-50767.
<b>Silence Suppression</b>	Sets whether to send comfort noise packets to replace RTP packets or never to send RTP packets to reduce the bandwidth usage when there is no voice signal throughout an IP conversation. The optional values are <i>Enable</i> and <i>Disable</i> , with the default value of <i>Disable</i> .
<b>JitterBuffer</b>	Acceptable jitter for data packets transmission over IP, which indicates the buffering capacity. A larger JitterBuffer means a higher jitter processing capability but as well as an increased voice delay, while a smaller JitterBuffer means a lower jitter processing capability but as well as a decreased voice delay. Range of value: 20~200, calculated by ms, with the default value of 20.

<b>JitterScaling</b>	Jitter scaling factor which is used to adjust the excessive jitter of the RTP flows over IP. The more excessive the jitter is, the larger the scaling factor should be. The value range is 8~256, with the default value of 8. You'd better set this value to 8 or a multiple of 8.																										
<b>Voice Gain Output from IP</b>	Adjusts the gain of the voice output from IP. Range of value: -24~12, calculated by dB, with the default value of 0.																										
<b>AGC</b>	If the AGC (Automatic Gain Control) feature is enabled, the gateway will automatically adjust the input signal amplitude, increasing that of small signals and decreasing that of large signals.																										
<b>Target Energy Threshold</b>	Set the target energy of the AGC, range of value: -50~0, calculated by dB, with the default value of 0.																										
<b>Maximum Gain Threshold</b>	Set the maximum gain threshold that will be applied to the signal. Range of value: 0~48, calculated by dB, with the default value of 48.																										
<b>Maximum Attenuation Threshold</b>	Set the maximum attenuation that will be applied to the signal. Range of value: -42~0, calculated by dB, with the default value of 0.																										
<b>Minimum Input Energy</b>	Set the minimum threshold for the energy processed by AGC. Signals below this threshold will not be processed by AGC. Range of value: -60~ -25, calculated by dB, with the default value of -60.																										
<b>CODEC Priority</b>	Supported CODECs and their corresponding priority for the IP end to establish a call conversation. The table below explains the sub-items:																										
	<table><tr><th>Sub-item</th><th>Description</th></tr><tr><td>Priority</td><td>Priority for choosing the CODEC in an SIP conversation. The smaller the value is, the higher the priority will be.</td></tr><tr><td>CODEC</td><td>Three optional CODECs are supported: G711A, G711U, G729A/B, G723, G722, AMR and iLBC.</td></tr><tr><td>Packing Time</td><td>Time interval for packing an RTP packet, calculated by ms.</td></tr><tr><td>Bit Rate</td><td>The number of thousand bits (excluding the packet header) that are conveyed per second.</td></tr></table>	Sub-item	Description	Priority	Priority for choosing the CODEC in an SIP conversation. The smaller the value is, the higher the priority will be.	CODEC	Three optional CODECs are supported: G711A, G711U, G729A/B, G723, G722, AMR and iLBC.	Packing Time	Time interval for packing an RTP packet, calculated by ms.	Bit Rate	The number of thousand bits (excluding the packet header) that are conveyed per second.																
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	Packing Time	Time interval for packing an RTP packet, calculated by ms.																									
	Bit Rate	The number of thousand bits (excluding the packet header) that are conveyed per second.																									
	By default, all of the seven CODECs are supported and ordered G711A, G711U, G729A/B, G723, G722, AMR and iLBC by priority from high to low.																										
	The packing time and bit rate supported by different CODECs are listed in the table below. Those values in bold face are the default values.																										
	<table><tr><th>COEDC</th><th>Packing Time (ms)</th><th>Bit Rate (kbps)</th></tr><tr><td>G711A</td><td>10 / <b>20</b> / 30 / 40 / 60</td><td><b>64</b></td></tr><tr><td>G711U</td><td>10 / <b>20</b> / 30 / 40 / 60</td><td><b>64</b></td></tr><tr><td>G729A/B</td><td>10 / <b>20</b> / 30 / 40 / 60</td><td><b>8</b></td></tr><tr><td>G723</td><td><b>30</b> / 60</td><td>5.3 / <b>6.3</b></td></tr><tr><td>G722</td><td>10 / 20 / <b>30</b> / 40</td><td><b>64</b></td></tr><tr><td>AMR</td><td><b>20</b> / 40 / 60</td><td>4.75</td></tr><tr><td>iLBC</td><td><b>20</b> / 40</td><td>15.2</td></tr><tr><td></td><td><b>30</b> / 60</td><td><b>13.3</b></td></tr></table>	COEDC	Packing Time (ms)	Bit Rate (kbps)	G711A	10 / <b>20</b> / 30 / 40 / 60	<b>64</b>	G711U	10 / <b>20</b> / 30 / 40 / 60	<b>64</b>	G729A/B	10 / <b>20</b> / 30 / 40 / 60	<b>8</b>	G723	<b>30</b> / 60	5.3 / <b>6.3</b>	G722	10 / 20 / <b>30</b> / 40	<b>64</b>	AMR	<b>20</b> / 40 / 60	4.75	iLBC	<b>20</b> / 40	15.2		<b>30</b> / 60
COEDC	Packing Time (ms)	Bit Rate (kbps)																									
G711A	10 / <b>20</b> / 30 / 40 / 60	<b>64</b>																									
G711U	10 / <b>20</b> / 30 / 40 / 60	<b>64</b>																									
G729A/B	10 / <b>20</b> / 30 / 40 / 60	<b>8</b>																									
G723	<b>30</b> / 60	5.3 / <b>6.3</b>																									
G722	10 / 20 / <b>30</b> / 40	<b>64</b>																									
AMR	<b>20</b> / 40 / 60	4.75																									
iLBC	<b>20</b> / 40	15.2																									
	<b>30</b> / 60	<b>13.3</b>																									

## 3.5 Advanced Settings

Advanced Settings includes twelve parts: **Network**, **System Param**, **Service Config**, **Dialing Rule**, **Function Key**, **Cue Tone**, **Color Ring**, **QoS**, **Tone Generator**, **Tone Detector**, **CDR Query** and **VPN**. **Network** is used to configure the general properties of the network port; **System Param** is used to configure some properties of the system; **Service Config** is used to configure some properties which corresponds to the service; **Dialing Rule** is used to set the judging conditions for dialing; **Function Key** is used to set a cluster of combination keys for you to query or set the network port; **Cue Tone** is used to set the gateway language for playing voice and the voice file used for the two-stage dialing; **Color Ring** is used to upload the color ring file which can be set as a ringback tone for an incoming call from IP to wireless port; **QoS** uses the differentiated services technology to increase the gateway's service quality; **Tone Generator** is used to configure some properties of tones sent from the gateway; **Tone Detector** is used to configure some properties of tones received by the gateway; **CDR Query** is used to inquire the detailed call record; **VPN** makes use of the tunnel technology to transport the data, and the methods of user authentication and data encryption to prevent the data being read and distorted when they are transported on the public network.

### 3.5.1 Network

On the Network Settings interface you can configure network parameters. A gateway has two LANs which can be configured with the same network type, IP address, subnet mask, default gateway and DNS server to realize the feature of hot backup. There are three options in type: Static, DHCP and PPPoE.

After configuration, click **Save** to save the above settings into the gateway or click **Reset** to restore the configurations. After changing the IP address, you shall log in the gateway again using your new IP address.

### 3.5.2 System Param

See the table below for the configuration items on the System Parameters Setting interface.

Item	Description
<b>WEB Port</b>	The port which is used to access the gateway via WEB. The default value is 80.
<b>Access Setting</b>	Sets the IP addresses which can access the gateway via WEB. By default, all IPs are allowed. You can set an IP whitelist to allow all IPs within it to access the gateway freely. Also you can set an IP blacklist to forbid all IPs within it to access the gateway.
<b>SYSLOG Enabled</b>	Sets whether to enable SYSLOG. It is required to fill in <b>SYSLOG Server Address</b> and <b>SYSLOG Level</b> in case SYSLOG is enabled. By default, <b>SYSLOG</b> is disabled.
<b>Server Address</b>	Sets the SYSLOG server address for log reception.
<b>SYSLOG Level</b>	Sets the SYSLOG level. There are three options: <i>ERROR</i> , <i>WARNING</i> , <i>INFO</i> and <i>DEBUG</i> . The default value is <i>INFO</i> .
<b>AT Debug Enabled</b>	Sets whether to enable the AT debug feature, with the default value of <i>No</i> . Once this feature is enabled, the related information about AT will be output to the SYSLOG.
<b>Echo Mode Enabled</b>	Sets whether to enable the echo mode, with the default value of <i>No</i> . Once this feature is enabled, both the sent and received information will be displayed.
<b>Port</b>	Select the port to execute the AT debug. It is allowed to choose a port or all ports.
<b>CDR Enabled</b>	Sets whether to enable the feature of CDR. It is required to fill in <b>Server Address</b> and <b>Server Port</b> in case CDR is enabled. By default, <b>CDR</b> is disabled.



<b>Server Address</b>	Sets the server address to receive CDR.
<b>Server Port</b>	Sets the server port to receive CDR.
<b>Save CDR</b>	Sets whether to save CDR, with the default value of <i>NO</i> .
<b>Amount of Saved CDR</b>	Sets the amount of saved CDR. Range of value: 200~10000, with the default value of 5000.
<b>API Enabled</b>	When this feature is enabled, the remote terminal can invoke the API interface. The default value is <i>No</i> .
<b>Remote IP Address allowed to Invoke API</b>	Sets the remote IP addresses which are allowed to invoke the API interface. Up to 5 addresses can be configured and each of them are separated by “,”. “*” denotes all IP addresses are allowed.
<b>Username for API Call, Password for API Call</b>	The authorized username and password for calling the API interface.
<b>Time Calibration</b>	Sets the calibration mode for the time. Three options available: NTP, Synchronized with Operator and Close, with the default value of <i>Synchronized with Operator</i> .
<b>NTP Server Address</b>	Sets the Server address for NTP time synchronization.
<b>Synchronizing Cycle</b>	Sets the cycle for NTP time synchronization. The default value is 3600.
<b>System Time</b>	The system time. Check the checkbox before <b>Modify</b> and change the time in the edit box if <i>Time Calibration</i> is set to Close.
<b>Time Zone</b>	The time zone of the gateway.
<b>Daily Restart</b>	Sets whether to restart the gateway regularly every day at the preset <b>Restart Time</b> . By default, this feature is disabled.
<b>Restart Time</b>	Sets the time to restart the gateway regularly.
<b>Clear Call Count 2 after Restart</b>	When this feature is enabled, the gateway will clear the data of Call Count 2 upon its restart. By default this feature is disabled.

### 3.5.3 Service Config

See the table below for the configuration items on the Service Config interface.

Item	Description
<b>Enable Two Stage Dialing Mode for PSTN Outgoing Calls</b>	Sets whether to enable the two stage dialing mode for PSTN outgoing calls. Under this mode, for an outgoing call from a wireless port, the IP side will hear the dial tone. If you fail to input the number during the schedule time, the wireless port will hang up the call automatically; otherwise, it will make an outgoing call to the number. The default value is <i>disabled</i> .
<b>Maximum Wait Time for PSTN Outgoing Calls</b>	Sets the maximum wait time waiting for the called party pickup during an outgoing call. Range of value: 5~120, calculated by s, with the default value of 60.

<b>Dial Interval</b>	Sets the largest interval between two digits of a dialing number. Range of value: 1~10, calculated by s, with the default value of 6. In case your dialing rules do not include ".", the call will fail if there is no digit dialed or no dialing rule matched during this interval; in case your dialing rules include ".", the gateway will wait until this interval ends and match to the dialing rule "." if there is no digit dialed or no other dialing rule matched during this interval.
<b>Waiting for Idle Time</b>	Set the waiting time of the channel before it goes into the idle state after the call finishes. The default value is 1500ms, and the value range is 0~60000.
<b>Busy Tone Detection Mode</b>	Sets the busy tone detection mode, three options available: Common (hangup on busy), Delayed (Delayed hangup on busy), Undetected (no busy detection). By default it is set to Common.
<b>Auto Hangup upon Ringback</b>	This feature is only supported by the GSM module. Note that when it is enabled, you are required to set 'SIP compatibility-Occasion to Reply 183' after ringing.
<b>Communication without Network</b>	Automatically routes a call to the wireless port in case of network failure or call timeout. The default value is <i>disabled</i> .
<b>IP→Tel Call Failure, Auto Transfer</b>	Sets whether to enable the feature of transferring the call to a designated IP automatically when a call from IP to Tel fails, with the default value of <i>disable</i> . If this feature is enabled, you are required to enter Target Number (Registered) or Target IP and Target Port (Unregistered).
<b>Tel → IP Call Failure, Auto SMS Reply</b>	Sets whether to enable the feature of automatic SMS reply when a call from Tel to IP fails, with the default value of <i>disable</i> . The following four options will be available if this feature is enabled. They are Unconnected, No Answer, Rejected, Fail to Connect. You can select any one of them and define the corresponding content to reply.
<b>Auto Disable Module if Fail to Register to SIP Server</b>	Once this feature is enabled, the gateway will automatically close this SIM card module to achieve the feature "Communication without Network" when it failed to register to the SIP server. The default value is <i>disabled</i> . It works with the feature <i>FWD on Unreachable</i> .
<b>Auto Lock SIM Card after Consecutive Call Failure</b>	When this feature is enabled, the times of call failure reaching the set value will trigger the operation of card locking. Call Failure Mode includes: <i>Busy</i> , <i>No Answer</i> , <i>Dial Failure</i> . Locking Time means the time of the port being locked: -1 means the card is always being locked; 0 means the card is unlocked; other values mean the exact time of the card being locked. When the feature 'Unlock by Plugging SIM Card in and out' is enabled, the port will be unlocked after you plug in and out the SIM card.
<b>Auto Reconnect to BS after Consecutive Call Failure</b>	When the outgoing calls from a port has failed for several times consecutively: for the SMG4004/SMG4008 series, the gateway will automatically reconnect the SIM card on this port to the base station; for the SMG4016/SMG4032 series, the gateway will automatically switch to other card slots available for the port and reconnect, the SIM card to the base station if there is no available card slot.
<b>Record SIM Number at Gateway Restart</b>	Once this feature is enabled, the number of the SIM card will be recorded when the gateway restarts and this SIM card will recover to work after restarting. The default value is <i>enabled</i> .



<b>Work Mode</b>	Sets the work mode for the echo canceller. There are two options: <i>Near-end cancellation</i> and <i>Both near-end and far-end cancellation</i> , with the default value of <i>Near-end cancellation</i> .
<b>Non-linear Processing</b>	Sets whether to enable the mode of non-linear processing. By default, this feature is <i>enabled</i> .
<b>Fixed Window Size</b>	Sets the size of the window for the fixed cancellation.
<b>Moving Window Size</b>	Sets the size of the window for the moving cancellation.

### 3.5.4 Dialing Rule

Considering efficiency, it is not acceptable that the gateway reports to the PBX or relevant devices every time it receives a number. Instead, we hope that the gateway can automatically judge the received number to see if it meets the set rule, if it is complete and if it is qualified to make outgoing calls. Therefore, a whole dialing plan, which consists of multiple dialing rules specifying the auto judging conditions, is required. Each dialing rule has a priority, which is used to restrict the sequence and avoid conflict.

Dialing Rule				
Check	Index	Dialing Rule	Description	Modify
<input type="checkbox"/>	81	400xxxxxx	default	
<input type="checkbox"/>	82	40[1-9]xxxxx	default	
<input type="checkbox"/>	83	4[1-9]xxxxxx	default	
<input type="checkbox"/>	84	800xxxxxxx	default	
<input type="checkbox"/>	85	80[1-9]xxxxx	default	
<input type="checkbox"/>	86	8[1-9]xxxxxxx	default	
<input type="checkbox"/>	87	[2-3,5-7]xxxxxxx	default	
<input type="checkbox"/>	88	1[3-5,7-8]xxxxxxxx	default	
<input type="checkbox"/>	89	100xx	default	
<input type="checkbox"/>	90	95xxx	default	
<input type="checkbox"/>	91	123xx	default	
<input type="checkbox"/>	92	111xx	default	
<input type="checkbox"/>	93	11[0,2-9]	default	
<input type="checkbox"/>	94	120	default	
<input type="checkbox"/>	95	0[3-9]xxxxxxxxxxx	default	
<input type="checkbox"/>	96	02xxxxxxxxxxx	default	
<input type="checkbox"/>	97	010xxxxxxxxxxx	default	
<input type="checkbox"/>	98	01[3-5,7-8]xxxxxxxxxxx	default	
<input type="checkbox"/>	99	.	default	

19 Items Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total

Figure 3-10 Dialing Rule Configuration Interface (Standard)

See Figure 3-10 for the Dialing Rule Configuration interface under the standard mode. The list in the above figure shows the dialing rules with their priorities and description, which can be added by the **Add New** button on the bottom right corner.

The table below explains the items shown in Figure 3-10.

Item	Description
<b>Index</b>	The unique index of each dialing rule, which denotes its priority. A dialing rule with a smaller index value has a higher priority and will be checked earlier while matching.

Description	Remarks for the dialing rule. It can be any information, but not be left empty.																																							
Dialing Rule	Up to 100 dialing rules can be configured in the gateway, and the maximum length of each dialing rule is 127 characters. See below for the meaning of each character in the dialing rule. The gateway will do instant matching for your dialing number based on the dialing rule and regard your dialing as finished upon receiving '#' or dialing timeout.																																							
	Character	Description	"0"~"9"	Digits 0~9.	"A"~"D"	Letters A~D.	"X"	A random number. A string of 'x's represents several random numbers. For example, 'xxx' denotes 3 random numbers.	"."	'.' indicates a random amount (including zero) of characters after it.	"[ ]"	'[ ]' is used to define the range for a number. Values within it only can be digits '0~9', punctuations '-' and ','. For example, [1-3,6,8] indicates any one of the numbers 1, 2, 3, 6, 8.	"_"	'-' is used only in '[ ]' between two numbers to indicates any number between these two numbers.	" , "	',' is used to separate numbers or number ranges, representing alternatives.	"*"	Only represents symbol "*".	"#"	Only set it at the beginning of the string, representing symbol "#".																				
	Character	Description																																						
	"0"~"9"	Digits 0~9.																																						
	"A"~"D"	Letters A~D.																																						
	"X"	A random number. A string of 'x's represents several random numbers. For example, 'xxx' denotes 3 random numbers.																																						
	"."	'.' indicates a random amount (including zero) of characters after it.																																						
	"[ ]"	'[ ]' is used to define the range for a number. Values within it only can be digits '0~9', punctuations '-' and ','. For example, [1-3,6,8] indicates any one of the numbers 1, 2, 3, 6, 8.																																						
	"_"	'-' is used only in '[ ]' between two numbers to indicates any number between these two numbers.																																						
	" , "	',' is used to separate numbers or number ranges, representing alternatives.																																						
"*"	Only represents symbol "*".																																							
"#"	Only set it at the beginning of the string, representing symbol "#".																																							
There are 19 dialing rules already configured on the gateway for easy use. See below for detailed information.																																								
<table><tr><th>Priority</th><th>Dialing Rule</th><th>Description</th></tr><tr><td>99</td><td>.</td><td>Any number in any length.</td></tr><tr><td>98</td><td>01[3-5,7-8]xxxxxxxx.</td><td>Any 12-digit number starting with 013, 014, 015, 017 or 018</td></tr><tr><td>97</td><td>010xxxxxxxx</td><td>Any 11-digit number starting with 010</td></tr><tr><td>96</td><td>02xxxxxxxx</td><td>Any 11-digit number starting with 02</td></tr><tr><td>95</td><td>0[3-9]xxxxxxxx</td><td>Any 12-digit number starting with 03, 04, 05, 06, 07, 08 or 09</td></tr><tr><td>94</td><td>120</td><td>Number 120.</td></tr><tr><td>93</td><td>11[0,2-9]</td><td>Number 110, 112, 113, 114, 115, 116, 117, 118 or 119</td></tr><tr><td>92</td><td>111xx</td><td>Any 5-digit number starting with 111</td></tr><tr><td>91</td><td>123xx</td><td>Any 5-digit number starting with 123</td></tr><tr><td>90</td><td>95xxx</td><td>Any 5-digit number starting with 95</td></tr><tr><td>89</td><td>100xx</td><td>Any 5-digit number starting with 100</td></tr><tr><td>88</td><td>1[3-5,7-8]xxxxxxxx</td><td>Any 11-digit number starting with 13, 14, 15, 17 or 18</td></tr></table>		Priority	Dialing Rule	Description	99	.	Any number in any length.	98	01[3-5,7-8]xxxxxxxx.	Any 12-digit number starting with 013, 014, 015, 017 or 018	97	010xxxxxxxx	Any 11-digit number starting with 010	96	02xxxxxxxx	Any 11-digit number starting with 02	95	0[3-9]xxxxxxxx	Any 12-digit number starting with 03, 04, 05, 06, 07, 08 or 09	94	120	Number 120.	93	11[0,2-9]	Number 110, 112, 113, 114, 115, 116, 117, 118 or 119	92	111xx	Any 5-digit number starting with 111	91	123xx	Any 5-digit number starting with 123	90	95xxx	Any 5-digit number starting with 95	89	100xx	Any 5-digit number starting with 100	88	1[3-5,7-8]xxxxxxxx	Any 11-digit number starting with 13, 14, 15, 17 or 18
Priority	Dialing Rule	Description																																						
99	.	Any number in any length.																																						
98	01[3-5,7-8]xxxxxxxx.	Any 12-digit number starting with 013, 014, 015, 017 or 018																																						
97	010xxxxxxxx	Any 11-digit number starting with 010																																						
96	02xxxxxxxx	Any 11-digit number starting with 02																																						
95	0[3-9]xxxxxxxx	Any 12-digit number starting with 03, 04, 05, 06, 07, 08 or 09																																						
94	120	Number 120.																																						
93	11[0,2-9]	Number 110, 112, 113, 114, 115, 116, 117, 118 or 119																																						
92	111xx	Any 5-digit number starting with 111																																						
91	123xx	Any 5-digit number starting with 123																																						
90	95xxx	Any 5-digit number starting with 95																																						
89	100xx	Any 5-digit number starting with 100																																						
88	1[3-5,7-8]xxxxxxxx	Any 11-digit number starting with 13, 14, 15, 17 or 18																																						

	87	[2-3,5-7]xxxxxxx	Any 8-digit number starting with 2, 3, 5, 6 or 7
	86	8[1-9]xxxxxx	Any 8-digit number starting with 81, 82, 83, 84, 85, 86, 87, 88 or 89
	85	80[1-9]xxxxx	Any 8-digit number starting with 801, 802, 803, 804, 805, 806, 807, 808 or 809
	84	800xxxxxxx	Any 10-digit number starting with 800
	83	4[1-9]xxxxxx	Any 8-digit number starting with 41, 42, 43, 44, 45, 46, 47, 48 or 49.
	82	40[1-9]xxxxx	Any 8-digit number starting with 401, 402, 403, 404, 405, 406, 407, 408 or 409
	81	400xxxxxxx	Any 10-digit number starting with 400

After configuration, click **Save** to save the above settings into the gateway or click **Close** to cancel the settings.

Click **Modify** in Figure 3-10 to modify the dialing rules. The configuration items on the dialing rule modification interface are the same as those on the **Add New Dialing Rule** interface.

To delete a dialing rule, check the checkbox before the corresponding index in Figure 3-10 and click the '**Delete**' button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all dialing rules at a time, click the **Clear All** button in Figure 3-10.

See Figure 3-11 for the Dialing Rule Configuration interface under the Character mode. You can edit the dialing rule list to add a new one or modify an old one. The exact meaning of each rule element is described on the page.

The screenshot shows the 'Dialing Rule' configuration interface in 'Character Mode'. At the top, there are tabs for 'Standard Mode' and 'Character Mode', with 'Character Mode' selected. Below the tabs is a title bar 'Dialing Rule' and a note: 'Note: The Dialing Rule contains such fields as Dialing Rule and Description. The priority decreases from top to bottom; adjacent fields are separated by a space; Symbol . denotes any string. Don't forget to save the configuration after your modification!'. The main area contains a list of dialing rules, each with a priority number, a rule pattern, and a description. The rules are: 400xxxxxx default, 40[1-9]xxxx default, 4[1-9]xxxxxx default, 800xxxxxx default, 80[1-9]xxxx default, 8[1-9]xxxxxx default, [2-3,5-7]xxxxxx default, 1[3-5,7-8]xxxxxxxx default, 100xx default, 95xxx default, 123xx default, 111xx default, 11[0,2-9] default, 120 default, and 0[3-9]xxxxxxxx default. At the bottom left, it says '20 Items Total'. At the bottom right, there is a 'Save' button.

Figure 3-11 Dialing Rule Configuration Interface (Character)

### 3.5.5 Function Key

On the function key configuration interface you can set a cluster of combination keys. An external phone can dial the wireless port and press the combination keys after hearing the speech prompt "Please dial the extension number" to query or set the network port.

Click “Enable” to enable the corresponding function key. The gateway will use the default function keys when the mode is set to default; and it will allow you to set new function keys when the mode is set to user-defined. Click **Save** to save your settings into the gateway.

### 3.5.6 Cue Tone

See the table below for the configuration items on the Cue Tone interface.

Item	Description
<b>Language</b>	Sets the language for the gateway to play voice, including two options Chinese and English. The default setting is <i>English</i> .
<b>Upload a file of cue tone</b>	Uploads a user-defined cue tone file to the gateway.
<b>Two Stage Dialing for PSTN Outgoing Calls Tips</b>	Sets the cue tone of two stage dialing for the PSTN outgoing calls, including two options: Dial Tone and File Playback. You are required to upload a file for playing if File Playback is selected.

Click **Save** to save the above settings into the gateway.

### 3.5.7 Color Ring

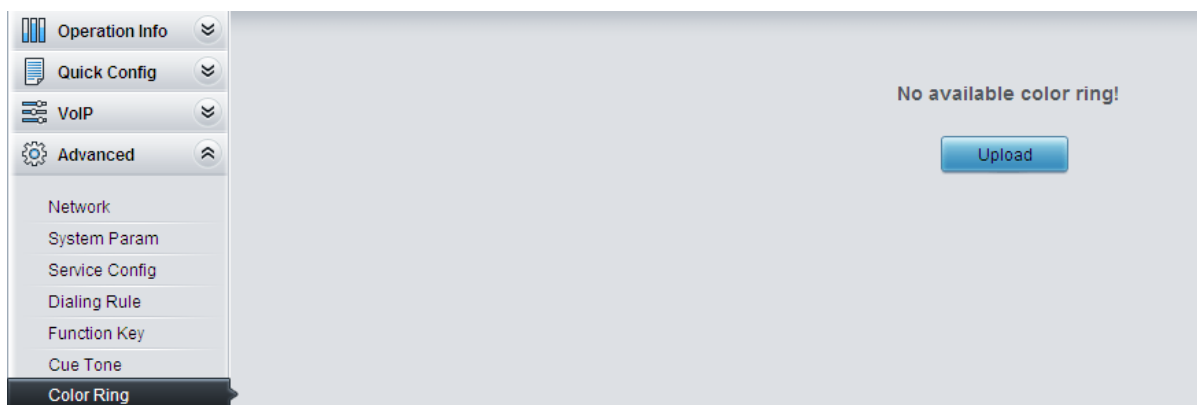
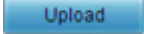
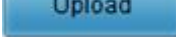



Figure 3-12 Color Ring Interface

By default, there is no available color ring on the gateway. See Figure 3-12. Click  to upload a new color ring manually.

See the table below for details.

Item	Description
<b>Index</b>	The unique index of each color ring to be uploaded.
<b>Description</b>	It is user-defined, with the default value of <i>default</i> .
<b>Color Ring</b>	The file of the color ring to be uploaded.

After configuration, click  to upload the color ring file to the gateway or click  to cancel the upload. See Figure 3-13 for the Color Ring Management interface after the upload.

Color Ring Manage					
Check	Index	Color Ring	Port	Port Group	Modify
<input type="checkbox"/>	1	default	---	---	

1 Item Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total

Figure 3-13 Color Ring Management Interface

Click **Modify** in Figure 3-13 to modify the configuration of the color ring. See below for the color ring modification interface. The configuration items on this interface are the same as those on the **Color Ring Upload** interface.

Color Ring-Modify	
Index	<input type="text" value="1"/>
Description	<input type="text" value="default"/>
Upload	<input type="checkbox"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

Figure 3-14 Color Ring Modification Interface

To delete a color ring, check the checkbox before the corresponding index in Figure 3-13 and click the **Delete** button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all color rings at a time, click the **Clear All** button in Figure 3-13.

### 3.5.8 QoS

On the QoS interface you can enable or disable this feature. Using the differentiated service, the gateway can meet various application requirements under a limited bandwidth and ensure neither delay nor discard for important services so as to improve its quality of services.

The table below explains the items shown in the above figure.

Item	Description
<b>QoS</b>	Sets whether to enable the QoS differentiated services. By default, it is disabled.
<b>Media Premium QoS</b>	Sets the priority of the media premium for QoS. A media premium QoS with a bigger value has a higher priority. The value range is 0~63, with the default value of 46.
<b>Control Premium QoS</b>	Sets the priority of the control premium for QoS. A control premium QoS with a bigger value has a higher priority. The value range is 0~63, with the default value of 26.

### 3.5.9 Tone Generator

Tone Generator

Tone Energy (dB)

Dial Tone   
  
Ringback Tone   
  
Busy Tone

FreqA/TimeA,FreqB+FreqC/TimeB  
Repeatedly play tones in turn: first, TimeA, a single tone with FreqA, then, Time B, a dual tone composed of FreqB and FreqC.

FreqA+FreqB+FreqC/TimeA,FreqD/TimeB  
Repeatedly play tones in turn: first, TimeA, a triple tone composed of FreqA, FreqB and FreqC, then, TimeB, a single tone with FreqD.

Note:  
The play time is calculated by ms and cannot be larger than 16383ms for each toneunit. A tone is allowed to contain at most 5 different toneunits and 4 different frequencies, but the frequency and duration of the first toneunit cannot be 0. Frequency being 0 means the toneunit is a piece of silence.

Figure 3-15 Tone Generator Setting Interface

On the Tone Generator Setting interface you can see and set parameters of the tone generator. By default, there are three tones on it: Dial Tone—a single tone with 450HZ frequency, plays continuously; Ringback Tone—a single tone with 450HZ frequency, repeatedly playing in the method of 1s play and 4s pause; Busy Tone—a single tone with 450HZ frequency, repeatedly playing in the method of 350ms play and 350ms pause. You can configure the tone generator manually. The exact explanation about the format and the meaning is described on the right of the interface. The value range of the tone energy herein above is -12~17, calculated by dB, with the default value of 0.

### 3.5.10 Tone Detector

The Tone Detector interface displays all parameters for tone detection. By default there are two pieces of settings respectively for Dial Tone and Busy Tone. No more than two can be configured. This feature is mainly used for detecting busy tones. Click **Modify** to go to the Tone Parameters interface.

See below for the configuration items on the Tone Parameters interface.

Item	Description
<b>Index</b>	The index of the tone detector. Each group of tone detectors has a unique index.
<b>Tone</b>	Includes three kinds of tones: Dial Tone, Busy Tone and Ringback Tone. For the wireless gateway, it is mainly for detecting busy tones.
<b>Type</b>	The type of tones, including Continuous Tone and Periodic Tone.
<b>The 1<sup>st</sup> Mid-frequency</b>	The first mid-frequency in Hz, with the value range of 200~3500 and the default value of 450.
<b>The 2<sup>nd</sup> Mid-frequency</b>	The second mid-frequency in Hz, with the value range of 0 or 200~3500 and the default value of 0.

<b>Duration at ON State</b>	The required duration of tones at ON state. By default, it is 1500ms for dial tones, 350ms for busy tones, and 1000ms for ringback tones.
<b>Duration at OFF State</b>	The required duration of tones at OFF state. By default, it is 0ms for dial tones, 350ms for busy tones, and 4000ms for ringback tones.
<b>Period Count</b>	Sets the count of periods as the condition to determine a periodic tone. By default, it is 0 for Dial Tone, 2 for Busy Tone, and 1 for Ringback Tone.
<b>Energy</b>	Sets the energy threshold for the tone detector to detect the on-line tone. To increase the accuracy, you can adjust the value according to the tone volume on the line. Range of value: -18~11, calculated by dB. The default value is 0.

Click **Save** to save the above settings into the gateway. Click **Close** to cancel your modification and return to the previous interface. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all tones at a time, click the **Clear All** button.

### 3.5.11 CDR Query

See the table below for the items on the CDR Query Setting interface.

Item	Description
<b>Starting Date, Ending Date</b>	Sets the starting and ending dates for CDR query.
<b>Port</b>	Sets the port on which CDR query will proceed.
<b>Call Direction</b>	Sets the call direction for CDR query.
<b>CallerID, CalleeID</b>	Sets the CallerID/CalleeID for CDR query.
<b>Call Duration</b>	Sets the minimum/maximum call duration for CDR query.

Click **Query** to query the CDR information based on the set conditions.

**Note:** This page will appear only when the CDR feature is enabled (set in [3.5.2 System Param](#)).

### 3.5.12 VPN

Figure 3-16 VPN Settings Interface

Thanks to the embedded VPN Client, the wireless gateway can access the VPN network via OPENVPN directly, not requiring extra VPN client, which simplifies the network deployment. Meanwhile, the design of both SIP signaling messages and voice streams transporting via VPN avoids possible problems induced by the SIP protocol in passing through the firewall and NAT. See Figure 3-16 for the VPN Settings interface. The table below gives the explanation to the items shown in the above figure.

Item	Description
<b>Enable OPENVPN</b>	Sets whether to enable the VPN feature, with the default value of <i>No</i> . If this feature is enabled, the gateway will work as a VPN client.

You are required to upload the VPN certificate after enabling the VPN feature. See Figure 3-17.

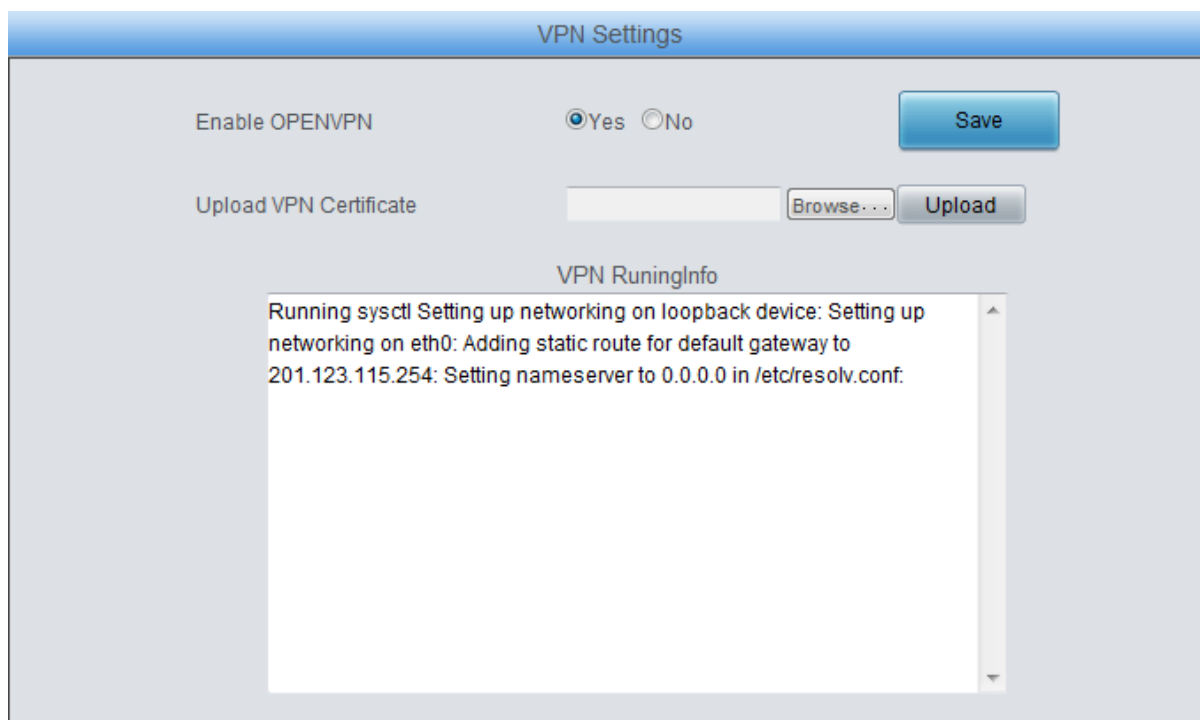


Figure 3-17 VPN Certificate Upload Interface

**Note:** Refer to [Appendix C About VPN](#) for how to make a VPN certificate.

## 3.6 Wireless Settings

Wireless Settings includes the following parts: **Basic Param**, **Wireless Param**, **Call Forwarding**, **Short Message**, **SMPP**, **IMEI (GSM, WCDMA and LTE series)**, **USSD (GSM, WCDMA and LTE series)**, **Email**, **SIM Card**, **PIN Manage**, **BS Select (GSM series)**, **SIM Mode**, **Call Waiting (GSM, WCDMA and LTE series)**, **Lock SIM**, **Networking Setting (WCDMA and LTE series)**, **AMD (CDMA series)** and **Hidden CallerID (WCDMA and LTE series)**.

### 3.6.1 Basic Parameters

See the table below for the items on the Basic Parameters Setting interface.

Item	Description
<b>GSM (WCDMA/LTE) Voice Encoding</b>	Sets the mode of the GSM (WCDMA/LTE) voice encoding. By default, the voice encoding for GSM is <i>Automatic</i> and for WCDMA/LTE is <i>AMR</i> .
<b>Volte</b>	Once this feature is enabled, the 4G function will be enabled when there is a call ongoing on; Otherwise, only 2G or 3G function is available.
<b>GSM (WCDMA/CDMA/LTE) DTMF Send Mode</b>	Sets the mode to send the GSM (WCDMA/CDMA/LTE) DTMF, three options available for GSM (WCDMA/CDMA): <i>Voice Playback</i> , <i>Remote Transmission</i> and <i>Chip Transmission</i> . The default value is <i>Voice Playback</i> . Two options are available for LTE: <i>Remote Transmission</i> and <i>Chip Transmission</i> . The default value is <i>Remote Transmission</i> .
<b>DTMF Transmission Intensity</b>	Sets the transmission intensity of the DTMF. The default values for the GSM gateway and the WCDMA gateway are respectively 6 and 1. Note: 1, This configuration item is unsupported when the DTMF send mode is set to



	Remote Transmission; 2, This configuration item is unsupported for the CDMA gateway.
<b>Duration at ON</b>	Sets the duration of the DTMF signal at ON state, calculated by ms. The default value is 120.
<b>Duration at OFF</b>	Sets the duration of the DTMF signal at OFF state, calculated by ms. The default value is 100.
<b>Disconnect Voice while Sending DTMF</b>	Sets whether to disconnect the voice channel while sending the DTMF, with the default value of <i>No</i> . Note: This configuration item is unsupported when the DTMF send mode is set to Remote Transmission;
<b>GSM (WCDMA/CDMA/LTE) DTMF Receive Mode</b>	Sets the mode to receive the GSM (WCDMA/CDMA/LTE) DTMF, two options available: Chip Receive and Wireless Module Receive. The default values for GSM WCDMA and LTE are <i>Wireless Module Receive</i> ; the default value for CDMA is <i>Chip Receive</i> .
<b>Minimum Duration at ON</b>	Set the minimum duration at ON for the DTMF signal. That is, those DTMF signals staying at ON longer than the set value of this item will all be received.
<b>DTMF Voltage Detection for GSM</b>	Set the On and off of the DTMF detection for GSM.
<b>Network Scan Mode</b>	Sets a network for the call, three options available for the WCDMA gateway: Automatic, GSM Only and WCDMA Only. The default value is <i>Automatic</i> . Nine options are available for the LTE gateway: Automatic, GSM Only, WCDMA Only, LTE Only, TD-SCDMA Only, UMTS Only, CDMA Only, HDR Only, CDMA and EVDO Only. The default value is <i>Automatic</i>
<b>Network Scan Sequence</b>	Sets the priority of the network, three options available for the WCDMA gateway: <i>Automatic</i> , <i>GSM prior to WCDMA</i> and <i>WCDMA prior to GSM</i> . The default value is <i>Automatic</i> . Only the option Automatic is available for the LTE gateway.
<b>SMS Sending Type</b>	The way to send SMS. Three options are available: Auto, Common, Flash. And the default setting is Auto.
<b>SMS Sending Interval</b>	Sets the interval to send SMS for each port. Range of value: 1~60, with the default value of 1.
<b>Maximum Pieces of Saved Logs</b>	Sets the amount of the logs to be saved for each port. Range of value: 50~500, with the default value of 100.
<b>SMS Receipt</b>	Once this feature is enabled, the gateway will receive a receipt upon the remote side receiving the SMS. Note: This configuration item is unsupported for the CDMA gateway.
<b>AT Command Mode</b>	Sets the AT command sent with the call forwarding. There are two options available: CCFC command mode and ATD command mode. The GSM and LTE LC gateways support both modes, while the WCDMA and LTE (except for LC) gateways only support the CCFC command mode and the CDMA gateways only support the ATD command mode.
<b>Set/Cancel Service Number for FWD Unconditionally,</b>	Sets or Cancels the service No. for FWD unconditionally, FWD on busy, FWD on no reply or FWD Unreachable. The former box is used to set the service No,

<b>Set/Cancel Service Number for FWD on Busy, Set/Cancel Service Number for FWD on No Reply, Set/Cancel Service Number for FWD on Unreachable</b>	while the latter one is to cancel the service number.
<b>Cancel All FWD Service Numbers</b>	Used to cancel all service numbers for FWD unconditional, FWD on busy and FWD on no reply.
<b>Cancel All Waiting Service Numbers</b>	Used to cancel the service number for call waiting.
<b>SIP Answer Code</b>	Sets the SIP answer code for each state of the called party. Busy/Rejected: 486; No Answer: 408; Other Fault: 480; Call Time Over: 503; No Idle Channel: 486; Route Failed: 488.

Click Save to save the setting into the gateway, click Reset to restore the configurations.

### 3.6.2 Wireless Param

Wireless Param														Export/ICCID
Check	Port	Cell Phone No.	IP->GSM Voice Volume	GSM->IP Voice Volume	IMSI	ICCID(Card A)	ICCID(Card B)	ICCID(Card C)	ICCID(Card D)	IMEI	Operator	Working Frequency Band	Status	Modify
<input type="checkbox"/>	1	13750845957	3	70	460000842532841	---	---	89860075111651005239	---	865740032035615	CHINA MOBILE	GSM850_EGSM_DCS_PCS_MODE	Enable	
<input type="checkbox"/>	2	13588242026	3	70	460008470848142	---	---	89860058111551226475	---	865740032294048	CHINA MOBILE	GSM850_EGSM_DCS_PCS_MODE	Enable	
<input type="checkbox"/>	3	13082813431	3	70	460012818007570	---	---	89860114836051438050	---	865740032436771	CHINA UNICOM GSM	GSM850_EGSM_DCS_PCS_MODE	Enable	
<input type="checkbox"/>	4	---	3	70	---	---	---	---	---	865740032338258	---	---	Enable	
<input type="checkbox"/>	5	---	3	70	---	---	---	---	---	864504037182322	---	---	Enable	
<input type="checkbox"/>	6	---	3	70	---	---	---	---	---	864504037182108	---	---	Enable	
<input type="checkbox"/>	7	---	3	70	---	---	---	---	---	865740032297207	---	---	Enable	
<input type="checkbox"/>	8	---	3	70	---	---	---	---	---	865740032309382	---	---	Enable	
<input type="checkbox"/>	9	---	3	70	---	---	---	---	---	865740032309598	---	---	Enable	
<input type="checkbox"/>	10	---	3	70	---	---	---	---	---	865740032295953	---	---	Enable	
<input type="checkbox"/>	11	---	3	70	---	---	---	---	---	865740032191673	---	---	Enable	
<input type="checkbox"/>	12	---	3	70	---	---	---	---	---	865740032353802	---	---	Enable	
<input type="checkbox"/>	13	---	3	70	---	---	---	---	---	865740032109402	---	---	Enable	
<input type="checkbox"/>	14	---	3	70	---	---	---	---	---	865740032214632	---	---	Enable	
<input type="checkbox"/>	15	---	3	70	---	---	---	---	---	865740032214558	---	---	Enable	
<input type="checkbox"/>	16	---	3	70	---	---	---	---	---	865740032205473	---	---	Enable	
Check All Uncheck All Get number Disable Enable														

Figure 3-18 Wireless Parameters Configuration Interface

The Wireless Parameters Configuration interface displays all relative information. Click **Modify** in the right column to modify the properties of the corresponding module.

The table below explains the configuration items on the Wireless Parameters Modification interface.

Item	Description
<b>Port</b>	The number of the port corresponding to the wireless module.
<b>Cell Phone No.</b>	The number of the SIM card corresponding to the wireless module. This number should be configured manually.
<b>Query Mode</b>	It is supported to acquire the SIM card number by two modes SMS and USSD.
<b>Destination Number</b>	Sets the destination number to receive the short message.
<b>Content to Send</b>	Sets the content of the short message.
<b>Keywords to Match</b>	Sets the keywords used to get the cell phone No. from the received SMS.
<b>Bits of Prefix to be Removed from Phone No.</b>	Sets the bits of the prefix to be removed from the cell phone No.. Up to 4 bits can be removed.

<b>Get Phone No. after SIM Card Registration</b>	Sets whether to get the cell phone No. after the SIM card being registered successfully.
<b>Write Query Result to SIM</b>	Sets whether to write the queried cell phone number to the SIM card. The default setting is Yes.
<b>IP-&gt;GSM(WCDMA/CDMA) Voice Volume</b>	The volume of the voice from IP to GSM/WCDMA/CDMA. By default, the value for GSM is 3; the value for WCDMA is 10000; the value for CDMA is 1; the value for SIMCOM is 10400.
<b>GSM(WCDMA/CDMA)-&gt;IP Voice Volume</b>	The volume of the voice from GSM/WCDMA/CDMA to IP. By default, the value for GSM is 70; the value for WCDMA is 3; the value for CDMA is 2; the value for SIMCOM is 7000.
<b>Disable Call Out Un4G</b>	Sets whether to enable outgoing calls in non 4G network. The default setting is Disable. This item is available only for the LTE gateway.
<b>Network Scan Mode</b>	Sets the network scan mode for a module during SIM card registration. Note: This item is only available for the LTE and WCDMA gateways.
<b>Operator</b>	The operator of the wireless module. It is obtained automatically. This configuration is unavailable for CDMA module.
<b>GPRS</b>	Set whether to enable or disable the GPRS feature. This feature is only supported by the GSM gateway.
<b>Select Band</b>	Sets the frequency band of the base station during SIM card registration. You shall restart the gateway after selecting a band. This feature is only supported by the WCDMA gateway.
<b>Apply to all the modules</b>	Sets whether to apply all the settings except for the cell phone number to all the modules.
<b>IMSI</b>	International Mobile Subscriber Identification Number, the unique identity of the SIM card.
<b>ICCID</b>	Integrate Circuit Card Identity (ICCID) is just the SIM card number which serves as the identification card of a phone number. It is the unique identification number of the IC card, consisting of 20 digits.
<b>IMEI</b>	International Mobile Equipment Identity. Note: This configuration item is unsupported for the CDMA gateway.
<b>Working Frequency Band</b>	Displays the working frequency band of the wireless module. This configuration is unavailable for CDMA module.
<b>Status</b>	Displays the current state of the wireless module.

Click **Modify** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Back** to cancel the settings.

### 3.6.3 Call Forwarding

See the table below for the items on the Call Forwarding Configuration interface.

Item	Description
<b>Port</b>	The number of the port corresponding to the wireless module.
<b>Cell Phone No.</b>	The number of the SIM card corresponding to the wireless module.
<b>FWD</b>	Sets whether to enable the feature of FWD unconditionally and the FWD number if

<b>Unconditionally</b>	it is enabled.
<b>FWD on Busy</b>	Sets whether to enable the feature of FWD on busy and the FWD number if it is enabled. Note: Be sure to disable the Call Waiting feature before using it.
<b>FWD on No Reply</b>	Sets whether to enable the feature of FWD on no reply and the FWD number if it is enabled.
<b>FWD on Unreachable</b>	Sets whether to enable the feature of FWD on unreachable and the FWD number if it is enabled.
<b>FWD Setting Status</b>	Displays the setting status of the call forwarding service.
<b>FWD Query Status</b>	Displays the query status of the FWD settings. This configuration is unavailable for CDMA module.
<b>Cancel All</b>	Cancels all the setting on call FWD service. This item will appear if none of the call FWD is selected.

Click **Modify** to modify the properties of the corresponding port. See Figure 3-19 for the call forwarding modification interface. Then click **Modify** to save the settings into the gateway. It will take some time to apply the settings, and you can check the result in the 'FWD Setting Status' column. Click **Reset** to restore the configurations, or click **Cancel** to cancel the settings.

Figure 3-19 Wireless Service Modification Interface

### 3.6.4 Short Message

The Short Message interface displays the related information about the received/sent SMS.

Click **SMS Center** to go into the SMS Center Modification interface. Click **Save** to save the settings into the gateway, click **Close** to cancel the settings.

**Note:** The configuration of SMS Center is unavailable for the CDMA gateway.

Click **Inbox** to go into the SMS Receiver Details interface. Such information as the remote cell phone number, the time and the content will be displayed on this page.

To delete a piece of SMS receiving detail, check the checkbox before the corresponding index on the Inbox interface and click the **Delete** button.

Click **Outbox** to go into the SMS Sending interface. Such information as the send status of the SMS, the remote cell phone number, the time, and the content will be displayed on this page.

To delete a piece of record, check the checkbox before the corresponding index on the Outbox

interface and click the **Delete** button. To filter the receive/send short messages according to the set conditions, click the **Filter** button on the bottom right corner. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; to clear all records at a time, click the **Clear All** button; to go back to the previous interface, click **Return**.

Click **Send SMS** to go into the Send SMS interface.

The table below explains the configuration items on the Send SMS interface.

Item	Description
<b>Port</b>	Select a port to send the SMS. There are three options available: Assignment Port, Automatic, Group Send.
<b>Number Import</b>	Click <i>Browse</i> to select the required number file and then click <i>Import</i> to import this file.
<b>Send to</b>	Enter the remote number to receive the SMS.
<b>Sending Type</b>	If the item <b>SMS Sending Type</b> on the Basic Parameters Setting interface is set to <b>Auto</b> , this item <b>Sending Type</b> has two options <b>Common</b> and <b>Flash</b> ; if that is set to <b>Common</b> , this item is set to <b>Common</b> by default; if that is set to <b>Flash</b> , this item is set to <b>Flash</b> by default.
<b>Encoding Format</b>	The encoding format for the SMS, two options available: GSM 7bit and UCS2.
<b>Content</b>	The content of the SMS required to be sent.
<b>Result</b>	Display the send result of the SMS.

Click **Send** to send out the SMS, click **Clear Result** to clear all results. Click **Reset** to restore the configurations, or click **Return** to go back to the previous.

### 3.6.5 SMPP

**Short Message Peer-to-Peer (SMPP)** is an open, industry standard protocol designed to provide a flexible data communication interface for the transfer of [short message](#) data between [External Short Messaging Entities](#) (SMEs), Routing Entities (REs) and [Message Centres](#). Our wireless gateway working as a Short Message Service Center (**SMSC**) can receive the short message from Short Messaging Entities (SMEs), transfer it to the operator and return the Delivery Report (DLR) to SMEs according to requirements; also in the opposite direction, our wireless gateway can transfer the short message from the operator to SMEs. Up to 32 SMEs are supported to connect with SMSC simultaneously and each SME can connect to corresponding channels on the gateway. See below for the configuration items on the Basic Settings interface as well as the Account Settings interface.

Item	Description
<b>Enabled</b>	Sets whether to enable or disable the SMPP feature, with the default setting of No.
<b>Server Port</b>	The port number of the SMPP server.
<b>Transmit</b>	Sets whether to enable the SMS forwarding, with the default setting of No.
<b>DLR</b>	Sets whether to report the status of SMS forwarding, with the default setting of No.
<b>Account</b>	Account of the Client.
<b>Password</b>	Password of the Client account.
<b>Ports</b>	Number of the bound port

Click **Save** to save the settings into the gateway; click **Reset** to restore the configurations, or click **Return** to go back to the previous. To delete an account, check the checkbox before the corresponding index and click the '**Delete**' button. **Check All** means to select all available items

on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all accounts at a time, click the **Clear All** button. All the configurations will apply after the gateway's restart.

You are allowed to visit the settings interface directly by entering the gateway address plus /en/imei into the address bar of your browser.

### 3.6.6 IMEI



Figure 3-20 IMEI Interface

See Figure 3-20 for the IMEI interface. Read the agreement carefully and click **Accept** before you go into the IMEI Modification interface. There are two optional modes for IMEI modification: Manual Modify and Auto Modify. Click Manual Modify to go into the IMEI manual modification interface

The default IMEI information will be displayed after clicking Initial Value. You can save and use it according to your requirement.

Click Auto Modify to go into the IMEI auto modification interface.

If the modification mode is set to *Based on Time/Call*, IMEI Generation Mode has only one option Automatic; if the modification mode changes to *Switch Card per Time*, there are four modes available for the IMEI Generation Mode: Automatic, Based on Number (Server), Based on Number (Corresponding table) and Based on IMSI (Corresponding table). You are required to fill in the IMEI TAC and IMEI Serial Number Range. If the Based on Number (Server) mode is selected, the IMEI value will be obtained from the server and you are required to fill in the server address (Example: http: //201.123.115.111); If the Based on Number (Corresponding table) mode is selected, the IMEI value will be obtained from the cell phone number and the corresponding IMEI table, and you can directly fill in the corresponding table on the interface or upload the file. For the format of the corresponding table, refer to the notes at the bottom of the interface. If the Based on IMSI (Corresponding table) mode is selected, the IMEI value will be obtained from the corresponding IMSI table of the SIM card, and you can easily import the table file. For the format of the corresponding table, refer to the notes at the bottom of the interface.

After configuration, click **Save** to save the above settings into the gateway or click **Reset** to restore the configurations.

**Note:** This configuration is unavailable for the CDMA module.

### 3.6.7 USSD

The table below explains the items on the USSD Setting interface.

Item	Description
------	-------------



<b>Default USSD Encoding</b>	Sets the default encoding format for USSD, two options available: ASCII and UCS2.
<b>Port</b>	Sets the port used to send the USSD request. For 16/32 port gateways which have cards inserted on the port, the USSD interface will show the card slot number for the current port as well.
<b>Request</b>	Inputs the content of the USSD request.
<b>Respond</b>	Displays the result of the USSD respond.
<b>All</b>	Selects all the available ports to send the same USSD request.

Click **Send** on the USSD Setting interface. To clear all data at a time, click the **Clear Data** button.

**Note:** This configuration is unavailable for the CDMA gateway.

### 3.6.8 Email

The table below explains the configuration items on the Email Setting interface.

Item	Description
<b>Mailbox Account, Password</b>	Sets the account and password of the mailbox.
<b>Outgoing (SMTP), Port</b>	Sets the server address and port for Email sending.
<b>Incoming (POP3), Port</b>	Sets the server address and port for Email receiving.
<b>SSL</b>	Sets whether to encrypt the sending/receiving mails via SSL.
<b>Show Log</b>	Click it to display the log which contains the Email to SMS converted information.
<b>Bind Mailbox to Port</b>	Once this feature is enabled, the mailbox can be bound to the designated port. Click <b>Setting</b> to go into the "Bind Mailbox to Port-Settings" interface.
<b>Convert SMS to Email</b>	SMS can be converted to Emails if this feature is enabled.
<b>Target Address</b>	The target address to which the Email converted by SMS will be sent.
<b>Subject</b>	Sets the subject for the Email converted by SMS.
<b>Covert Email to SMS</b>	When this feature is enabled, the mails in a designated format can be converted to SMS.
<b>Receiving Cycle</b>	Sets the cycle to receive mails. Range of value: 1~60, calculated by minute, with the default value of 5.
<b>Mail Filtering</b>	Sets the condition to convert the mail to SMS, two options including: Subject matching and Number matching, with the default value of <i>Subject matching</i> . If the Subject matching mode is selected, you can set the subject of your own choice, and the email format is "[Number]XXX[End] [SMS]YYY[End]; (Case Insensitive)"; If the Number matching mode is selected, the mail subject must be numbers, multiple numbers are supported which should be separated by ",", and the email format is "[SMS].....[end]".
<b>SMS Sending Port</b>	Sets the port from which the SMS will be sent out. The default value is <b>automatic</b> .
<b>SMS Encoding Format</b>	Sets the SMS encoding format used in converting Email to SMS, with the default value of UCS2. It can be configured to GSM 7bit (UCS2 is recommended in case the email contains Chinese words).

**Return Receipt**

Sets whether to receive a return receipt telling the mail is sent successfully or not.

After configuration, click **Save** to save the settings into the gateway or click **Reset** to reset the settings.

### 3.6.9 SIM Card

SIM Card List												Export NO.
Port	Card A	Cell Phone No.	Card B	Cell Phone No.	Card C	Cell Phone No.	Card D	Cell Phone No.	Auto Switch to Available Card Slot	Switch Strategy for SIM Card	SIM Group	Modify
1	Using	13588231847	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
2	Using	13588277410	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
3	Using	13588268249	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
4	Using	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
5	Using	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
6	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
7	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
8	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
9	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
10	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
11	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
12	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
13	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
14	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
15	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	
16	Empty	---	Empty	---	Empty	---	Empty	---	Enable	Disable	Disable	

Figure 3-21 SIM Card List Interface

The SIM Card List interface displays the states of each SIM card and the strategy to switch the SIM, etc. Click the SIM card in Exist state to set it to Using state, at the same time, the SIM card which is ever in Using state at first will switch to Exist state. Click Modify to modify the parameters.

The table below explains the items on the SIM Card Management interface.

Item	Description
<b>Port</b>	Serial number of the port on the device.
<b>Auto Switch to Available SIM Card</b>	Once this feature is enabled, it will switch to other available SIM card automatically if the current SIM card is drawn out or the corresponding port is unavailable due to the SIM card is damaged. The default value is <i>enable</i> .
<b>Switch Strategy for SIM Card</b>	Sets the switch strategy for the SIM card. There are five options: <i>Based on Time</i> , <i>Based on Call</i> , <i>Based on SMS</i> , <i>Fixed Time</i> and <i>Disable</i> . Among them, the option <i>Based on Call</i> provides two count methods: <i>Call out</i> and <i>Ring back</i> . The default value is <i>Disable</i> .
<b>SIM Card Grouping</b>	Once this feature is enabled, the SIM cards in the port can be divided into groups, with the default value of <i>disable</i> .
<b>Grouping</b>	Sets the grouping of the SIM cards.
<b>Use Strategy</b>	Sets the strategy to group the SIM cards, including two options: <i>Only One Group</i> and <i>Two Groups in Turn</i> .
<b>Apply to All Ports</b>	Sets whether to apply the above configurations to all ports.

Click **Modify** to save the above settings into the gateway or click **Reset** to restore the configurations. Click **Return** to cancel the modification.

**Note:**

1, Only the SMG4016 and SMG4032 series gateways support this configuration;



2, The priority of these three switching modes is: Auto Switch to Available Card Slot > SIM Card Grouping > Switch Strategy for SIM Card. It is suggested not to enable them simultaneously.

### 3.6.10 PIN Manage

PIN Manage					
Port	SIM Card State	PIN Required	PUK Required	Setting Status	Modify
1	Unlocked	No	No	---	
2	---	---	---	---	--
3	---	---	---	---	--
4	Unlocked	No	No	---	
5	---	---	---	---	--
6	---	---	---	---	--
7	---	---	---	---	--
8	---	---	---	---	--

Figure 3-22 PIN Manage Interface

The PIN Manage interface displays the status of the SIM card and the setting status of PIN and PUK. Click Modify to go into the modification interface. See Figure 3-23.

PIN Manage-Modify

Port

Port1

Lock SIM Card

☒ Yes ☐ No

PIN

Note: There is a restriction on the number of input times of PIN and PUK. Please proceed with caution.

Modify

Reset

Cancel

Figure 3-23 PIN Manage Modification Interface

Click “Yes” and input the correct PIN to lock the SIM card. The incoming/outgoing calls will not be initiated once the SIM card is locked. See Figure 3-24.

PIN Manage					
Port	SIM Card State	PIN Required	PUK Required	Setting Status	Modify
1	Locked	Yes	No	---	
2	---	---	---	---	--
3	---	---	---	---	--
4	Unlocked	No	No	---	
5	---	---	---	---	--
6	---	---	---	---	--
7	---	---	---	---	--
8	---	---	---	---	--

Figure 3-24 SIM Card Locked PIN Required

Click Modify in Figure 3-24, you are required to input PIN again. See Figure 3-25.

PIN Manage-Modify

Port

Port1

PIN

Note: There is a restriction on the number of input times of PIN and PUK. Please proceed with caution.

Modify

Reset

Cancel

Figure 3-25 Input PIN Interface

After the correct PIN is input, the SIM card is still locked but the channel turns idle and allows the initiation of incoming/outgoing calls. See Figure 3-26.

PIN Manage					
Port	SIM Card State	PIN Required	PUK Required	Setting Status	Modify
1	Locked	No	No	Successful	
2	---	---	---	---	--
3	---	---	---	---	--
4	Unlocked	No	No	---	
5	---	---	---	---	--
6	---	---	---	---	--
7	---	---	---	---	--
8	---	---	---	---	--

Figure 3-26 SIM Card Locked without PIN

Click Modify in Figure 3-26 to unlock the SIM card or modify the PIN. See the figure below.

PIN Manage-Modify

Port

Port1

Lock SIM Card

☒ Yes ☐ No

Modify PIN

☐ Yes ☒ No

Note: There is a restriction on the number of input times of PIN and PUK. Please proceed with caution.

Modify

Reset

Cancel

Figure 3-27 Lock SIM Card or Modify PIN Interface

The SIM card will also be locked and cannot make incoming/outgoing calls if you input a wrong PIN code three times. You are required to input the PUK to reset the PIN. See Figure 3-28.

PIN Manage					
Port	SIM Card State	PIN Required	PUK Required	Setting Status	Modify
1	Locked	Yes	Yes	---	
2	---	---	---	---	--
3	---	---	---	---	--
4	Unlocked	No	No	---	
5	---	---	---	---	--
6	---	---	---	---	--
7	---	---	---	---	--
8	---	---	---	---	--

Figure 3-28 SIM Card Locked Need PIN and PUK

Click Modify in Figure 3-28 to input PUK and reset a new PIN, see Figure 3-29.

PIN Manage-Modify

Port

Port1

PUK

New PIN

Confirm New PIN

Note: There is a restriction on the number of input times of PIN and PUK. Please proceed with caution.

Modify

Reset

Cancel

Figure 3-29 New PIN setting interface

The SIM card is still locked but do not need PIN and PUK again after inputting the correct PUK and resetting a new PIN. The status of the port displaying in [Port State](#) is idle. So the port can make incoming/outgoing calls. Click **Modify** to save the above settings into the gateway or click **Reset** to restore the configurations. Click **Cancel** to cancel the modification.

**Note:** The SIM card will be locked forever if you input a wrong PUK more than 10 times. You need to insert a new card.

### 3.6.11 BS Select

The Base Station Select interface displays the information of the base stations which can be searched and connected. The base station has the priority to be connected will be listed on the left according to its comprehensive ability. Click Modify to go into the Lock BS interface.

The table below explains the items shown on the Lock BS interface.

Item	Description
<b>Port</b>	The number of the port corresponding to that on the wireless module.
<b>Serial No.</b>	The serial number of the base station which can be searched.
<b>BS</b>	The frequency point of each base station.
<b>LAC</b>	The location number of each base station. It's a hexadecimal number.
<b>CELLID</b>	The cell number of each base station. It's a hexadecimal number.
<b>Manual Lock</b>	Select the serial number and click the Lock button behind to lock the base station manually. Thus, the SIM card will connect to the locked base station randomly.
<b>Automatic Lock</b>	Select the serial number to lock the base station automatically. The SIM card will connect to the locked base station in a cyclic order according to the set switching time.
<b>Switching Time</b>	Sets the switching time for connecting the base station.
<b>BS in Use</b>	Selects the serial number of the base station to be locked automatically.

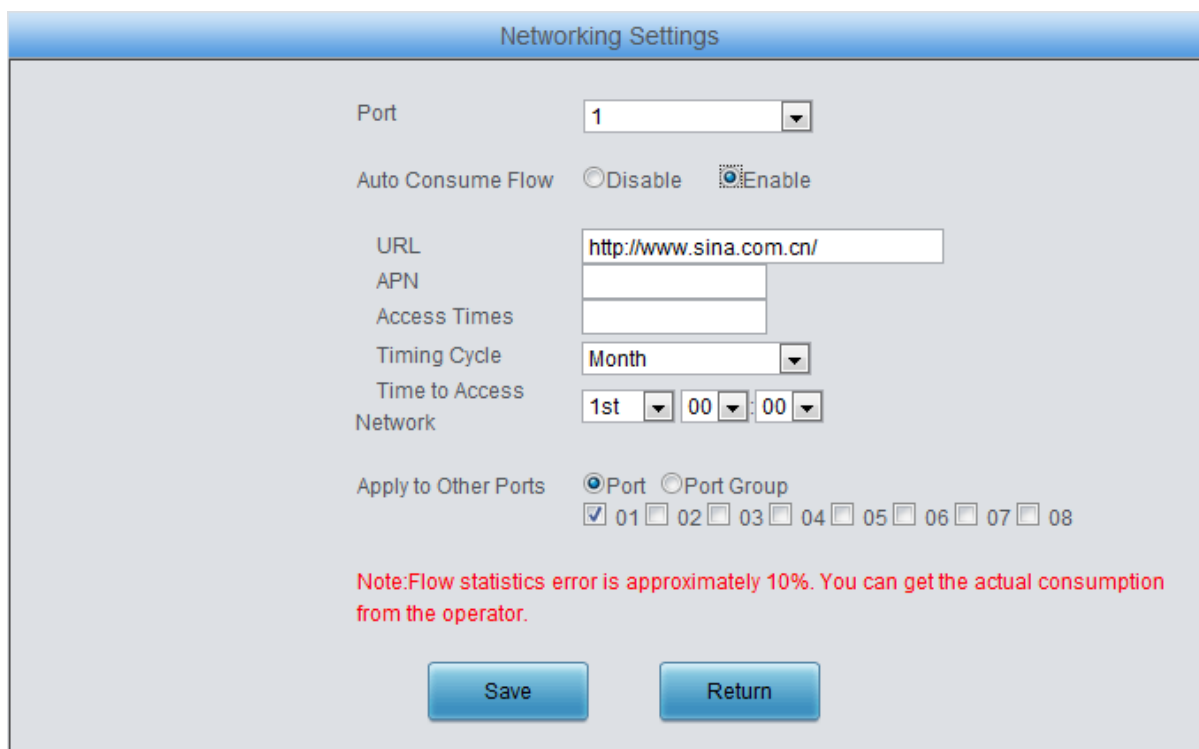
Click **Lock** to save the above settings into the gateway or click **Return** to cancel the modification and return to the previous interface.

To cancel the lock, check the checkbox before the corresponding index on the BS Select interface and click the '**Cancel**' button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Query** means to query the information of all the base stations which can be connected.

**Note:** This configuration is only supported by the GSM gateway.

### 3.6.12 Networking Settings

The Networking Management interface displays the networking information about the SIM card, such as the time to start accessing the network, the consumed flow, etc. Click Modify to go into the Networking Settings Modification interface. See Figure 3-30.



The image shows a 'Networking Settings' window with the following fields and controls:

- Port:** A dropdown menu with '1' selected.
- Auto Consume Flow:** Radio buttons for 'Disable' and 'Enable' (selected).
- URL:** A text input field containing 'http://www.sina.com.cn/'.
- APN:** An empty text input field.
- Access Times:** An empty text input field.
- Timing Cycle:** A dropdown menu with 'Month' selected.
- Time to Access Network:** Three dropdown menus showing '1st', '00', and '00'.
- Apply to Other Ports:** Radio buttons for 'Port' (selected) and 'Port Group'. Below 'Port Group' are checkboxes for ports 01 through 08, all of which are unchecked.

At the bottom, there is a red note: "Note: Flow statistics error is approximately 10%. You can get the actual consumption from the operator." and two buttons: 'Save' and 'Return'.

Figure 3-30 Networking Settings Modification Interface

The table below explains the items shown in the above figure.

Item	Description
<b>Port</b>	The number of the port corresponding to that on the wireless module.
<b>Auto Consume Flow</b>	Once this feature is enabled, the SIM card will surf the internet and consume the flow automatically. The default value is <i>disabled</i> .
<b>URL</b>	Sets the URL address.
<b>APN</b>	Sets the APN. Please get the detailed information from the operator of the SIM card.
<b>Access Times</b>	Sets the times for the SIM card to surf the internet. Range of value: 1~500.
<b>Timing Cycle</b>	Sets the timing cycle for the SIM card to surf the internet.
<b>Time to Access Network</b>	Sets the start time of the SIM card to surf the internet.
<b>Apply to Other Ports</b>	Sets whether to apply the above configurations to other ports.

Click **Save** to save the above settings into the gateway or click **Reset** to restore the configurations. Click **Cancel** to cancel the modification.

**Note:** This configuration is only supported by the WCDMA and LTE gateways.

### 3.6.13 AMD

The AMD Configuration interface is used to set the parameters for judging whether the phone is picked up by a man or not. See the table below for details.

Item	Description
<b>AMD Detection for Outgoing Call</b>	Sets whether to enable the AMD detection while making an outgoing call, with the default value of <i>Disabled</i> .
<b>Line Silence Overtime after Dial Tone</b>	Judges if the line silence after dial tone lasts overtime or not, calculated by ms, with the default value of 30000.

<b>Silence Overtime after tone or Color Ring Being Detected</b>	Judges if the silence after tone or color ring lasts overtime or not, calculated by ms, with the default value of 15000.
<b>Overtime for a Complete AMD Detecting Process</b>	Judges the whole AMD detecting process overtime or not, calculated by ms, with the default value of 70000.
<b>Upper Limit of Detected Continuous Tones</b>	Judges if the tone detected time is overtime or not.
<b>Shortest Voice Duration at ON State</b>	Sets the shortest duration when the voice goes into the High voltage state, calculated by ms, with the default value of 150.
<b>Shortest Voice Duration at OFF State</b>	Sets the shortest duration when the voice goes into the low voltage state, calculated by ms, with the default value of 400.
<b>Maximum Greeting Duration at OFF State</b>	Sets the longest duration of the greetings at the OFF state after a call is picked up by a man, calculated by ms, with the default value of 0.
<b>Shortest Silence Duration before Greeting</b>	Sets the shortest silence duration before the phone is picked up by a man, calculated by ms, with the default value of 600.
<b>Shortest Greeting Duration</b>	Sets the shortest greeting duration in case the phone is picked up by a man, calculated by ms, with the default value of 180.
<b>Maximum Greeting Duration</b>	Sets the longest greeting duration in case the phone is picked up by a man, calculated by ms, with the default value of 1200.
<b>Shortest Silence Duration after Greeting</b>	Sets the shortest silence duration after the phone is picked up by a man, calculated by ms, with the default value of 1200.
<b>Silence Energy Threshold</b>	Sets an energy value that can judge the voice is silence or not, calculated by ms, with the default value of 180.
<b>Energy Difference Proportion of Tone</b>	Sets the difference proportion of the high and low energies in the signal.
<b>Output AMD Debugging Info to Syslog</b>	Sets whether to output the AMD debugging information to Syslog.
<b>Do not Detect Other Pickup Signal</b>	Sets whether to detect other pickup signals.

Click **Save** to save the settings into the gateway, click **Reset** to restore the configurations.

**Note:** This configuration is only supported by the CDMA gateway.

### 3.6.14 Hidden CallerID

The Hidden Caller Setting interface sets whether to hide the CallerID to the called party. This feature requires the support of the operator. Select the port and click **Open** to enable the feature, and click **Close** to disable it.

**Note:** This configuration is only supported by the WCDMA and LTE gateways.

### 3.6.15 SIM Mode

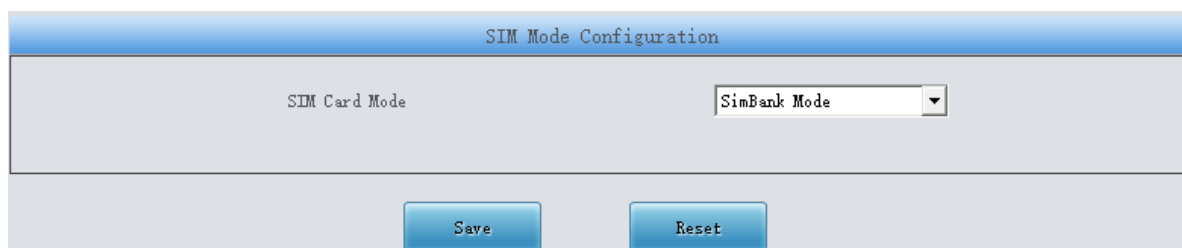


Figure 3-31 SIM Mode Setting Interface

The SIM Mode Setting interface is used to set the SIM mode of the SIMBANK, with three options available: Local, SimBank, LAN. In the Local mode, the SIMBANK is not connected to other devices; in the SIMBANK mode, you have to ensure the centralized management feature has been enabled, and then the SIMBANK can connect and work with the wireless gateway on the centralized management platform; in the LAN mode, you should configure Gateway IP address herein for the SIMBANK, select the LAN mode and configure SIMBANK IP address for the wireless gateway, and then connect the SIMBANK with the wireless gateway in the LAN.

**Note:** This configuration is only supported by the GSM, CDMA and LTE gateways.

### 3.6.16 Call Waiting

The Call Waiting Setting interface is used to enable or disable the call waiting feature for corresponding modules. Select one or more ports, click Save to enable the call waiting feature. The state column on the top shows the setting result.

**Note:** This configuration is not supported by the CDMA gateway.

### 3.6.17 Lock SIM

This feature is designed to lock the card slots on the gateway. A card slot cannot be used to start calls any more after being locked. There are three ways to lock a SIM card: auto locking based on certain call condition, manual locking, and locking via API request of the gateway. For detailed configurations, go to the Lock SIM interface.

On the Lock SIM interface, click the **Modify** button on the right to go into the Lock SIM Set interface and you can see the following configuration items.

Item	Description
<b>Port</b>	The number of the port on the gateway.
<b>Consecutive No Answer Count</b>	Sets how many continuous calls of no answer will cause the card lock.
<b>Locking Time</b>	Sets the locking time of the card slot.
<b>Unlock by Plugging SIM Card in and out</b>	Sets whether to unlock the card slot after plugging the SIM card in or out. Note: This configuration is unsupported by SMG4004 and SMG4008 gateways.
<b>Consecutive No Carrier Count</b>	Sets how many continuous calls of no carrier will cause the card lock.
<b>Successful Call count</b>	Sets how many continuous calls will cause the card lock.
<b>Consecutive Short Call Count</b>	Sets how many continuous short calls will cause the card lock. A call shorter than the set time (e.g. 5s) will be regarded as a short call.
<b>Short Call Duration</b>	Set the time duration for a short call.

<b>Consecutive Fast Answer Count</b>	Sets how many continuous calls of fast answer will cause the card lock.
<b>Fast Answer Time</b>	A call which is answered in the set time will be regarded as a fast answer call. This set time is the fast answer time and all answers in this time are fast answers.
<b>Consecutive Busy Count</b>	Sets how many continuous calls in busy will cause the card lock.
<b>Consecutive Dial Failure Count</b>	Sets how many continuous calls with dial failure will cause the card lock.
<b>Apply to All Ports</b>	Sets whether to apply these configurations to all ports on the gateway.

Click **Modity** to save the modified settings into the gateway, click **Reset** to restore the configurations, or click **Return** to go back to the Lock SIM interface. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page. **Unlock** means to unlock the locked card slot. After that, calls are allowed on this slot as long as it is in use. **Lock** means to lock those card slots which meet locking requirements or need locking manually. After that, calls are forbidden on such slot as long as it is in use.

The SIM Lock List interface will display locked card slots at present.

## 3.7 Call Management

Call Management includes eight parts: **Balance**, **Port Limit**, **Name List Timer**, **Tel→IP Auto Route**, **Blacklist**, **SMS Count**, **Auto Function** and **Port Charge**. **Balance** is used to query the remaining time and balance of a cell phone number; **Port Limit** is used to calculate the call time length of the corresponding number; **Name List Timer** is used to set the timing rule to count and manage the call time of the target number; **Tel→IP Auto Route** is used to set the route for the remote end to call back; **Blacklist** is used to set a number table to forbid some incoming calls; **SMS Count** is used to calculate the number of short messages from a phone number corresponding to a port; **Auto Function** is used to make calls and send SMS from port to port in a special condition so as not to be blocked by the operator; **Port Charge** is used to count the call fees for a phone number corresponding to a port.

### 3.7.1 Balance

Via the Balance Query interface, you can query the balance of a designated cell phone number. Click Modify to modify the query mode.

The table below explains the configuration items on the Query Mode Modification interface.

Item	Description
<b>Query Mode</b>	Sets the mode to query. There are three options available: SMS, ATD, USSD.
<b>Destination Number</b>	Sets the destination number to query
<b>Content to Send</b>	Sets the content to send.
<b>Keywords to Match</b>	The balance matching the keywords will be displayed.
<b>Query after SIM Card Registered</b>	Sets whether to query the balance automatically once the SIM card is registered to the base station.
<b>Query Regularly</b>	Sets the time to query the balance regularly.
<b>Alarm for Insufficient Balance</b>	Once this feature is enabled, the gateway will notify the users by sending SMS or Email once the balance goes insufficient. The default value is <i>disabled</i> .
<b>Alarm Threshold</b>	Sets the threshold for the insufficient balance to send the alarm.
<b>Alarm via SMS, Alarm via Email</b>	Sets the addresses to receive the SMS/Email while the balance is insufficient.

<b>Alarm via Web</b>	Once this feature is enabled, the alarm information concerning the Insufficient Balance will be displayed on the web.
<b>Apply to Other Ports</b>	Sets whether to apply these query conditions to other ports or port groups.

Click **Modify** to save the above settings into the gateway or click **Reset** to restore the configurations. Click **Cancel** to cancel the modification. Click **Test** to set a balance query strategy, and then execute it to test the balance query feature. And this can help to set a proper balance query strategy. See Figure 3-32.

The interface is titled "Balance Query Strategy Test". It contains three input fields: "Keywords to Match" (a small text box), "SMS Content" (a large text area), and "Balance" (a small text box). At the bottom, there are two buttons: "Query" and "Return".

Figure 3-32 Balance Query Strategy Test Interface

Enter the **Keywords to Match** and **SMS Content**, then click **Query** to query the information about the balance.

### 3.7.2 Port Limit

The Port Limit interface displays such information as the call time limit on the number corresponding to the port, the timer clear cycle as well as the alarm for the call time allowance. Click Modify for each port to modify the port limit settings.

The table below explains the configuration items on the Port Timing Setting interface.

Item	Description
<b>Port</b>	The number of the port corresponding to the wireless module.
<b>Unit</b>	Sets the timing unit for the call, eight options available: 1s, 5s, 10s, 20s, 30s, 40s, 50s and 60s. The actual call time will be calculated as the integral multiple of the setting time. Take an example: supposed the setting time is 30s and the actual call time is 72s, thus, the gateway will consider the call time as 90s.
<b>Store Call Time to SIM</b>	Sets whether to write the time duration of calls on the card slot to the SIM card, with the default setting of unticked. Once it is ticked, the call time duration will be only written into the SIM card, but not saved to the Calltime file. This feature is supported by all gateways except for the ZTE module of the CDMA gateway.



<b>Update Call Time to SIM</b>	Sets whether to update the time duration of calls in gateway to the SIM card, with the default setting of ticked.
<b>Time Limit on a Single Call</b>	Sets whether to enable the time limit on a single call.
<b>Max Call Time</b>	Sets the maximum time length of a call.
<b>Time Limit on a Single Day</b>	Sets whether to enable the time limit on calls in a single day.
<b>Switch to Other Card if no Time</b>	Sets whether to switch to other available SIM card if the current SIM card has no available time to make calls. Note: This configuration is unavailable for SMG4004 and SMG4008 series gateway.
<b>Time Limit on Total Calls</b>	Sets whether to enable the time limit on all calls at the port.
<b>Timing Cycle</b>	Sets the time count cycle for the port.
<b>Clear</b>	Sets the time node to clear the time count.
<b>Set Spent Call Time</b>	Sets the spent call time length of the port.
<b>Alarm for Call Time Allowance</b>	Once this feature is enabled, when the remaining call time of the port is less than the alarm threshold value, the gateway will send the alarm information.
<b>Allowance Alarm Threshold</b>	Sets the threshold value for the remaining call time.
<b>Alarm via SSM, Alarm via Email</b>	Sets the way to send the alarm information. The gateway can send the alarm information via both SMS and Email or either of them.
<b>Call Count Limit</b>	Sets limit to calls on a gateway port by call count.
<b>Count Cycle</b>	Sets the cycle to count calls. The count will be cleared automatically before a new cycle.
<b>Max Call Count</b>	Sets the maximum count of calls in a cycle.
<b>Count Method</b>	Sets the way to count calls.
<b>Switch to Other Card if Count is Full</b>	Sets whether to switch the current SIM card with full call count to another available SIM card. Note: This configuration is unsupported by the SMG4004, SMG4008 and G1 series gateways.
<b>Count Limit on Single Minute</b>	Sets the number of calls per minute.
<b>Apply to Other Ports</b>	Sets whether to apply above settings to other ports or port groups.

Click **Modify** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Return** to cancel the settings.

**Note:** This feature is unsupported in the SimBank mode.

### 3.7.3 Name List Timer

Figure 3-33 Name List Timer Interface

See Figure 3-33 for the Name List Timer interface, which contains two parts: Port Timing and Name List Timer Rule. You can add the timing rule to count the call time for the port. Click **Add New** in Figure 3-33 to add a timing rule.

The table below explains the configuration items on the Add Name List Timing Rule interface.

Item	Description
<b>Number</b>	Sets the number to be timed.
<b>Import Number</b>	Used to import the files on which the numbers need to be timed.
<b>Number Matching Rule</b>	Sets the rule to match the numbers, two options available: Prefix Matching and Whole Words only, with default value of <i>Prefix Matching</i> .
<b>Max Call Time</b>	Sets the maximum time length for a call.
<b>Timing Cycle</b>	Sets the timing cycle for the port, four options available: Day, Week, Month, Year.
<b>Clear</b>	Sets the time node to clear the timing.

Click **Save** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Return** to cancel the settings. After adding the timing rules, click **Setting** button on the up right corner in Figure 3-33 to set the timing rule for each port. See Figure 3-34 for the setting interface.

Figure 3-34 Set Port Timing Rule Interface

The table below explains the configuration items shown in the above figure:

Item	Description
<b>Rule Index</b>	The index number of the timing rule corresponding to the port.
<b>Set Spent Call Time</b>	Sets the call time already used by the port.

Click **Save** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Return** to cancel the settings.

### 3.7.4 Tel to IP Auto Route

The Tel→IP Auto Route is used to set routes for the remote phone to call back the gateway. By default, there is no available auto route for a Tel→IP call, click the **Setting** button to set it.

The table below explains the configuration items on the Tel→IP Auto Route Settings interface.

Item	Description
<b>Route Holding Time</b>	Sets the valid time of the route.
<b>Route Calls back to IP Side</b>	<p>Once this feature is enabled, the calls from the PSTN terminal to the soft terminal will be routed to the soft terminal of the original call. That is, when the soft terminal A called the PSTN terminal B via our gateway, if B doesn't answer the call or A cancels the call, the later call from B back to the gateway will be routed to the soft terminal A directly.</p> <p>Once this feature is disabled, the later call dialed back by the remote terminal B will be routed to the original calling party A only if B doesn't answer the first call from A to B.</p>

Click **Modify** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Return** to cancel the settings.

### 3.7.5 Blacklist

On the Incoming Call Blacklist interface, you can designate certain numbers to limit corresponding calls to go into the gateway (calls from the gateway out as well as the SMS are unlimited). The table below explains the configuration items on this interface.

Item	Description
<b>Blacklist</b>	Sets the number list to forbid certain calls to go into the gateway.
<b>Processing Mode</b>	Sets the processing mode for the calls from the numbers in the blacklist to the gateway, two options available: Hang up directly and Hang up after ringing, with the default value of <i>Hang up directly</i> .

Click **Save** to save the settings into the gateway, click **Reset** to restore the configurations.

### 3.7.6 SMS Count

















SMS Count						
Check	Port	Cell Phone No.	Max Pieces of SMS in a Cycle	Used Pieces of SMS in a Cycle	Clear SMS Count	Modify
<input type="checkbox"/>	1	13750845957	Unlimited	---	---	
<input type="checkbox"/>	2	13588242026	Unlimited	---	---	
<input type="checkbox"/>	3	13082813431	Unlimited	---	---	
<input type="checkbox"/>	4	---	Unlimited	---	---	
<input type="checkbox"/>	5	---	Unlimited	---	---	
<input type="checkbox"/>	6	---	Unlimited	---	---	
<input type="checkbox"/>	7	---	Unlimited	---	---	
<input type="checkbox"/>	8	---	Unlimited	---	---	
<input type="checkbox"/>	9	---	Unlimited	---	---	
<input type="checkbox"/>	10	---	Unlimited	---	---	
<input type="checkbox"/>	11	---	Unlimited	---	---	
<input type="checkbox"/>	12	---	Unlimited	---	---	
<input type="checkbox"/>	13	---	Unlimited	---	---	
<input type="checkbox"/>	14	---	Unlimited	---	---	
<input type="checkbox"/>	15	---	Unlimited	---	---	
<input type="checkbox"/>	16	---	Unlimited	---	---	

Figure 3-35 SMS Count Interface

See Figure 3-35 for the SMS Count interface, which displays such information as the maximum pieces of SMS in a cycle, the used pieces of SMS in a cycle as well as the clear operation. Click **Modify** for each port in Figure 3-35 to modify the SMS count settings.

The table below explains the configuration items on the SMS Count Configuration interface.

Item	Description
<b>Port</b>	The number of the port corresponding to the wireless module.
<b>SMS Amount Limit</b>	Sets whether to enable the limit on the amount of SMS on a port.
<b>Max Pieces of SMS</b>	Sets the maximum amount of SMS.
<b>Count Cycle</b>	Sets the SMS counting cycle for the port
<b>Clear</b>	Sets the time node to clear the SMS count.
<b>Apply to Other Ports</b>	Sets whether to apply above settings to other ports or port groups.

Click **Modify** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Return** to cancel the settings.

### 3.7.7 Auto Function

You can set via the Auto Function Settings interface to implement automatic calls and SMS from port to port in some special conditions. The table below explains the configuration items shown in the above figure:

Item	Description
<b>Port-to-port Call</b>	When this feature is enabled, the gateway will make calls from port to port once the set condition is triggered.
<b>Min. Call Duration</b>	The minimum call time for the port-to-port call.

<b>Max. Call Duration</b>	The maximum call time for the port-to-port call.
<b>Auto Send SMS</b>	When this feature is enabled, the gateway will send SMS from port to port once the set condition is triggered.
<b>SMS-1 (random)</b>	Once the feature <b>Auto Send SMS</b> is enabled, the gateway will choose one piece at random from the set SMS to send.
<b>By Device Runtime</b>	When this feature is enabled, as long as the device runtime reaches the set time, the gateway will automatically enable the feature <b>Port-to-port Call</b> or <b>Auto Send SMS</b> .
<b>Min. Runtime</b>	The minimum runtime of the device.
<b>Max. Runtime</b>	The maximum runtime of the device.
<b>By Accumulated Call Duration</b>	When this feature is enabled, as long as the accumulated call time of a port reaches the set time, the gateway will make calls or send messages between this port and its bound port.
<b>Accumulated Call Duration</b>	The accumulated call time of a port. When it reaches or gets greater than the set value, the feature <b>Port-to-port Call</b> or <b>Auto Send SMS</b> will be triggered.
<b>By Amount of Consecutive Calls Out</b>	When this feature is enabled, as long as the amount of consecutive calls out from a port reaches the set time, the gateway will make calls or send messages between this port and its bound port.
<b>Amount of Consecutive Calls Out</b>	The amount of consecutive calls out from a port. When it reaches or gets greater than the set value, the feature <b>Port-to-port Call</b> or <b>Auto Send SMS</b> will be triggered.

Click **Save** to save the settings into the gateway, click **Reset** to restore the configurations.

### 3.7.8 Port Charge

The Port Charge interface displays such information as the first and second billing cycles and rates, the total expense, the spent amount of the call expense, the clear operation as well as the no balance alarm. Click Modify for each port to modify the SMS count settings.

The table below explains the configuration items on the Call Billing Settings interface.

Item	Description
<b>Port</b>	The number of the port corresponding to the wireless module.
<b>Billing Limit</b>	Sets whether to enable the cost limit on calls for a port.
<b>Charge Mode</b>	The way to charge, providing two options: <b>General Mode</b> , <b>Prefix Matching</b> .
<b>Charge Rule Index</b>	The index of charge rule which appears only in the <b>Prefix Matching</b> mode. Each rule has a unique index.
<b>First Billing Cycle</b>	The first period of a call to charge, e.g. the first 1 minute.
<b>First Billing Rate</b>	The charge for the first period of a call, e.g. 5 yuan for the first 1 minute.
<b>Second Billing Cycle</b>	Each period after the first one of a call to charge
<b>Second Billing Rate</b>	The charge for each period after the first one of a call
<b>Max Charge</b>	Sets the maximum charge for a call.
<b>Switch to Other Card if No Balance</b>	Sets whether to switch the SIM card to another automatically if it has no balance.

<b>Billing Cycle</b>	Sets the billing cycle for the port.
<b>Clear</b>	Sets the time node to clear the charge.
<b>Set Spent Amount</b>	Sets the spent amount of call fees for the port.
<b>No Balance Alarm</b>	When this feature is enabled, the gateway will send an alarm once the balance in the SIM card goes insufficient.
<b>Alarm Threshold</b>	Sets the threshold for the insufficient balance to send the alarm.
<b>Alarm via SMS</b> <b>Alarm via Email</b>	Sets the way to send the alarm information. The gateway can send the alarm information via both SMS and Email or either of them to the corresponding number or mailbox.
<b>Apply to Other Ports</b>	Sets whether to apply above settings to other ports or port groups.

Click **Modify** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Return** to cancel the settings.

Press the **Add New** button on the bottom right corner of the Port Charge interface to add a new charge rule. See below for details.

Item	Description
<b>Index</b>	The unique index of each charge rule.
<b>Number Prefix</b>	The prefix of called party numbers in the charge rule. All calls with called party numbers having such prefix will be charged by this rule.
<b>Bill Cycle</b>	The cycle to charge.
<b>Bill Rate</b>	The bill for each charge cycle.

After your configuration, click **Save** to save the above settings into the gateway, click **Reset** to restore the configurations, and click **Return** to cancel your modification.

## 3.8 Port Settings

Port Settings includes two parts: **Port** and **Port Group**.

### 3.8.1 Port









Port Settings													Batch Modify
Port	SIP Account	Authentication Username	Connection Method	Bound Number	Forbid Outgoing Call	Forbid Incoming Call	Caller ID Detection	Reg Status	Echo Canceller	Color Ring	Color Ring Index	Modify	
1	8001	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
2	8002	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
3	8003	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
4	8004	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
5	8005	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
6	8006	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
7	8007	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		
8	8008	---	Two Stage Dialing Mode	---	Disable	Disable	Enable	Unregistered	Enable	Disable	---		

Figure 3-36 Port Settings Interface

The Port Settings interface shows the feature and properties of each port. Click **Modify** in Figure 3-36 to modify the properties of the corresponding port.

The table below explains the configuration items on the port modification interface.

Item	Description
<b>Port</b>	Serial number of the port on the device.

<b>Register Port</b>	<p>Sets whether to register the port to the SIP server.</p> <p>When this item is set to <i>No</i>, the item <b>Reg Status</b> on the Port Settings interface (Figure 3-36) shows <i>Unregistered</i>; when this item is set to <i>Yes</i>, the item <b>Reg Status</b> shows <i>Failed</i> or <i>Registered</i>.</p>						
<b>SIP Account</b>	<p>When the port initiates a call to SIP, this item corresponds to the username of SIP. The default SIP account is 80XX among which XX represents the corresponding port number. For example, the default SIP account corresponding to Port 1 is 8001, and that corresponding to Port 8 is 8008.</p>						
<b>Password</b>	<p>Registration password of the port. To register a port to the SIP server, both items <b>SIP Account</b> and <b>Password</b> must be filled in.</p>						
<b>Connection Method</b>	<p>Port connection methods include:</p> <table border="1"> <thead> <tr> <th>Option</th><th>Description</th></tr> </thead> <tbody> <tr> <td><i>Static Binding</i></td><td>Bind the number to a wireless port. The number will be listed in the Bound Number column.</td></tr> <tr> <td><i>Two Stages Dialing Mode (default)</i></td><td>Under this mode, an incoming call from a wireless port will go into the IVR system. Then IVR will play a speech prompt "Please dial the extension number". If you fail to input the correct target number before IVR finishes the third repeat of the prompt, the port will hang up the call automatically; otherwise, the call goes out successfully.</td></tr> </tbody> </table> <p><b>Note:</b> Both items Connection Method and Bound Number will be hidden if the SIP Station feature is enabled on the SIP Settings interface.</p>	Option	Description	<i>Static Binding</i>	Bind the number to a wireless port. The number will be listed in the Bound Number column.	<i>Two Stages Dialing Mode (default)</i>	Under this mode, an incoming call from a wireless port will go into the IVR system. Then IVR will play a speech prompt "Please dial the extension number". If you fail to input the correct target number before IVR finishes the third repeat of the prompt, the port will hang up the call automatically; otherwise, the call goes out successfully.
Option	Description						
<i>Static Binding</i>	Bind the number to a wireless port. The number will be listed in the Bound Number column.						
<i>Two Stages Dialing Mode (default)</i>	Under this mode, an incoming call from a wireless port will go into the IVR system. Then IVR will play a speech prompt "Please dial the extension number". If you fail to input the correct target number before IVR finishes the third repeat of the prompt, the port will hang up the call automatically; otherwise, the call goes out successfully.						
<b>Echo Canceller</b>	<p>The echo cancellation feature for a call conversation over the wireless channel. By default, this feature is enabled and the effect can reach 128ms.</p>						
<b>Forbid Outgoing Call</b>	<p>If this feature is enabled, the port will be forbidden to call out. The default setting is <i>disabled</i>.</p>						
<b>Forbid Incoming Call</b>	<p>If this feature is enabled, the port will be forbidden to call in. The default setting is <i>disabled</i>.</p>						
<b>Caller ID Detection</b>	<p>If this feature is enabled, the port will detect the Caller IDs from the incoming calls. The default setting is <i>enabled</i>.</p>						

After configuration, click **Modify** to save the settings into the gateway, click **Reset** to restore the configurations, or click **Cancel** to cancel the settings.

Or you can click **Batch Modify** in Figure 3-36 to modify several pieces of port settings at the same time.

Some configuration items are the same as those on the **Port Modification Interface**. The others are described in the table below.

Item	Description
<b>Starting Port</b>	The starting serial number of the port on the device in the batch setting.
<b>Ending Port</b>	The ending serial number of the port on the device in the batch setting.
<b>Register Port</b>	Sets whether to register the port to the SIP server.
<b>Starting SIP Account</b>	The starting SIP account in the batch setting.

<b>Starting Authentication Password</b>	The starting authentication password in the batch setting.
<b>SIP Account Batch Rule</b>	The rule for batch setting the SIP account, including <b>Increase</b> and <b>Decrease</b> two options.
<b>SIP Account Batch Step Size</b>	Sets the increase or decrease step size of the SIP account in the batch setting.
<b>Authentication Password Batch Rule</b>	The rule for batch setting the authentication password, including <b>Increase</b> , <b>Decrease</b> and <b>All Same</b> three options.
<b>Authentication Password Batch Step Size</b>	Sets the increase or decrease step size of the authentication password in the batch setting.
<b>Bound Number Step Rule</b>	It appears when the connection method is set to Static Binding, used to configure the step rule of the bound number in the batch setting, three options available: Increase, Decrease, Same.
<b>Bound Number Step Size</b>	It appears when the connection method is set to Static Binding, used to configure the increase or decrease step size of the bound number in the batch setting,

After configuration, click **Save** to save the settings into the gateway, or click **Cancel** to cancel the settings.

### 3.8.2 Port Group

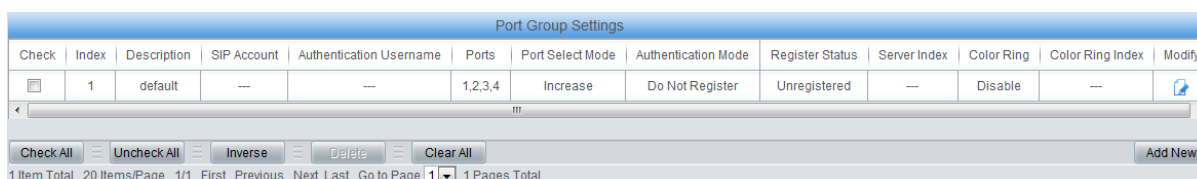


Figure 3-37 Port Group Settings Interface

See Figure 3-37 for the port group settings interface. A port group is a set containing single or multiple ports, used to specify such properties as **Port Selection** and **Authentication Mode** for all the ports in it. A new port group can be added by the **Add New** button on the bottom right corner of the above list. Note that a port which has been occupied by one port group cannot be chosen by others.

The table below explains the items on the Port Group Adding interface.

Item	Description
<b>Index</b>	The unique index of each port group, which is mainly used in the configuration of routing rules and number manipulation rules to correspond to port groups.
<b>Description</b>	More information about each port group, with default value of <i>default</i> .
<b>Register Port Group</b>	To register the port group to the SIP server. Only when this configuration item is set to Yes can you see the configuration items <b>SIP Account</b> and <b>Password</b> .
<b>SIP Account</b>	When the port group initiates a call to SIP, this item corresponds to the username of SIP.
<b>Password</b>	Registration password of the port group. To register the port group to the SIP server, both configuration items <b>SIP Account</b> and <b>Password</b> should be filled in.
<b>Authentication Username</b>	Authentication username of a port, used to register the port to the SIP server when IMS network is enabled. <b>Note: This item appears only when IMS Network is enabled.</b>



<b>Server Index</b>	The index of the sip server which will be quoted by the current port.	
<b>Authentication Mode</b>	Sets the way for SIP to make outgoing calls (Tel→IP) on the gateway.	
	<b>Option</b>	<b>Description</b>
	<i>Do Not Register (default)</i>	SIP initiates a call in a point-to-point mode.
	<i>Register Port Group</i>	SIP initiates a call with the registered SIP account and password of the port group.
<b>Register Status</b>	<i>Register Port</i>	SIP initiates a call with the registered SIP account and password of the port.
	Registration status of the port group. See Figure 3-37. When <b>Register Port Group</b> is set to <i>No</i> , the value of this item is <i>Unregistered</i> ; when <b>Register Port Group</b> is set to <i>Yes</i> , the value of this item may be <i>Failed</i> or <i>Registered</i> .	
<b>Port Select Mode</b>	When the port group receives a call, it will choose a port based on the select mode set by this configuration item to ring or to connect. The optional values and their corresponding meanings are described in the table below.	
	<b>Option</b>	<b>Description</b>
	<i>Increase (default)</i>	Search for an idle port in the ascending order of the port number, starting from the minimum. If no match is found, search repeatedly until finding a port which is allowed to enter the call waiting state.
	<i>Decrease</i>	Search for an idle port in the descending order of the port number, starting from the maximum. If no match is found, search repeatedly until finding a port which is allowed to enter the call waiting state.
	<i>Cyclic Increase</i>	Provided Port N is the available port found last time. Search for an idle port in the ascending order of the port number, starting from Port N+1. If no match is found, search repeatedly until finding a port which is allowed to enter the call waiting state.
	<i>Cyclic Decrease</i>	Provided Port N is the available port found last time. Search for an idle port in the descending order of the port number, starting from Port N-1. If no match is found, search repeatedly until finding a port which is allowed to enter the call waiting state.
<b>Color Ring</b>	<i>Group Ringing</i>	Ring all the idle wireless ports in this port group.
	Sets whether to enable the color ring feature or not, with the default setting of being <i>disabled</i> . <b>Note:</b> Only when there are available color rings and the “Port Select Mode” is set to Grouping Ringing will this item appear.	
<b>Color Ring Index</b>	The index of the color ring which is quoted by the current wireless port.	

<b>Port</b>	The ports in the port group. If the checkbox before a port is grey, it indicates that the port is not available or has been occupied. All selected ports for a port group will be displayed in the <b>Ports</b> column in Figure 3-37. Note: When a port group contains multiple ports, the automatic call forward feature is invalid.
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After configuration, click **Save** to save the settings into the gateway, click **Cancel** to cancel the settings. **Check All** means to select all available ports on the current page; **Inverse** means to uncheck the selected items and check the unselected.

Click **Modify** in Figure 3-37 to modify the properties of a port group. The configuration items on the Port Group Modification interface are the same as those on the **Add New Port Group** interface.

To delete a port group, check the checkbox before the corresponding index in Figure 3-37 and click the '**Delete**' button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all port groups at a time, click the **Clear All** button in Figure 3-37.

## 3.9 Route Settings

Route Settings is used to specify the routing rules for calls on two directions: IP→Tel/IP and Tel→IP.

### 3.9.1 Routing Parameters

Figure 3-38 Routing Parameters Configuration Interface

See Figure 3-38 for the routing parameters configuration interface. On this interface, you can set the routing rules for calls respectively on two directions IP→Tel/IP and Tel→IP to be routing before or after number manipulation. The default value is *Route before Number Manipulate*.

After configuration, click **Save** to save the above settings into the gateway.

### 3.9.2 IP to Tel/IP

By default, there is no available routing rule displayed on the IP→Tel/IP routing rule configuration interface. And the IP→Tel/IP routing rule configuration has two modes: Standard and Character.

Under the Standard mode, click **Add New** to add them manually. You may use the default values of all the configuration items herein.

The table below explains the items on the IP→Tel/IP routing rule configuration interface.

Item	Description
<b>Index</b>	The unique index of each routing rule, which denotes its priority. A routing rule with a smaller index value has a higher priority. If a call matches several routing rules, it

	will be processed according to the one with the highest priority.
<b>Description</b>	More information about each routing rule, with the default value of <i>default</i> .
<b>Source IP</b>	IP address from where the call is initiated. This item can be set to a specific IP address or "*" which indicates any IP address
<b>CallerID Prefix, CalleeID Prefix</b>	A string of characters at the beginning of the caller/called party number. It can be a specific string consisting of digits 0~9, "[*]", "#", or character ranges defined by [ ]. '[ ]' represents a character within the range it defines. Values in [ ] only can be characters '0~9', "[*]", "#", punctuations '-' and ',' ('-' is used between two characters to indicate any character between these two characters, ',' is used to separate characters or character ranges, representing alternatives.) For example, 057[1-3,6] represents the string 0571, 0572, 0573 or 0576. Also these items can be set to "*" which indicates any string. These two configuration items together with <b>Source IP</b> specify a routing rule for calls. <b>Note:</b> "[*]" represents TFM symbol *, while "*" represents any string; Multiple CallerID/CalleeID prefixes can be added simultaneously. They are separated by ":".
<b>Route by Number</b>	When this feature is enabled, the gateway will route a call from IP to a corresponding port based on its number. And the number of the port which this call will be routed to can be set via the item <b>SIP Account</b> on the Port Settings interface. In such case, the configuration item <b>Call Destination</b> goes invalid and shows Route by Number on the routing rule configuration interface. The default setting is <i>disabled</i> .
<b>Call Destination</b>	Designate a port group or an IP for the call to route.
<b>Destination Port Group</b>	Port group to which the call will be routed.
<b>Destination IP, Destination Port</b>	The IP address and port to which the call will be routed.

After configuration, click **Save** to save the settings into the gateway or click **Close** to cancel the settings.

See Figure 3-39 for the IP→Tel/IP routing rule configuration interface after your configuration. There is a rule displayed with Index 63 and Call Destination 'Route by Number', having no restriction on Source IP, CallerID Prefix and CalleeID Prefix, which indicates the gateway will route a call from any IP address to a corresponding port based on its number.

Press the **Add New** button on the bottom right corner of the list to add a new routing rule.

Standard Mode   Character Mode		IP→Tel/IP Routing Rule					
Check	Index	Source IP	CallerID Prefix	CalleeID Prefix	Call Destination	Description	Modify
<input type="checkbox"/>	63	*	*	*	Route by Number	default	
Check All   Uncheck All   Inverse   Delete   Clear All							
1 Item Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total							
							Add New

Figure 3-39 IP→Tel/IP Routing Rule Configuration Interface

Click **Modify** in Figure 3-39 to modify a routing rule. The configuration items on the IP→Tel/IP routing rule modification interface are the same as those on the **Add New Routing Rule (IP→Tel/IP)** interface. Note that the item **Index** cannot be modified.

To delete a routing rule, check the checkbox before the corresponding index in Figure 3-39 and click the **Delete** button. **Check All** means to select all available items on the current page;

**Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all routing rules at a time, click the **Clear All** button in Figure 3-39.

On the IP→Tel/IP Routing Rule Configuration interface under the Character mode, you can edit the routing rule list to add a new one or modify an old one. The exact meaning of each element of the rule is described on the page.

### 3.9.3 Tel to IP

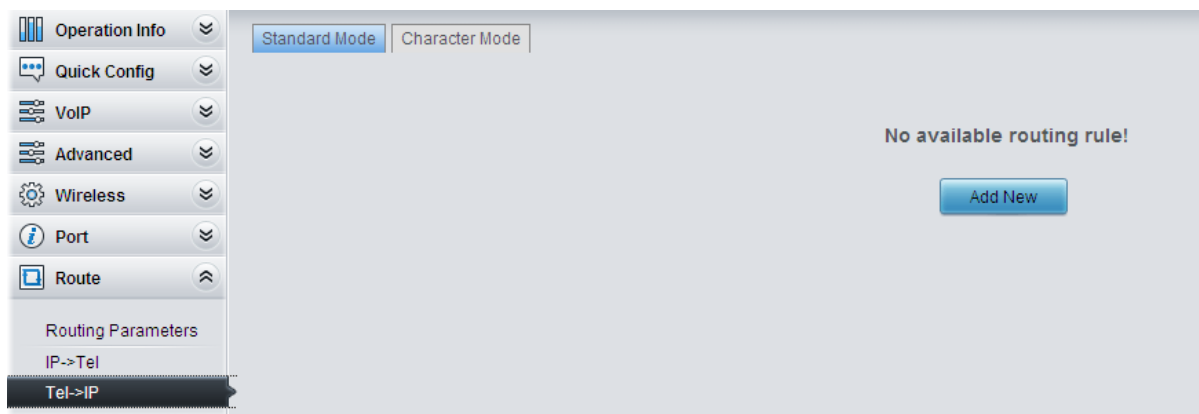


Figure 3-40 Tel→IP Routing Rule Configuration Interface (Standard)

See Figure 3-40 for the Tel→IP routing rule configuration interface. By default, there is no available routing rule on the gateway. The Tel→IP routing rule configuration has two modes: Standard and Character.

Under the Standard mode, click **Add New** to add them manually. You may use the default values of all the configuration items herein except for **Destination IP** and **Destination Port**.

The table below explains the items on the Tel→IP routing rule configuration interface.

Item	Description
<b>Index</b>	The unique index of each routing rule, which denotes its priority. A routing rule with a smaller index value has a higher priority. If a call matches several routing rules, it will be processed according to the one with the highest priority.
<b>Description</b>	More information about each routing rule, with the default value of <i>default</i> .
<b>Source Port Group (Call Initiator)</b>	Port group from which the call is initiated. This item can be set to a specific port group or '*' which indicates any port group.
<b>CallerID Prefix, CalleeID Prefix</b>	A string of characters at the beginning of the caller/called party number. It can be a specific string consisting of digits 0~9, "[*]", "#", or characters ranges defined by [ ]. '[ ]' represents a character within the range it defines. Values in [ ] only can be digits '0~9', "[*]", "#", punctuations '-' and ';'. '-' is used between two characters to indicates any characters between these two characters. ';' is used to separate characters or characters ranges, representing alternatives.) For example, 057[1-3,6] represents the string 0571, 0572, 0573 or 0576. Also these items can be set to "*" which indicates any string. These two configuration items together with <b>Source Port Group (Call Initiator)</b> specify a routing rule for calls. <b>Note:</b> "[*]" represents DTFM symbol *, while "*" represents any string; Multiple CallerID/CalleeID prefixes can be added simultaneously. They are separated by ":".

<b>Destination IP, Destination Port</b>	IP address and port number of the remote end to which the call will be routed.
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After configuration, click **Save** to save the settings into the gateway or click **Close** to cancel the settings.

See Figure 3-41 for the Tel→IP routing rule configuration interface after your configuration. There is a rule displayed with Index 63, Destination IP '192.168.1.101' and Destination Port '5060' (i.e. default IP address and port of the gateway), having no restriction on Call Initiator, CallerID Prefix and CalleeID Prefix, which indicates all the outgoing calls from Tel which conform to the dialing rule will be routed to the gateway.

Standard Mode		Character Mode						
Tel->IP Routing Rule								
Check	Index	Call Initiator	CallerID Prefix	CalleeID Prefix	Destination IP	Destination Port	Description	Modify
<input type="checkbox"/>	63	*	*	*	192.168.1.101	5060	default	
<div>Check All   Uncheck All   Inverse   Delete   Clear All</div> <div>1 Item Total   20 Items/Page   1/1   First   Previous   Next   Last   Go to Page 1   1 Pages Total</div> <div>Add New</div>								

Figure 3-41 Tel→IP Routing Rule Configuration Interface

Click **Modify** in Figure 3-41 to modify a routing rule. The configuration items on the Tel→IP routing rule modification interface are the same as those on the **Add New Routing Rule (Tel→IP)** interface. Note that the item **Index** cannot be modified.

To delete a routing rule, check the checkbox before the corresponding index in Figure 3-41 and click the **Delete** button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all routing rules at a time, click the **Clear All** button in Figure 3-41.

On the Tel→IP Routing Rule Configuration interface under the Character mode, you can edit the routing rule list to add a new one or modify an old one. The exact meaning of each element of the rule is described on the page.

## 3.10 Number Manipulation

Number Manipulation includes four parts: **IP→Tel/IP CallerID**, **IP→Tel/IP CalleeID**, **Tel→IP CallerID** and **Tel→IP CalleeID**.

### 3.10.1 IP to Tel/IP CallerID

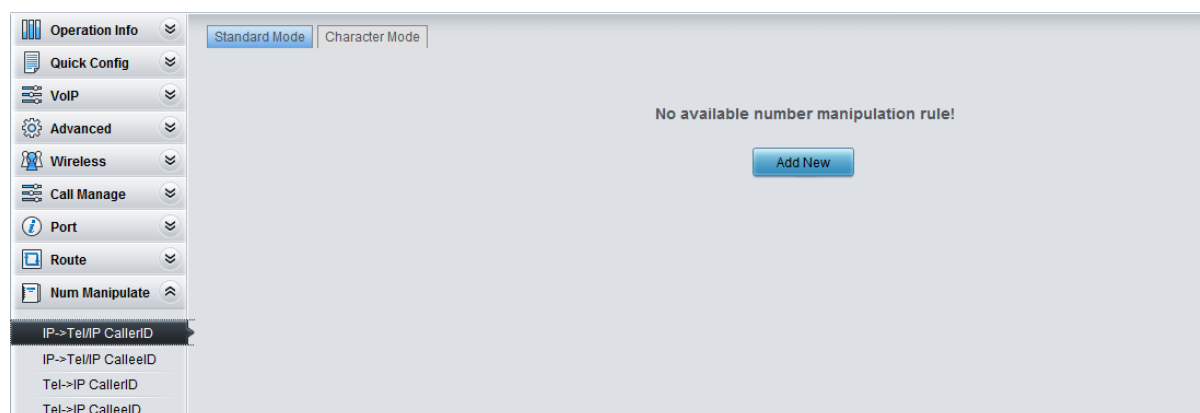


Figure 3-42 IP→Tel/IP CallerID Manipulation Interface (Standard)

See Figure 3-42 for the IP→Tel/IP CallerID manipulation interface under the Standard mode. A new number manipulation rule can be added by the **Add New** button on the bottom right corner of the list in the above figure. On the IP→Tel/IP CallerID manipulation rule adding interface, you may

use the default values of all the configuration items.

The table below explains the items on the IP→Tel/IP CallerID manipulation interface.

Item	Description
<b>Index</b>	The unique index of each number manipulation rule, which denotes its priority. A number manipulation rule with a smaller index value has a higher priority. If a call matches several number manipulation rules, it will be processed according to the one with the highest priority.
<b>Description</b>	More information about each number manipulation rule, with the default value of <i>default</i> .
<b>Call Initiator</b>	IP address from where the call is initiated. This item can be set to a specific IP address or "*" which indicates any IP address.
<b>CallerID Prefix, CalleeID Prefix</b>	A string of characters at the beginning of the caller/called party number. It can be a specific string consisting of digits 0~9, "[*]", "#", or character ranges defined by [ ]. '[' represents a character within the range it defines. Values in [ ] only can be digits '0~9', "[*]", "#", punctuations '-' and ','; '-' is used between two characters to indicate any character between these two characters. ',' is used to separate characters or character ranges, representing alternatives.) For example, 057[1-3,6] represents the string 0571, 0572, 0573 or 0576. Also these items can be set to "*" which indicates any string. These two configuration items together with <b>Call Initiator</b> specify a number manipulation rule for calls. <b>Note:</b> "[*]" represents DTFM symbol *, while "*" represents any string; Multiple CallerID/CalleeID prefixes can be added simultaneously. They are separated by ".".
<b>Stripped Digits from Left</b>	The amount of digits to be deleted from the left end of the number. If the value of this item exceeds the length of the current number, the whole number will be deleted.
<b>Stripped Digits from Right</b>	The amount of digits to be deleted from the right end of the number. If the value of this item exceeds the length of the current number, the whole number will be deleted.
<b>Reserved Digits from Right</b>	The amount of digits to be reserved from the right end of the number. Only when the value of this item is less than the length of the current number will some digits be deleted from left; otherwise, the number will not be manipulated.
<b>Prefix to Add</b>	Designated information to be added to the left end of the current number.
<b>Suffix to Add</b>	Designated information to be added to the right end of the current number.

**Note:** The number manipulation is performed in 5 steps by the order of the following configuration items: **Stripped Digits from Left**, **Stripped Digits from Right**, **Reserved Digits from Right**, **Prefix to Add** and **Suffix to Add**.

After configuration, click **Save** to save the settings into the gateway or click **Close** to cancel the settings. See the figure below.

Figure 3-43 IP→Tel/IP CallerID Manipulation Interface (Standard)

Click **Modify** in Figure 3-43 to modify a number manipulation rule. The configuration items on the IP→Tel/IP CallerID manipulation rule modification interface are the same as those on the **Add IP→Tel/IP CallerID Manipulation Rule** interface. Note that the item **Index** cannot be modified.

To delete a number manipulation rule, check the checkbox before the corresponding index in Figure 3-43 and click the **Delete** button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all number manipulation rules at a time, click the **Clear All** button in Figure 3-43.

On the IP→Tel/IP CallerID Manipulation interface under the Character mode, you can edit the number manipulation rule list to add a new one or modify an old one. The exact meaning of each element of the rule is described on the page.

### 3.10.2 IP to Tel/IP CalleelD

The number manipulation process for IP→Tel/IP CalleelD is almost the same as that for IP→Tel/IP CallerID; only the number to be manipulated changes from CallerID to CalleelD. The configuration items on the IP→Tel/IP CalleelD Manipulation interface are the same as those on **IP→Tel/IP CallerID Manipulation Interface** (Figure 3-43).

### 3.10.3 Tel to IP CallerID

Check	Index	Call Initiator	CallerID Prefix	CalleelD Prefix	Stripped Digits from Left	Stripped Digits from Right	Reserved Digits from Right	Prefix to Add	Suffix to Add	Delete
<input checked="" type="checkbox"/>	63	*	*	*	0	0	0			

1 Item Total 20 Items/Page 1/1 First Previous Next Last Go to Page 1 1 Pages Total

Figure 3-44 Tel→IP CallerID Manipulation Interface (Standard)

See Figure 3-44 for the Tel→IP CallerID manipulation interface under the Standard mode. A new number manipulation rule can be added by the **Add New** button on the bottom right corner of the list in the above figure. See Figure 3-45 for the Tel→IP CallerID manipulation rule adding interface. You may use the default values of all the other configuration items herein.



Figure 3-45 Add Tel→IP CallerID Manipulation Rule

The table below explains the items shown in the above figure.

Item	Description
<b>Index</b>	The unique index of each number manipulation rule, which denotes its priority. A number manipulation rule with a smaller index value has a higher priority. If a call matches several number manipulation rules, it will be processed according to the one with the highest priority.
<b>Description</b>	More information about each number manipulation rule, with the default value of <i>default</i> .
<b>Source Port Group (Call Initiator)</b>	Port group from which the call is initiated. This item can be set to a specific port group or '*' which indicates any port group.
<b>CallerID Prefix, CalleeID Prefix</b>	A string of characters at the beginning of the caller/called party number. It can be a specific string consisting of digits 0~9, "[*]", "#", or character ranges defined by []. '[' represents a character within the range it defines. Values in [] only can be digits '0~9', "[*]", "#", punctuations '-' and ',' ('-' is used between two characters to indicate any character between these two characters. ',' is used to separate characters or character ranges, representing alternatives.) For example, 057[1-3,6] represents the string 0571, 0572, 0573 or 0576. Also these items can be set to "*" which



	<p>indicates any string. These two configuration items together with <b>Call Initiator</b> specify a number manipulation rule for calls.</p> <p><b>Note:</b> “[*]” represents DTFM symbol *, while “*” represents any string; Multiple CallerID/CalleeID prefixes can be added simultaneously. They are separated by “.”.</p>
<b>Stripped Digits from Left</b>	The amount of digits to be deleted from the left end of the number. If the value of this item exceeds the length of the current number, the whole number will be deleted.
<b>Stripped Digits from Right</b>	The amount of digits to be deleted from the right end of the number. If the value of this item exceeds the length of the current number, the whole number will be deleted.
<b>Reserved Digits from Right</b>	The amount of digits to be reserved from the right end of the number. Only when the value of this item is less than the length of the current number will some digits be deleted from left; otherwise, the number will not be manipulated.
<b>Prefix to Add</b>	Designated information to be added to the left end of the current number.
<b>Suffix to Add</b>	Designated information to be added to the right end of the current number.

**Note:** The number manipulation is performed in 5 steps by the order of the following configuration items: **Stripped Digits from Left**, **Stripped Digits from Right**, **Reserved Digits from Right**, **Prefix to Add** and **Suffix to Add**.

After configuration, click **Save** to save the settings into the gateway or click **Close** to cancel the settings.

Click **Modify** in Figure 3-44 to modify a number manipulation rule. The configuration items on the Tel→IP CallerID manipulation rule modification interface are the same as those on the **Add Tel→IP CallerID Manipulation Rule** interface. Note that the item **Index** cannot be modified.

To delete a number manipulation rule, check the checkbox before the corresponding index in Figure 3-44 and click the **Delete** button. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all number manipulation rules at a time, click the **Clear All** button in Figure 3-44.

On the Tel→IP CallerID Manipulation interface under the Character mode, you can edit the number manipulation rule list to add a new one or modify an old one. The exact meaning of each element of the rule is described on the page.

### 3.10.4 Tel to IP CalleeID

The number manipulation process for Tel→IP CalleeID is almost the same as that for Tel→IP CallerID; only the number to be manipulated changes from CallerID to CalleeID. The configuration items on the Tel→IP CalleeID manipulation interface are the same as those on **Tel→IP CallerID Manipulation Interface**.

## 3.11 System Tools

System Tools is mainly for gateway maintenance. It provides such features as change password, data backup, connectivity check, etc.

### 3.11.1 Upgrade

Via the upgrade interface you can upgrade the WEB, gateway service, kernel and firmware to new versions. Select the upgrade package “\*.tar.gz” (The gateway will do MD5 verification before

upgrading and will not start to upgrade until it passes the verification.) and click **Update**. Then the file uploading interface will appear.

During the upgrading, you can learn the detailed upgrading information from the upgrade information box at the bottom.

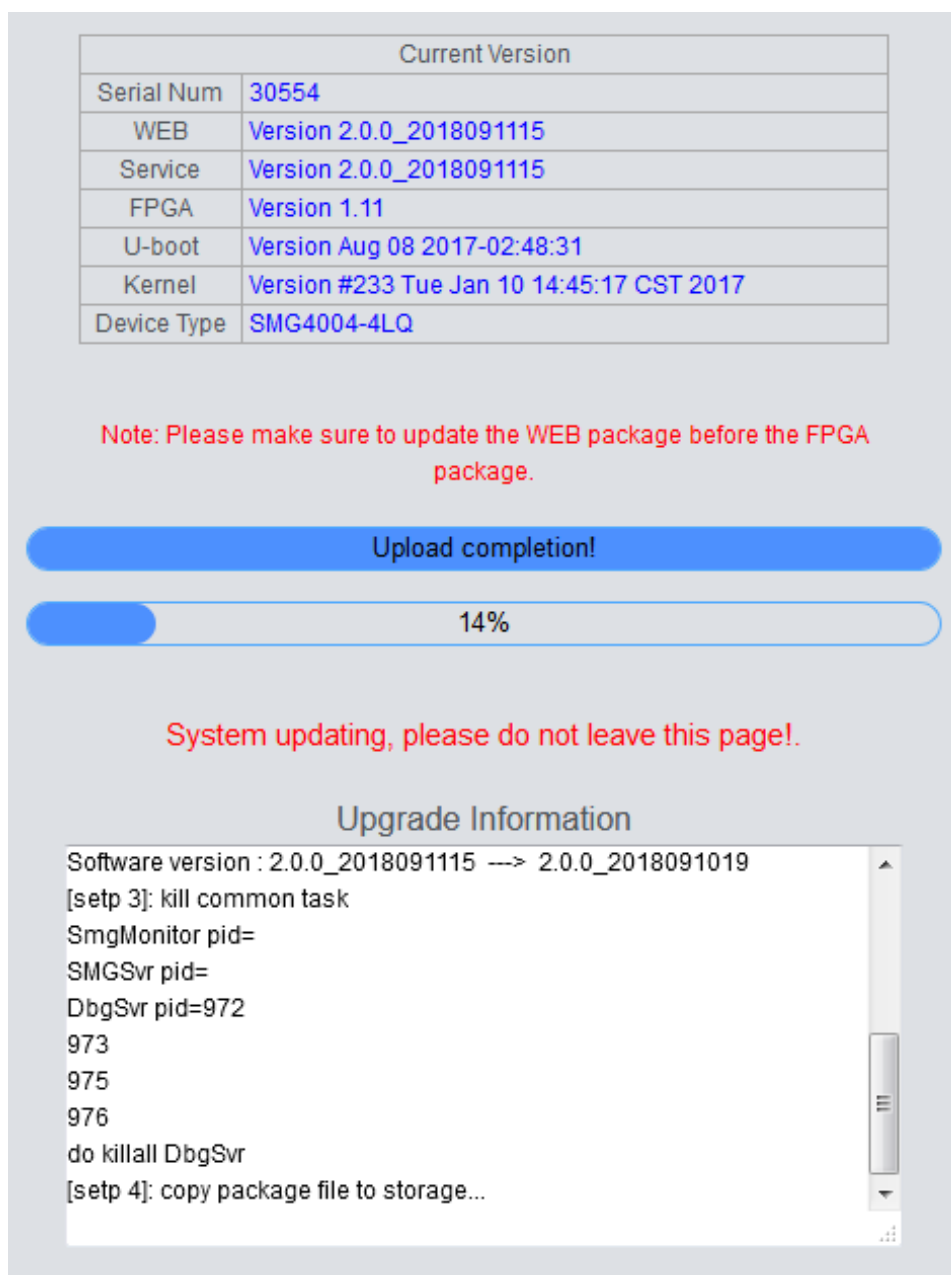


Figure 3-46 System Upgrading Interface

**Note:** Please contact our technicians if you need to downgrade the gateway to an old version. An improper operation may cause unexpected problems.

### 3.11.2 Signaling Capture

Packet capture contains Signaling Packet Capture, RTP Packet Capture. You can select either of them to start the capture according to your requirement. Click **Start** to start capturing packets. Click **Stop** to stop the capture. Click **Download** to download the captured packets.

### 3.11.3 Data Recording

On the Data Recording interface, click **Start** to start the recording; click **Stop** to stop the recording; click **Download** to download the recorded data.

### 3.11.4 Call Log

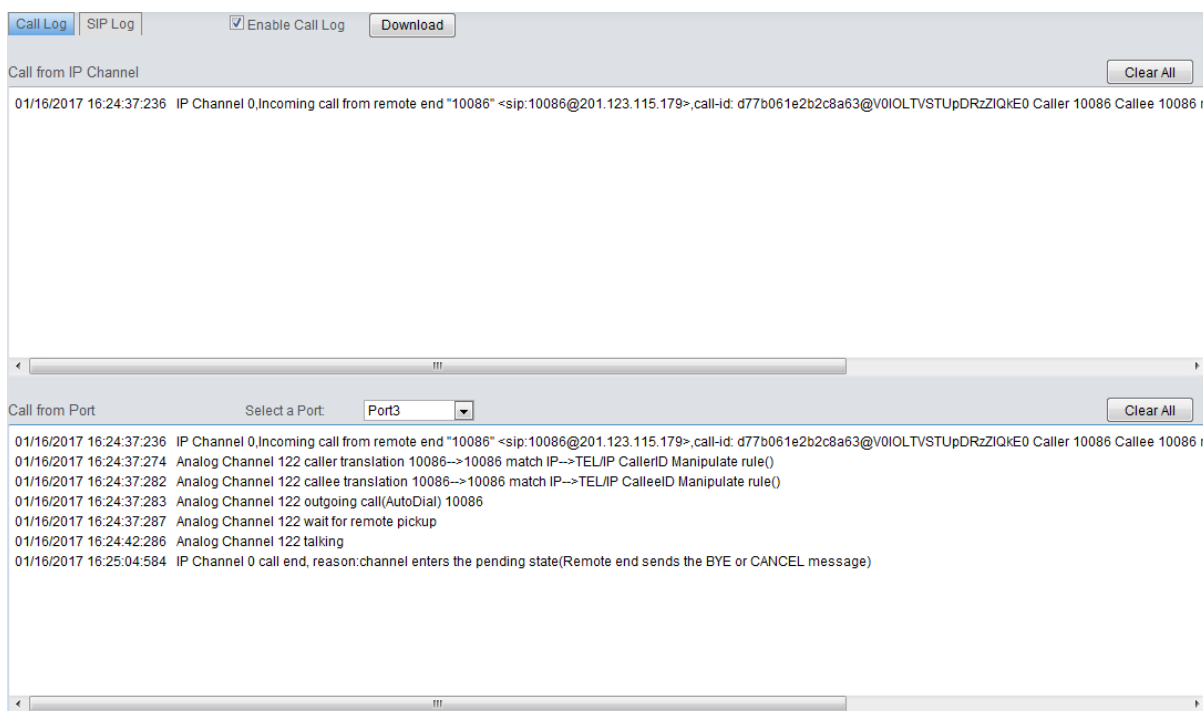


Figure 3-47 Call Log Interface

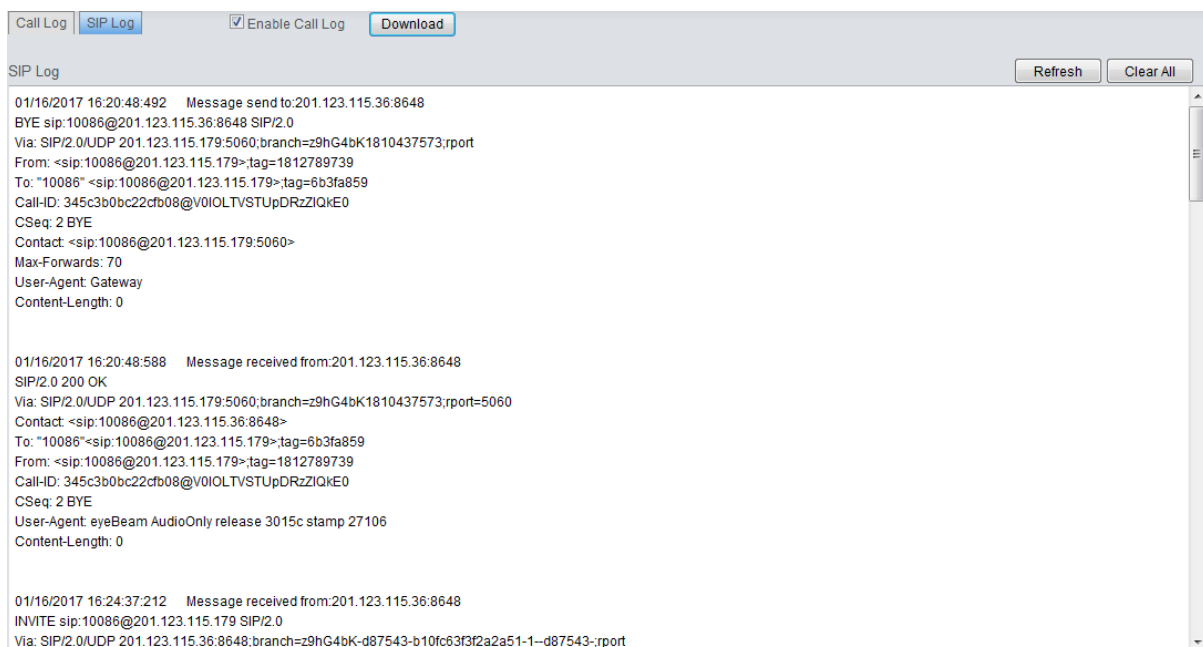


Figure 3-48 SIP Log Interface

On the Call Log interface, click the checkbox before **Enable Call Log** to enable the call log feature, including **Call Log** and **SIP Log**. **Call from IP Channel** displays the call log information generated on all IP channels, and **Call from Port** displays the call log information generated on the port you select. All the SIP related information will be displayed in **SIP Log**.

### 3.11.5 Operation Log

The Operation Log interface is used to check the operation records on WEB. Click **Refresh** to refresh the log; click **Clear All** to clear all the operation logs and click **Download** to download the logs. The operation log will be automatically cleared once the system restarts.

**Note:** The sign <@#> here means the configuration item is null.

### 3.11.6 Change Password

On the password changing interface you can change username and password of the gateway. Enter the current password, the new username and password, and then confirm the new password. After configuration, click **Save** to apply the new username and password or click **Reset** to restore the configurations. After changing the username and password, you are required to log in again.

### 3.11.7 Backup & Upload

Figure 3-49 Backup & Upload Interface

See Figure 3-49 for the backup and upload interface. To back up the configuration file to your PC, just click **Backup**. To upload a configuration file, select it via **Browse...** and click **Upload**.

Figure 3-50 Backup & Upload & Prompt Interface

Click **OK** on the prompt box (Figure 3-50) to upload the configuration file to the gateway. Now the

prompt information 'System is rebooting, please do not leave this page' appears. The gateway will overwrite the current configurations with the uploaded data after restart. Click **Cancel** to cancel this upload directly.

### 3.11.8 Factory Reset



Figure 3-51 Factory Reset Interface

See Figure 3-51 for the factory reset interface. Click **Reset** to restore all configurations on the gateway to factory settings.

### 3.11.9 Restart

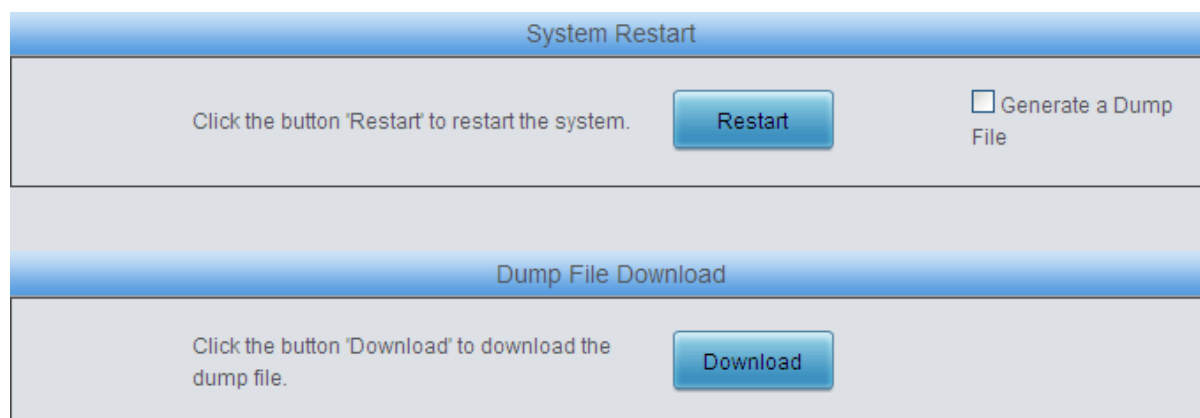


Figure 3-52 System Restart Interface

See Figure 3-52 for the restart interface. Click **Restart** under the service restart interface to restart the gateway service or click **Restart** under the system restart interface to restart the whole gateway system. A dump file will be generated each time you restart the service or the system. Click **Download** and you can download it to help troubleshoot issues.

### 3.11.10 System Monitor

See the System Monitor Configuration interface. Watchdog is a timing reset system used to avoid application crash. You can set the dog feeding interval when this feature is enabled. The feeding interval is calculated by s, with the value range of 1~15s. By default, this feature is enabled with the default value of 5s. As the feature 'Automatically restart the service if undetected' is enabled, the service application will restart automatically if it is not detected by the gateway guard application. By default, this feature is enabled.

### 3.11.11 Centralized Manage

Via the Centralized Manage Setting interface, the gateway can register to a centralized management platform and accept the management of the platform. The table below explains the

items on this interface.

Item	Description
<b>Management Platform</b>	Selects a management platform for the gateway to register, including two options: DCMS and Others.
<b>Centralized Management Protocol</b>	Sets the centralized management protocol. It only supports SNMP currently and is valid only when Others is selected for <b>Management Platform</b> .
<b>SNMP Version</b>	Sets the version of SNMP, three options available: V1, V2 and V3, with the default value of V2. This item is valid only when Others is selected for <b>Management Platform</b> .
<b>Server Address</b>	The address of the server in which the DCMS locates, It can be IP or a domain name. Note: To configure the domain name, make sure the DNS is already configured and the corresponding domain name is analyzable.
<b>Monitoring Port</b>	Monitoring Port for SNMP on the gateway. This item is valid only when Others is selected for <b>Management Platform</b> .
<b>Account</b>	The account of SNMP, valid only when the SNMP version is set to V3.
<b>Grade</b>	The grade of SNMP, three options available: Neither authenticated nor encrypted, Authenticated but not encrypted, Authenticated and encrypted, with the default value of <i>Neither authenticated nor encrypted</i> . It is valid only when the SNMP version is set to V3.
<b>Community String</b>	Community string used for information acquisition.
<b>Company Name</b>	The company name used to register the gateway to DCMS, only valid when DCMS is selected.
<b>Authorization Code</b>	The authorization code is used for the connection verification. A device can connect to the DCMS successfully only after it passes the verification.
<b>Gateway Description</b>	The description displayed on Synway DCMS after the gateway is registered to Synway DCMS, giving an easy identification of the gateway in device grouping. It is valid only when Synway DCMS is selected
<b>Working Status</b>	The status of the connection between the gateway and the centralized management server.

After your modification, click **Save** to save the above settings into the gateway, click **Reset** to restore the configurations, and click **Download MIB** to download the MIB file which can let the centralized management server get the data information structure of our gateway.

### 3.11.12 PING Test

A Ping test can be initiated from the gateway on a designated IP address to check the connection status between them. The table below explains the configuration items on the Ping test interface.

Item	Description
<b>Destination Address</b>	Destination IP address or domain name on which the Ping test is executed.
<b>Ping Count</b>	The number of times that the Ping test should be executed. Range of value: 1~100.
<b>Package Length</b>	Length of the data package used in the Ping test. Range of value: 56~1024 bytes.
<b>Info</b>	The information returned during the Ping test, helping you to learn the network

connection status between the gateway and the destination address.

After configuration, click **Start** to execute the Ping test; click **End** to terminate it immediately.

### 3.11.13 TRACERT Test

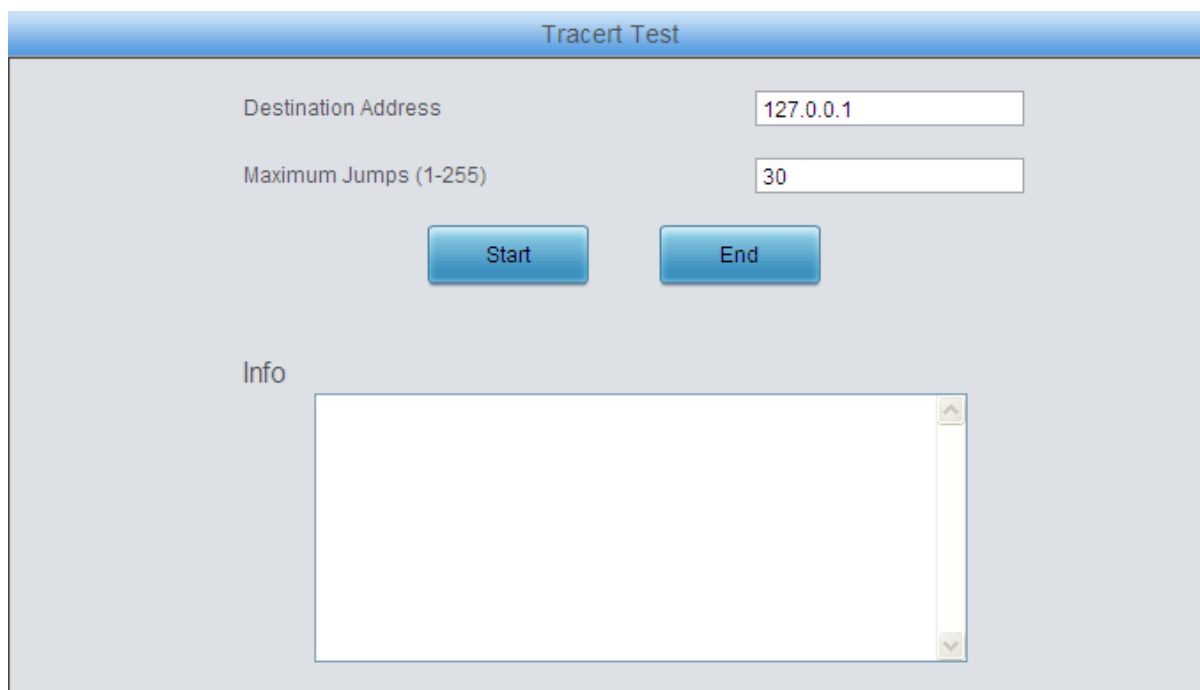


Figure 3-53 Tracert Test Interface

See Figure 3-53 for the Tracert test interface. A Tracert test can be initiated from the gateway on a designated IP address to check the routing status between them. The table below explains the configuration items shown in the above figure.

Item	Description
<b>Source IP Address</b>	Source IP address where the Tracert test is initiated.
<b>Destination Address</b>	Destination IP address on which the Tracert test is executed.
<b>Maximum Jumps</b>	Maximum number of jumps between the gateway and the destination address which are returned by the Tracert test. Range of value: 1~255.
<b>Info</b>	The information returned during the Tracert test, helping you to learn the detailed information about the jumps between the gateway and the destination address.

After configuration, click **Start** to execute the Tracert test; click **End** to terminate it immediately.

### 3.11.14 Wireless Test

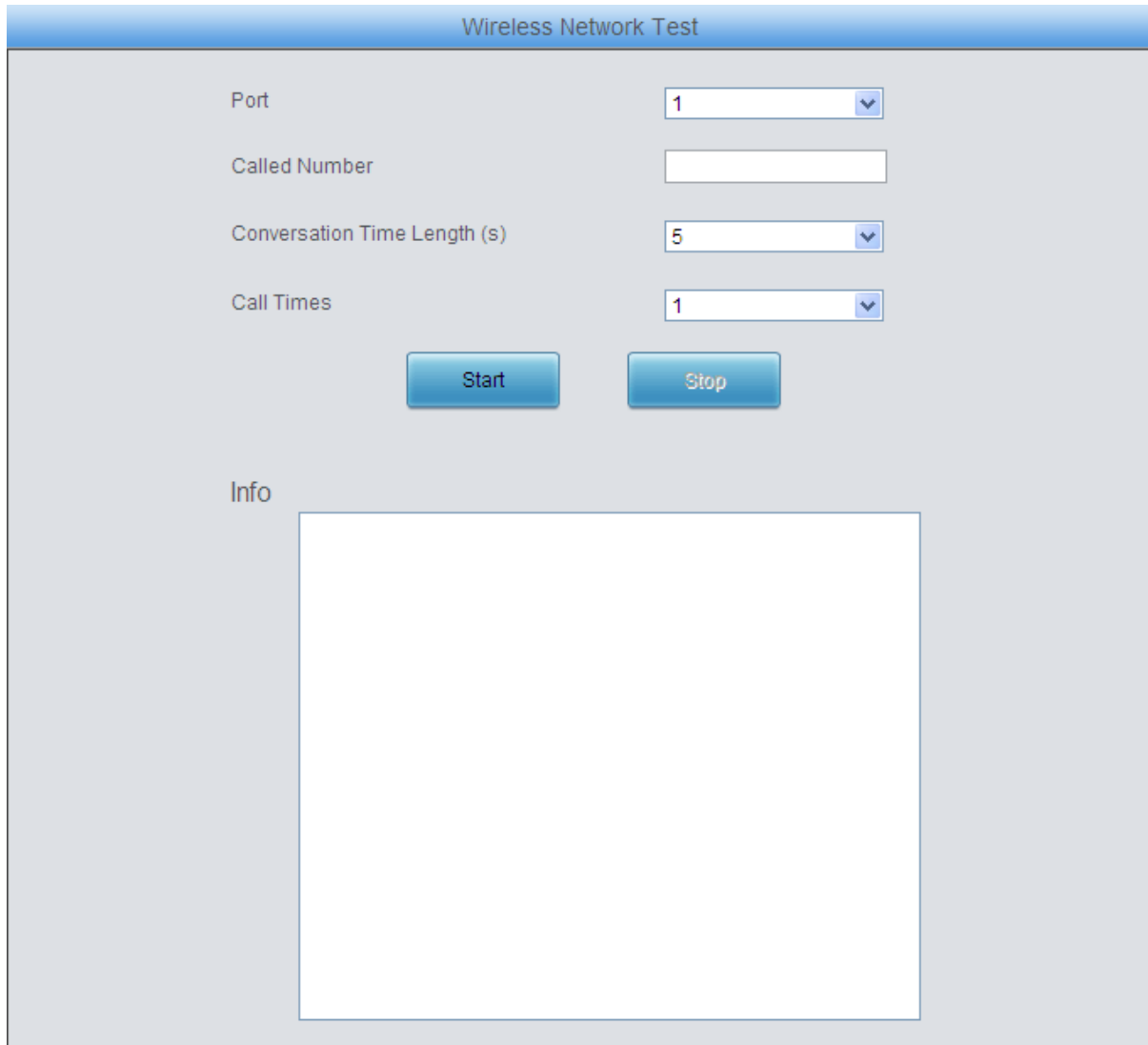
The image shows a software interface titled "Wireless Network Test". It features four configuration fields: "Port" with a dropdown menu showing "1", "Called Number" with an empty text box, "Conversation Time Length (s)" with a dropdown menu showing "5", and "Call Times" with a dropdown menu showing "1". Below these fields are two blue buttons labeled "Start" and "Stop". At the bottom, there is an "Info" label next to a large, empty rectangular box for displaying test results.

Figure 3-54 Wireless Network Test Interface

See Figure 3-54 for the Wireless Network Test interface. This test is to check whether the SIM card inserted in the gateway port can make normal calls. The table below gives the explanation to the configuration items shown in the above figure.

Item	Description
<b>Port</b>	The port used for the test
<b>Called Number</b>	The called party number which will be dialed for the test
<b>Conversion Time Length</b>	The time length of the conversion
<b>Call Times</b>	The times of the testing call

After configuration, click **Start** to execute the test; click **Stop** to terminate it immediately.



### 3.11.15 Module Test































Port State					
Port	Type	State	Cell Phone No.	Connection	Signal
1	CDMA	 Sim Detected	660641	Connect	
2	CDMA	 Sim Detected	414748	Connect	
3	CDMA	 Sim Detected	884515	Connect	
4	CDMA	 Sim Detected	475902	Connect	
5	CDMA	 Sim Detected	15314682732	Connect	
6	CDMA	 Sim Detected	13306518401	Connect	
7	CDMA	 Sim Detected	864201	Connect	
8	CDMA	 Sim Detected	664705	Connect	
9	CDMA	 Sim Detected	15355074652	Connect	
10	CDMA	 Sim Detected	874252	Connect	
11	CDMA	 Sim Detected	662429	Connect	
12	CDMA	 Sim Detected	15372427495	Connect	
13	CDMA	 Sim Detected	18143477961	Connect	
14	CDMA	 Sim Detected	111	Connect	
15	CDMA	 Sim Detected	18958154838	Connect	
16	CDMA	 Sim Detected	894905	Connect	

Figure 3-55 Module Test Interface

See Figure 3-55 for the Wireless Network Test interface. This test is for our manufacturers to check whether a module can detect the SIM card. Two states may appear: **Sim Detected** and **Unusable**.

### 3.11.16 Access Control

On the Access Control List interface, you can add a piece of command to ACL to restrict the network flow. Thus only the particular devices are allowed to visit the gateway and only the data packages on the designated ports can be forwarded. Click **Add New** to add a new piece of command. See Figure 3-56.

Access Control Command

Index: 1

Command:

Save

Close

Figure 3-56 Add Access Control Command Interface

Fill in a piece of command to the item Command and click **Save** to save the settings to the gateway. Click **Close** to cancel your settings. Click **Apply** to make the new command valid.

Click **Modify** on the Access Control List interface to modify a command. The configuration items on the Access Control Command Modification interface are the same as those on the **Add Access Control Command** interface. Note that the item **Index** cannot be modified.

To delete an Access Control Command, check the checkbox before the corresponding index on

the Access Control List interface , click the **Delete** button, and then click the **Apply** button to make the deleted command invalid. **Check All** means to select all available items on the current page; **Uncheck All** means to cancel all selections on the current page; **Inverse** means to uncheck the selected items and check the unselected. To clear all access control commands at a time, click the **Clear All** button on the Access Control List interface.

**Note:**

- 1, Currently, only the command iptables is supported by the gateway.
- 2, If you add or modify or delete commands manually, don't forget to click the **Apply** button to make your settings valid. However, if the gateway restarts or the configuration is leading-in, you need not click the **Apply** button and the commands will get valid automatically.

### 3.11.17 Device Lock

This feature is unopened. If you need use it, please contact our technicians to apply for a special link to access the gateway again.

# Appendix A Technical Specifications

## Dimensions

4004/4008 series: 260×30×153mm<sup>3</sup>

4016/4032 series: 440×44×200mm<sup>3</sup>

## Weight

4004/4008 series Net: 1.2 kg

4016 series Net: 2.4 kg

4032 series Net: 3.1 kg

## Environment

Operating temperature: 0℃—45℃

Storage temperature: -20℃—85℃

Humidity: 8%— 90% non-condensing

Storage humidity: 8%— 90% non-condensing

## LAN

Amount: 2 (10/100 BASE-TX (RJ-45))

Self-adaptive bandwidth supported

Auto MDI/MDIX supported

## Console Port

Amount: 1 (RS-232)

Baud rate: 115200bps

Connector: RJ45 to DB-9 Connector (4004/4008 series), Mini-USB connecting line (4016/4032 series)

Data bits: 8 bits

Stop bit: 1 bit

Parity unsupported

Flow control unsupported

Note: Follow the above settings to configure the serial port; or it may work abnormally.

## Power Requirements

Input power: 12V DC ±10%

Input Current: ≥3A DC

## Signaling & Protocol

SIP signaling

Supported protocol: SIP V1.0/2.0, RFC3261

## Network Protocol

IP v4, UDP/TCP, PPPoE, DHCP,

FTP/TFTP ARP, RARP, NTP,

HTTP, Telnet

## Audio Encoding & Decoding

G.711A 64 kbps

G.711U 64 kbps

G.729A/B 8 kbps

G.723 5.3/6.3 kbps

G.722 64 kbps

AMR 4.75 kbps

iLBC 13.3/15.2 kbps

## Sampling Rate

8kHz

## Wireless Feature

SMS CODEC: ASCII/UCS2

## Others

The LTE series gateways support the VoLTE network so that they provide quick call establishment and stay unaffected by the Base Station capacity.

## Appendix B Troubleshooting

### Q1. What to do if I forget the IP address of the wireless gateway?

There are two ways to get the IP address:

- 1) Long press the Reset button on the gateway to restore to factory settings. The default IP address is 192.168.1.101
- 2) Make a call to any wireless port and press the function key to query the IP address. See [3.5.5 Function Key](#) for more details.

### Q2. In what cases can I conclude that the wireless gateway is abnormal and turn to Synway's technicians for help?

- a) During runtime, the run indicator does not flash or the alarm indicator lights up or flashes, and such error still exists even after you restart the device or restore it to factory settings.
- b) Voice problems occur during call conversation, such as that one party or both parties cannot hear the voice or the voice quality is unacceptable.
- c) The port of the gateway is well connected with the antenna and has a SIM card properly inserted, but the port indicator never lights up after the gateway startup or the color it lights up does not comply with the actual port state or port type.

Other problems such as inaccessible calls, failed registrations, incorrect numbers are probably caused by configuration errors. We suggest you refer to [Chapter 3 WEB Configuration](#) for further examination. If you still cannot figure out or solve your problems, please feel free to contact our technicians.

### Q3. What to do if I cannot enter the WEB interface of the gateway after login?

This problem may happen on some browsers. To settle it, follow the instructions here to configure your browser. Enter 'Tools > Internet Options > Security Tab', and add the current IP address of the gateway into 'Trusted Sites'. If you changes the IP address of the gateway, add your new IP address into the above settings too.

### Q4. Is there any cell-phone APP can make calls to the gateway?

Yes. Linphone is a soft SIP phone that is supported by multiple platforms, such as Linux, Windows, iOS, Android, etc. It must be registered to the SIP registrar server before dialing to other SIP devices or PSTN telephones,

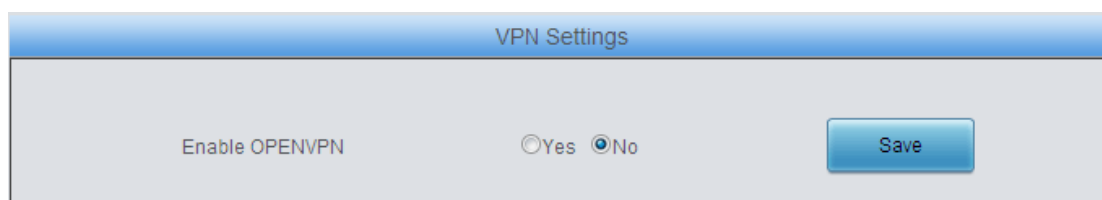
### Q5. Which RTP codecs are supported by the gateway?

At present, the supported RTP codecs are: G.711A, G.711u, G.729, G.723, G.722, AMR and iLBC.

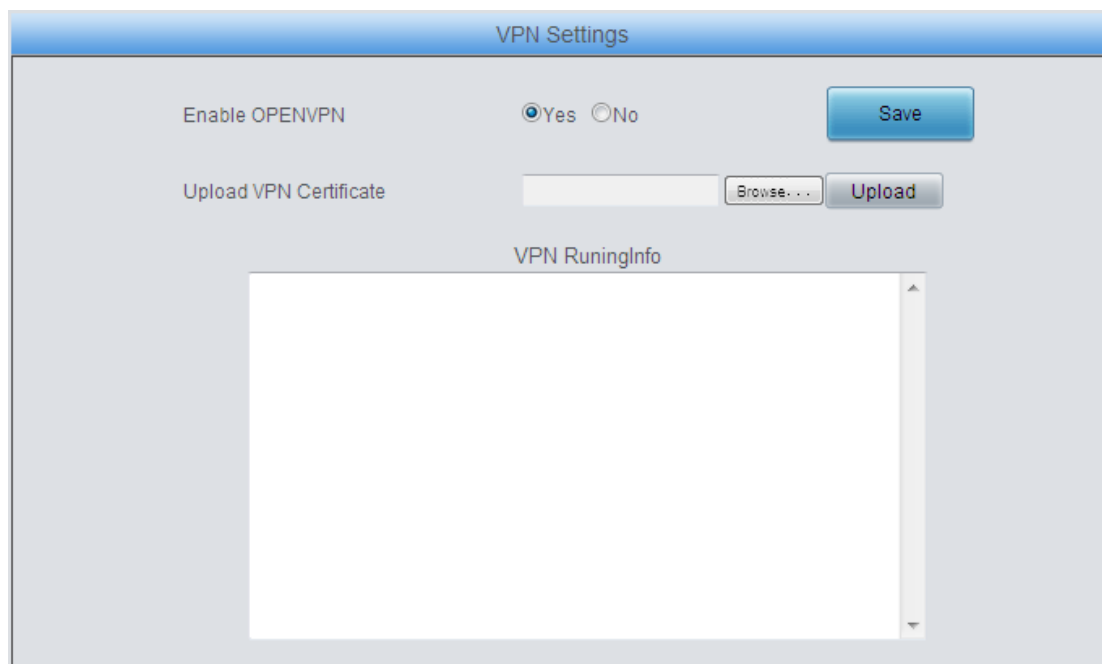
## Appendix C About VPN

### Part 1: Steps to Enable VPN Feature

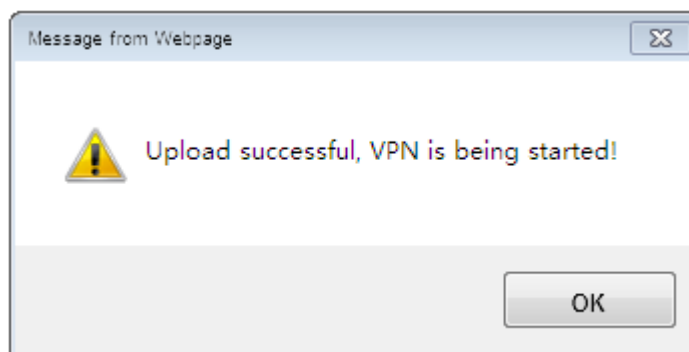
Find the VPN Settings interface under Advanced Settings on the web. This featured is disabled by default.



**Step 1:** Select Yes to enable this feature, click the 'Save' button and the following interface will appear.



**Step 2:** Select a certificate from the client, that is, a configuration file with the suffix of .conf, and then click the 'Upload' button. The following dialog will appear.



**Step 3:** Now you will get a virtual IP address which is allocated automatically by the VPN server.  
Note that each upload will lead to a new allocation of the IP address; however, restarting the gateway will not change the virtual IP address.

Then you may use the PING test under System Tool on the web to test if the client connects successfully with the server via IP, by which to check whether the VPN feature is successfully enabled or not.

## Part 2: Steps to Make VPN Certificate

**Step 1:** Get the file of client.ovpn from the VPN server (under the 'sample-config' directory of the installation package) and rename it to "client.conf".

**Step 2:** Examine or add the following content into the file.

The file should contain the following content, in which the black part is fixed while the red part shall change according to the note.

client

dev tap (Note: Fill in tap or tun according to the VPN server's requirement. Currently, only tap is supported.)

proto tcp (Note: Connect via TCP which should be consistent with that of the server.)

;cipher AES-128-CBC (Note: Select an encryption algorithm which should be consistent with that of the client. It is not necessary to add if there is no algorithm at the client.)

remote 192.168.143.235 1194 udp (Note: Fill in the IP address and the port number of the VPN server, and the protocol can be left empty.)

;remote-random (Note: If there are multiple servers configured, let the client connect at random.)

resolv-retry infinite (Note: Analyze the server's domain name)

nobind (Note: Not to bind any port to the client)

persist-tun

persist-key

mute-replay-warnings (Note: Set as a flag to warn about replayed data packages.)

ns-cert-type server

comp-lzo (Note: Use the lzo compression which is consistent with the server.)

verb 3

;tls-client

;tls-auth ta.key 1 (Note: It is used to enable the feature of TLS encryption, and should be consistent with that of the server.)

<ca>

-----BEGIN CERTIFICATE-----

Note: Fill in the key copied from the file of ca.crt.

-----END CERTIFICATE-----

</ca>

<cert>

-----BEGIN CERTIFICATE-----

Note: Fill in the key copied from the file of client.crt, that is, the content inbetween “-----BEGIN CERTIFICATE-----” and “-----ENDCERTIFICATE-----”

-----END CERTIFICATE-----

</cert>

<key>

-----BEGIN RSA PRIVATE KEY-----

Note: Fill in the key copied from the file of client.key

-----END RSA PRIVATE KEY-----

</key>

Note: The following key is not necessary to add if it is never encrypted at the server.

<tls-auth>

Note: Fill in the key copied from the file of ta.key

</tls-auth>

Make sure the three key files ca.crt, client.crt and client.key are of the newest versions.

**Step 3:** Save the file after your examination or supplement and upload it to the device. Note that the suffix of the file must be .conf.

### Part 3: Attentions

- a) After the VPN featured is opened at the server, use your PCs to connect as a test. If two PCs can PING through each other, it means the server works normally.

- b)** Make sure the server is OK and the configuration file is ready before opening the VPN feature.  
The system time of the wireless gateway must be consistent with that of the server, or the connection may sometimes fails.
- c)** After enabling the VPN feature successfully, you can use the virtual IP of the gateway to make calls in both directions IP-->tel and tel-->IP.



## Appendix D Technical/sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you.

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