

User Manual

Four Channel's GSM VoIP Gateway

Model: GoIP_4



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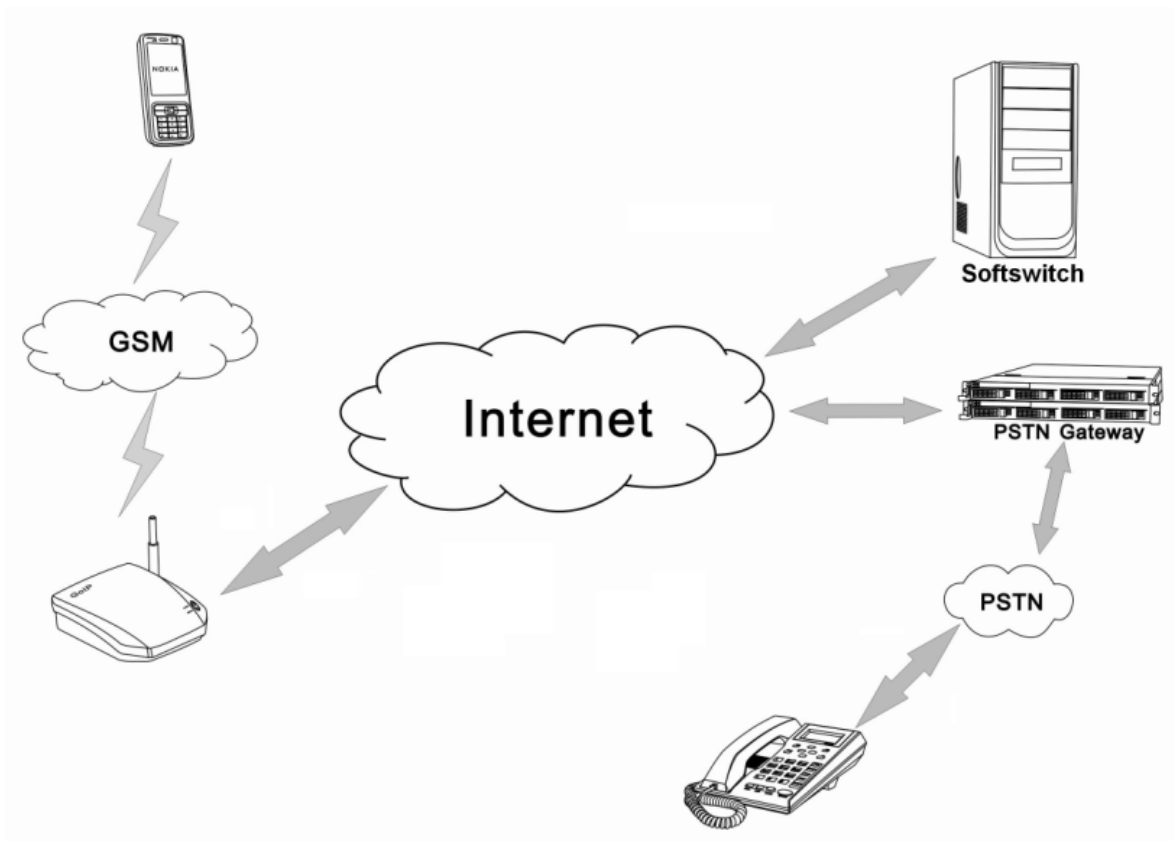
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1 Product Introduction

1.1 General Information

A VoIP GSM Gateway enables direct routing between IP and GSM network without the use of a FXO port or the PSTN network. With this device, the usage of VoIP is greatly enhanced with significant savings on long distance and roaming charges.



1.2 Protocol

- TCP/IP V4 (IP V6 auto adapt)
- ITU-T H.323 V4 Standard
- H.2250 V4 Standard
- H.245 V7 Standard
- H.235 Standard (MD5, HMAC-SHA1)
- ITU-T G.711 alaw/ulaw, G.729A, G.729AB, and G.723.1 Voice Codec
- RFC1889 Real Time Data Transmission
- Proprietary Firewall-Pass-Through Technology
- SIP V2.0 Standard
- Simple Traversal of UDP over NAT (STUN)

- Web-base Management
- PPP over Ethernet (PPPoE)
- PPP Authentication Protocol (PAP)
- Internet Control Message Protocol (ICMP)
- TFTP Client
- Hyper Text Transfer Protocol (HTTP)
- Dynamic Host Configuration Protocol (DHCP)
- Domain Name System (DNS)
- User account authentication using MD5
- Out-band DTMF Relay: RFC 2833 and SIP Info

1.3 Hardware Specification

- ARM9E Processor
- DSP for voice codec and voice processing
- Two 10/100 BaseT Ethernet ports with full compliant with IEEE 802.3
- LEDs for Ethernet port status
- Four GSM Channels' Connection

1.4 Software Specification

- LINUX OS
- Built-in HTTP Web Server
- PPPoE Dial-up
- NAT Broadband Router Functions
- DHCP Client
- DHCP Server
- Firmware On-line upgrade
- PSTN Caller ID transmit
- Multiple Language Support
- Supported call divert
- Supported PSTN auto call out to PSTN
- Supported Multi_devices Cooperate Mode(Group Mode)
- Supported SMS call out

1.5 List of the Package

- a) One GoIP_4 Gateway main unit
- b) One DC12V/2000mA power adaptor
- c) One Ethernet cable (3M)

1.6 Appearance



1) LAN

Connect this port to an Ethernet Switch/Router, the Ethernet of a DSL modem, or other network access equipment.

2) PC

Connect a computer or other network device to this port.

3) POWER (DC12V/2000mA)

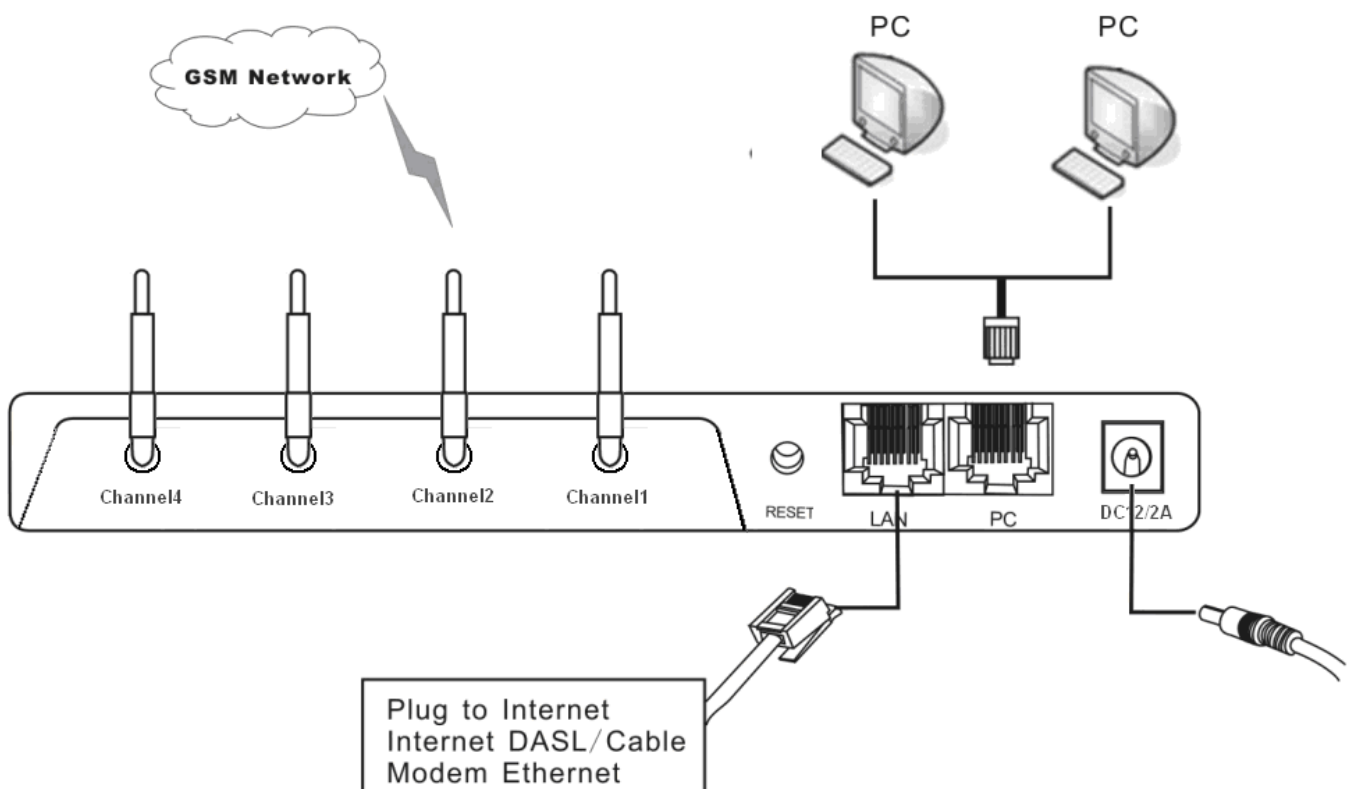
Connect the 12V/2000mA Adapter provided to this power jack.

4) Reset

Press this button to reset the GoIP_4 Gateway to factory defaults.

2 Installation

2.1 Installation Steps



Please follow the connection diagram above to install the GoIP_4 Gateway.

- a) Insert a GSM SIM card in the SIM card compartment located at the bottom of the GoIP_4 Gateway's.
- b) Connect an Ethernet cable the LAN port of the GoIP_4 Gateway and the other end to your existing network equipment.

- c) Connect an Ethernet cable to the PC Port of the GoIP_4 Gateway and the other end to a PC or other network device (Optional).
- d) Connect the power adapter provided to the power jack of the GoIP_4 Gateway.

2.3 LED Indicators

The following table defines the status of the LEDS located on the top case and on the RJ-45 connectors.

| LED | DESCRIPTION |
|-----------|--|
| POWER | When GoIP_4 Working, this LED will keep light; |
| RUN | <ol style="list-style-type: none"> 1. When the GoIP_4 is booting, this LED will flash 100ms ON and 100ms OFF. 2. When the GoIP_4 is login your softswitch, this LED will flash 1s ON and 1s OFF. |
| LAN | When LAN port connecting to network, this LED will light and flash when has data through this port; |
| PC | When has devices use PC port, this LED will light and flash; |
| Channel 1 | When the GoIP_4's GSM channel1 login to ISP's system, this LED will flash 1s ON and 1s OFF; |
| Channel 2 | When the GoIP_4's GSM channel2 login to ISP's system, this LED will flash 1s ON and 1s OFF; |
| Channel 3 | When the GoIP_4's GSM channel3 login to ISP's system, this LED will flash 1s ON and 1s OFF; |
| Channel 4 | When the GoIP_4's GSM channel4 login to ISP's system, this LED will flash 1s ON and 1s OFF; |

2.4 SMS Commands

GoIP_4 supported some maintenance commands come from SMS.

| FUNCTION | SMS CONTENT | REMARK |
|----------------------|-----------------|---|
| Obtain LAN Port Info | INFO | Not distinguish majuscule and lowercase |
| Reset device | RESET Password | Not distinguish majuscule and lowercase |
| Reboot device | REBOOT Password | Not distinguish majuscule and lowercase |

Note: In command Reset and Reboot, the Password is the GoIP_4 device's admin password.

The command keywords can use majuscule and lowercase, but the password must distinguish majuscule or lowercase.

3 Configuration Guide

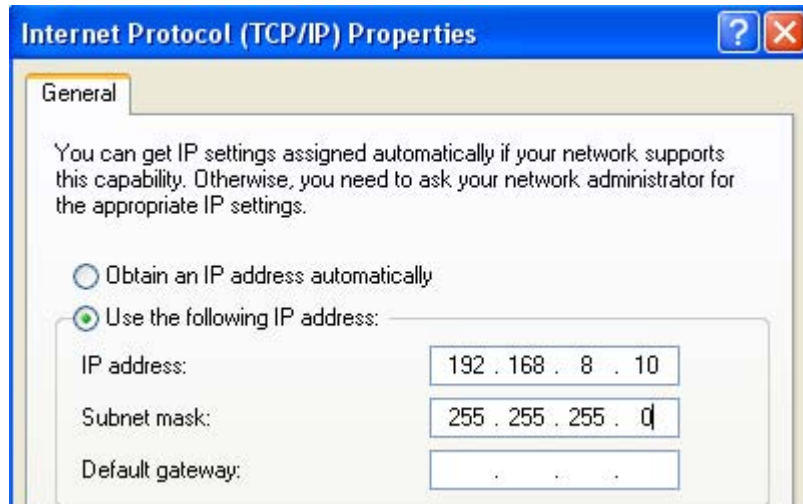
To configure the GoIP_4 Gateway, you must login to its Web server via the LAN or PC port. The LAN port is factory preset to obtain an IP from the local DHCP host and the PC port is set to the fixed IP 192.168.8.1.

If a local DHCP host is available, the LAN will obtain an IP address automatically. To listen to the IP address assigned, just dial a call via the GoIP_4 Gateway's SIM card phone number. When the call is connected, you will hear a dial tone. Just dial "*01#" for English voice prompt on the LAN IP and "*00#" for Chinese voice prompt on the LAN IP. The LAN IP Address can also be obtained by sending a SMS message to the GSM phone number. The GoIP_4 will then reply with a SMS message containing the LAN IP address.

If you want obtained LAN port IP by sending a SMS message, please send " INFO "or" info".

If a local DHCP host is not available, you can then access the GoIP_4 Gateway via the PC port. You will need to change your computer's LAN configuration via the Network Connections under the Control Panel.

Windows: Control Panel--→Network Connections--→Local
Connectionism's Property--→TCP/IP Protocol's Property



Set an unused IP address that is in the same segment as the PC port address.

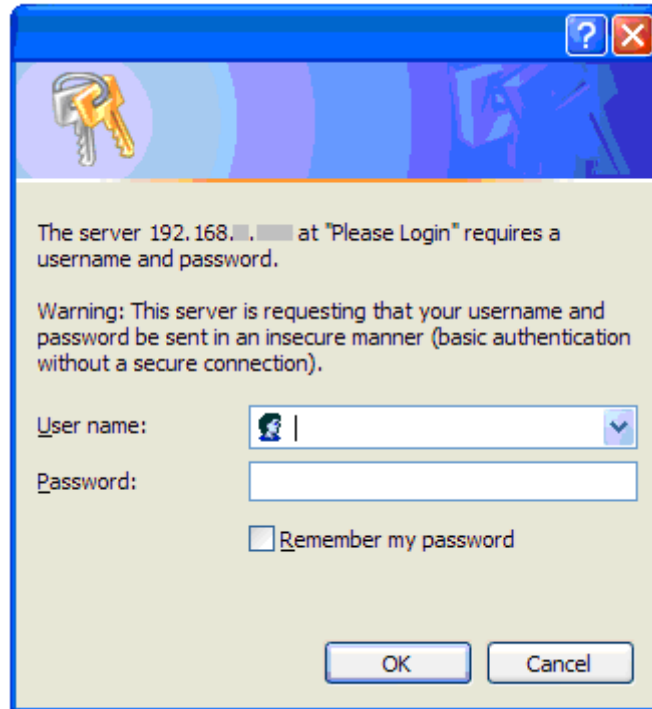
Once either the IP address of the LAN or PC port is known, you are now ready to access the Web server of GoIP_4 Gateway.

3.1 Web Configuration Menu

If your computer is connected to the GoIP_4 Gateway via the LAN port network segment, you need to type the LAN IP address of the GoIP_4 Gateway in your Web Browser to access the Web server of the GoIP_4 Gateway. If not, you should type GoIP_4's PC port IP address (192.168.8.1) in the Web Browser.



If the connection is correct, the Web Browser will prompt you to enter the "User name" and "Password" as shown below.



Enter the User name and Password and the press OK to access the GoIP_4 Gateway Web Server. The default for both user name and password is "admin".

3.2 Status

The Status page shown below is the default / home page of the GoIP_4 Web server.



| Status | | Network Information | | GSM Module Information | |
|-------------------------------|---------------|----------------------|-------------------|------------------------|---------------|
| Serial Number | GOIP409100019 | LAN Port | 192.168.2.208 | GSM1 Model | SIMCOM_SIM300 |
| Firmware Version | GHS-4.01-1 | LAN MAC | 00:11:BE:02:F6:EE | GSM1 SIM | INSERTED |
| Hardware Model | GoIPx4 | PC Port | 192.168.8.1 | GSM1 Signal | 26 |
| Line Register 1 Status | LOGOUT | PPPoE | Disabled | GSM1 Status | LOGIN |
| Line Register 2 Status | LOGOUT | Default Route | 192.168.2.253 | GSM2 Model | SIMCOM_SIM300 |
| Line Register 3 Status | LOGOUT | DNS Server | 202.96.134.133 | GSM2 SIM | NOT INSERTED |
| Line Register 4 Status | LOGOUT | | | GSM2 Signal | 27 |
| | | | | GSM2 Status | LOGOUT |
| | | | | GSM3 Model | SIMCOM_SIM300 |
| | | | | GSM3 SIM | NOT INSERTED |
| | | | | GSM3 Signal | 19 |
| | | | | GSM3 Status | LOGOUT |
| | | | | GSM4 Model | SIMCOM_SIM300 |
| | | | | GSM4 SIM | NOT INSERTED |
| | | | | GSM4 Signal | 25 |
| | | | | GSM4 Status | LOGOUT |

3.2.1 Phone Information

A. Serial Number

Each Gateway has a unique serial number assigned by the factory such as GOIP409100019. This number is important for centralized configuration, technical support, and warranty. This number is printed on the bottom of the Gateway and is associated with your software license.

B. Firmware Version

Firmware version identifies the firmware version of the Gateway such as GHS-4.01-1.

C. Hardware Mode

This field shows terminal's hardware type.

D. Phone Status

This field shows the status of Line's connection status. If the connection is successful, this field displays LOGIN; otherwise, it displays LOGOUT.

3.2.2 Network Information

A. LAN Port Configuration

This field displays the status of the LAN port.

B. PC Port Configuration

This field displays the status of the LAN port.

C. PPPoE

If PPPoE is enabled, it displays its status.

D. Default Route

This field displays the IP address of the default routing Gateway.

E. DNS Server

This field displays the IP address of the Domain Name Server.

3.2.3 GSM Module Information

A. GSM Module

This field displays the GSM module type.

B. GSM Signal

This field displays the GSM signal status.

C. GSM Status

This field shows the status of GSM connection status. If the connection is successful, this field displays LOGIN; otherwise, it displays LOGOUT.

3.3 Configurations

Click on the "Configurations" tab on the left hand column to access the device configuration menu: Preference, Network, Call Settings, Call Divert, Save Changes, and Discard Changes.

| | | | | |
|---|--|---|---|---|
| Status Configurations Preferences Network Call Settings Call Divert Save Changes Discard Changes Tools | Preference | | | |
| | Language(语言) | <input type="text" value="简体中文"/> | Network Tones | <input type="text" value="China"/> |
| | Time Zone | <input type="text" value="GMT+8"/> | GSM CallerID Anonymous | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| | Time Server | <input type="text" value="pool.ntp.org"/> | GSM Band | <input type="text" value="900/1800"/> |
| | DTMF Min Detect Time Gap | <input type="text" value="80"/> | SMS Sender | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| | Auto-provision | <input type="radio"/> Enable <input checked="" type="radio"/> Disable | | <input checked="" type="checkbox"/> Auto Reboot |
| | | Remote Control>> | Reboot Time | <input type="text" value="04:00"/> |
| | Network Configuration | | | |
| | LAN Port | <input type="text" value="DHCP"/> | PC Port | <input type="text" value="Static IP"/> |
| | 802.1q VLAN | <input type="radio"/> Enable <input checked="" type="radio"/> Disable | IP Address | <input type="text" value="192.168.8.1"/> |
| | Advanced>> | Subnet Mask | <input type="text" value="255.255.255.0"/> | |
| | | DHCP Server | <input checked="" type="radio"/> Enable <input type="radio"/> Disable | |
| | | Starting Address | <input type="text" value="192.168.8.100"/> | |
| | | Ending Address | <input type="text" value="192.168.8.120"/> | |
| | | Static DNS(optional) | <input type="text"/> | |
| | | | Advanced>> | |
| Call Settings | | | | |
| Endpoint Type | <input type="text" value="H.323 Phone"/> | | Advanced Settings>> | |
| Endpoint Mode | <input type="text" value="Gatekeeper Mode"/> | | Media Settings>> | |
| Config Mode | <input type="text" value="Single Config"/> | | | |

Click on "Preference" in the left menu of the configuration web, and the screen will be displayed as below:

| | | | |
|--------------------------|---|------------------------|---|
| Preference | | | |
| Language(语言) | <input type="text" value="简体中文"/> | Network Tones | <input type="text" value="China"/> |
| Time Zone | <input type="text" value="GMT+8"/> | GSM CallerID Anonymous | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| Time Server | <input type="text" value="pool.ntp.org"/> | GSM Band | <input type="text" value="900/1800"/> |
| DTMF Min Detect Time Gap | <input type="text" value="80"/> | SMS Sender | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| Auto-provision | <input type="radio"/> Enable <input checked="" type="radio"/> Disable | | <input checked="" type="checkbox"/> Auto Reboot |
| | Remote Control>> | Reboot Time | <input type="text" value="04:00"/> |

3.3.1 Language

Currently GoIP_4 supports English, Simplified Chinese and Traditional Chinese. Select the language desired and the Web page will be shown in the language selected

accordingly.

| Preference | |
|--------------|--|
| Language(语言) | <input type="text" value="简体中文"/> English 简体中文 |

The language can also be selected at the top of the web page. Once selected, the webpage language is refreshed immediately. However, the language selection is not saved until the Save Changes icon is clicked.



3.3.2 Time Zone and Time Server

The GoIP_4 Gateway supports Network Time Protocol (NTP) to obtain the date and time information from an NTP server (Time Server). The time zone is specified as in GMT ± offset. For example, the Pacific Standard Time is GMT-8, and the Pacific Daylight Time is GMT-7.

| | |
|-------------|---|
| Time Zone | <input type="text" value="GMT+8"/> |
| Time Server | <input type="text" value="pool.ntp.org"/> |

Note: The GoIP_4 Gateway supports CDR and Billing Information, it is important to set up these two parameters properly.

3.3.3 DTMF Min Detect Time Gap

| | |
|--------------------------|---------------------------------|
| DTMF Min Detect Time Gap | <input type="text" value="50"/> |
|--------------------------|---------------------------------|

This parameter use to limit two same DTMF digit's minimum time gap, the range is 60ms to 120ms, default is 80ms.

If you encounter double digit problem, gain it to more, if you encounter lose digit, then gain it to less.

3.3.4 Auto-Provision

The GoIP_4 Gateway supports Auto Provisioning which enables configuration parameters to be set automatically without human intervention. The Auto Provisioning supports both HTTP and TFTP protocols. For higher security, encrypted configuration file is also supported. This feature requires external Auto Provisioning Server. Please contact your service provider for further information on this.

| | |
|---------------------------|---|
| Auto-provision | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Provision Server | <input type="text"/> |
| Provision Interval | <input type="text"/> |

3.3.5 Network Tone

Network Tones are a set of tones used for VoIP calls. Select one of the countries defined or customized to define your own Network Tones.

| | |
|----------------------|--|
| Network Tones | <div style="border: 1px solid black; padding: 2px;"> <div style="border-bottom: 1px solid black; padding: 2px;">China</div> <div style="padding: 2px;">Australia</div> <div style="padding: 2px;">China</div> <div style="padding: 2px; background-color: #e0e0e0;">Hong Kong</div> <div style="padding: 2px;">New Zealand</div> <div style="padding: 2px;">United Kingdom</div> <div style="padding: 2px;">United States</div> <div style="padding: 2px;">Customized</div> </div> |
|----------------------|--|

You can configure the Network Tones as Customized option:

| | |
|------------------------|---|
| Network Tones | <input type="text" value="Customized"/> |
| Dial Tone | <input type="text"/> |
| Ring Back Tone | <input type="text"/> |
| Busy Tone | <input type="text"/> |
| Indication Tone | <input type="text"/> |

Each tone listed above is defined in the following format:

`nc, rpt, c1on, c1off, c2on, c2off, c3on, c3off, f1, f2, f3, f4, p1, p2, p3, p4`

Where:

`nc` is the number of cadences

`rpt` is the repeat counter(0 - infinite, 1-n - repeat 1-n times)

`c1on` is the cadence one on (in milliseconds)

`c1off` is the cadence one off (in milliseconds)

`c2on` is the cadence two on (in milliseconds)

`c2off` is the cadence two off (in milliseconds)

c3on is the cadence three on (in milliseconds)
c3off is the cadence three off (in milliseconds)
f1 is the tone #1 frequency (300Hz-3000Hz)
f2 is the tone #2, frequency (300Hz-3000Hz)
f3 is the tone #3 frequency (300Hz-3000Hz)
f4 is the tone #4 (300Hz-3000Hz)
p1 is the attenuation index for f1, 0-31(0=3dB, -1dB increments)
p2 is the attenuation index for f2, 0-31(0=3dB, -1dB increments)
p3 is the attenuation index for f3, 0-31(0=3dB, -1dB increments)
p4 is the attenuation index for f4, 0-31(0=3dB, -1dB increments)

For example, the tone definition for a tone of 450Hz with a cadence of 700 ms on and 1000 ms off is 1,0,700,1000,0,0,0,0,450,0,0,0,20,0,0,0

3.3.6 GSM Caller ID Anonymous

GSM CallerID
 Anonymous Enable Disable

Some GSM ISP allows the caller disable it phone number, it must GSM ISP supported;

3.3.7 GSM Band

GSM Band

GoIP_4 Supported quad GSM bands;

Note: About GSM bands supported, it base as which model GSM module we was used, some old GoIP gateway just supported two bands, so it will different at differ batch's GoIP devices;

3.3.8 GSM ISP

When GoIP searched more ISP signaling it can use, GoIP will show you a GSM ISP list, you can choice any one ISP and the GoIP will lock itself just register to your choice one;

3.3.9 SMS Sender

| | |
|------------------------|---|
| SMS Sender | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| SMS Server IP | <input type="text"/> |
| SMS Server Port | <input type="text"/> |
| SMS Client ID | <input type="text"/> |
| Password | <input type="text"/> |

3.3.10 Auto Reboot

| | |
|--------------------|---|
| | <input checked="" type="checkbox"/> Auto Reboot |
| Reboot Time | <input type="text" value="04:00"/> |

This option enable GoIP_4 auto reboot each day, GoIP_4 will auto reboot itself at Reboot Time. If meet a current called, the action will auto delay after the call finish.

3.4 Call Settings

Click on the "Call Settings" to configure the VoIP call settings. The first thing to set is the Endpoint Type: H.323 or SIP.

| Call Settings | |
|----------------------|--|
| Endpoint Type | <input type="text" value="H.323 Phone"/> <input type="text" value="H.323 Phone"/> <input type="text" value="SIP Phone"/> |
| | Advanced Settings>> Media Settings>> |

3.4.1 H.323 Phone

For H.323 protocol, 2 Endpoint Modes are supported: Direct Mode and Gatekeeper Mode.

| Call Settings | |
|----------------------|--|
| Endpoint Type | <input type="text" value="H.323 Phone"/> |
| Endpoint Mode | <input type="text" value="Direct Mode"/> <input type="text" value="Direct Mode"/> <input type="text" value="Gatekeeper Mode"/> |

3.4.1.1 Direct Mode

In Direct Mode, GoIP_4 running at H.323 P to P type.

| Call Settings | | |
|-----------------------|----------------------|---|
| Endpoint Type | H.323 Phone | Advanced Settings>> |
| Endpoint Mode | Direct Mode | Media Settings>> |
| Phone Number | <input type="text"/> | |
| Display Name | <input type="text"/> | |
| H.323 ID | <input type="text"/> | |
| Default Voice Gateway | <input type="text"/> | |

A. H.323 Phone Number

H.323 phone number: fill the login number (E164) here.

B. Display Name

Display name is the name to be displayed on the called VoIP party.

C. H.323 ID

If the system requires an H.323 ID as a method of Authentication, enter the H.323 ID provided.

D. Default Voice Gateway

This field assigns the IP address or the domain name of the gatekeeper or other VoIP gateway. The port number can be added with the colon ":" symbol. For example: 192.168.1.70:8080.

GoIP_4 will send out all VoIP calls to this address.

3.4.1.2 Gatekeeper Mode

| Call Settings | |
|--------------------|--|
| Endpoint Type | H.323 Phone |
| Endpoint Mode | Gatekeeper Mode |
| Config Mode | Single Config |
| Phone Number | <input type="text"/> |
| GateWay Prefix | <input type="text"/> |
| Display Name | <input type="text"/> |
| H.323 ID | <input type="text"/> |
| Gatekeeper Address | <input type="text"/> |
| | <input type="checkbox"/> Enable VOS/AVS Signaling Encryption |
| | <input type="checkbox"/> Enable Authentication |

The "Gatekeeper Mode" mode allows a user to setup the GoIP_4 Gateway by registering to the gatekeeper with one H.323 account.

A. H.323 Phone Number

H.323 phone number: fill the login number (E164) here.

B. Gateway Prefix

If login with a Prefix method fill the prefix number (do not fill the Phone number).

C. Display Name

Display name is the name to be displayed on the called VoIP party.

D. H.323 ID

If the system requires an H.323 ID as a method of Authentication, enter the H.323 ID provided.

E. Gatekeeper Address

This field assigns the IP address or the domain name of the gatekeeper. The port number can be added with the colon ":" symbol. For example: 192.168.1.70:8080.

F. Enable Authentication

| | |
|-------------------|---|
| | <input checked="" type="checkbox"/> Enable Authentication |
| Authenitcation ID | <input type="text"/> |
| Password | <input type="text"/> |

If H.235 Authentication is required, enable this field and fill in the values as provided.

| Call Settings | |
|---------------|--|
| Endpoint Type | H.323 Phone |
| Endpoint Mode | Gatekeeper Mode |
| Config Mode | <ul style="list-style-type: none"> Single Config <li style="background-color: #e0e0e0;">Single Config Config by Line Config by Group |

GoIP_4 has three types configure modes in Gatekeeper Mode;

Configure By Single: All four channels use same one H.323 account connect to gatekeeper;

Configure By Line: Each channel will use a single account connect to H.323 gatekeeper;

Configure By Group: Each VoIP channel will register to Gatekeeper base differ Group;

3.4.1.3 Advance Settings

Click "Advance Settings" to access additional H.323 parameters as shown below.

Advanced Settings<<

| | |
|--------------------------------|---|
| RAS Port | <input style="width: 100%;" type="text"/> |
| Q.931 Port | <input style="width: 100%;" type="text"/> |
| H.245 Port | <input style="width: 100%;" type="text"/> |
| Fast Start | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Register Mode | Register Multiple Nur ▼ |
| DTMF Signaling | Outband ▼ |
| Signaling QoS | None ▼ |
| Signaling NAT Traversal | None ▼ |

A) RAS Port

RAS Port is an unreliable channel which is used to convey the registration, admissions, bandwidth change, and status messages between two H.323 entities.

B) Q.931 Port (Call Signaling Port)

Call Signaling Port is a reliable channel which is used to convey the call setup and release messages between two H.323 endpoints.

C) H.245 Port (Media Control Ports)

Media control port is the port or port range used by the H.245 media control protocol.

D) Fast Start

Enable or disable the Fast Start in H.225.0. Most H.323 terminals or Gateways support the Fast Start feature.

E) Register Mode

| | |
|----------------------|--|
| Register Mode | Register Multiple Nur ▼ |
| | Register Multiple Numbe |
| | Register Multiple Times |

Register Multiple Numbers: The GoIP_4 Gateway sends registration request in one signaling packet to the gatekeeper. In the mode, one signaling packet includes two VoIP line's registration information.

Register Multiple Times: In this mode, the GoIP_4 Gateway will register like two terminals.

F) DTMF Signaling

1) DTMF TYPE

DTMF signals can be sent over to the called party once a call is established. GoIP_4 Gateway supports both Inband and Outband DTMF signal types.

DTMF Signaling

| | |
|---------|---|
| Outband | ▼ |
| Inband | |
| Outband | |

For **Inband** DTMF type, DTMF signals are generated locally at the calling phone and then send to the called party as part of the voice signals. This method is not reliable since the quality of the DTMF signals is subject to the Codec used and the quality of the network traffics.

For **Outband** DTMF type, DTMF signal commands are sent to the called party and the actual DTMF signals are actually generated by the called party. This method allows more reliable DTMF signaling. However, it requires the called party to support this feature in order for this to work properly. GoIP_4 Gateway supports RFC2833 Outband DTMF protocols.

2) DTMF Payload Type

DTMF Payload Type is by RFC2833 protocol to carry the tone definitions for various applications. The default DTMF Payload Type is 96. Please consult your VoIP service provider for the proper setting if required.

3.4.2 SIP Phone

Set the "Endpoint Type" to SIP Phone for connections to SIP Servers.

GoIP_4 has two types configure modes in SIP protocol;

Call Settings

| | |
|----------------------|----------------------|
| Endpoint Type | SIP Phone ▼ |
| Config Mode | Single Server Mode ▼ |
| | Single Server Mode |
| | Config by Line |

Configure By Single: All four channels use same one SIP account connect to SIP server;

Configure By Lines: Each channel will use a private SIP account connect to SIP server;

GoIP_4 Gateway's SIP configure page as follow:

| Call Settings | |
|---------------------------|---|
| Endpoint Type | SIP Phone <input type="button" value="v"/> |
| Single Server Mode | |
| Phone Number | <input type="text"/> |
| Display Name | <input type="text"/> |
| SIP Proxy | <input type="text"/> |
| SIP Registrar | <input type="text"/> |
| Register Expiry(s) | <input type="text"/> |
| Outbound Proxy | <input type="text"/> |
| Home Domain | <input type="text"/> |
| Authentication ID | <input type="text"/> |
| Password | <input type="text"/> |
| Dial Plan | <input type="text"/> |
| Call Forward Type | Not Forward <input type="button" value="v"/> |
| Call Forward Number | <input type="text"/> |
| Backup Server | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |

- A) **Phone Number**
Enter a SIP phone number.
- B) **SIP Proxy**
Enter the SIP proxy IP address or domain name. If the registration port isn't 5060, then add ":" and the port number. An example is `sip.dtt.tw:8080`.
- C) **SIP Registrar Server**
If the Registrar Server is different from the SIP Proxy, enter its IP address or domain name in this field. If the registration port isn't 5060, then add ":" and the port number. An example is `sip.dtt.tw:8080`.
- D) **Home Domain**
SIP Networks sometimes use the Home Domain name as an identifier. Enter this field as required.
- E) **Authentication ID**
Enter the Authentication ID as provided.
- F) **Password**
Enter the authentication password as provided.
- G) **Display Name**
Enter this field for the name to be displayed on the called VoIP party.
- H) **Backup Server**

| | |
|-----------------------------------|---|
| Backup Server | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Backup SIP Proxy | <input type="text"/> |
| Backup SIP Registrar | <input type="text"/> |
| Backup Home Domain | <input type="text"/> |
| Fail-retry Interval(1-60s) | <input type="text"/> |

The GoIP_4 Gateway supports one Backup Server as an alternative to the main server. Once registration to the main server fails, the GoIP_4 Gateway will try to register to the Backup Server.

I) Outbound Proxy

OutBound proxies are devices that will forward SIP signaling (and frequently RTP media traffic too). OutBound proxies are used for a number of reasons, including, firewall traversal - both in parallel with a firewall and situated in the Internet as a Session Border Controller, and also for hiding customer IP addresses - calls are all routed through one point so that a public ITSP address can be used for accessing the customers, rather than the customer's own IP address.

If required, enter this field with the outbound proxy IP address or domain name as provided.

3.4.2.1 Advanced Settings

Click on "Advance Settings" tab on the top right corner of the Call Setting page to display all the parameters available, as shown below, for programming. These parameters allow more advanced control over the SIP signaling and media preference.

Advanced Settings<<

Signaling Port

SIP 183

NAT Keep-alive Enable Disable

Advanced Timing>>

DTMF Signaling

Signaling QoS

Signaling Encryption

Signaling NAT Traversal

Media Settings>>

- A) **Signaling Port (SIP Local port)**
The default SIP port is 5060. Change this as required.
- B) **NAT Keep-alive**

NAT Keep-alive Enable Disable

The NAT Keep-alive feature sends a null packet to the SIP Proxy periodically in order to keep the NAT open for incoming data traffics.

- C) **Advanced Timing Settings**

Advanced Timing<<

No Answer Expiry (32-180s)

NICT Expiry(2-180s)

ICT Expiry(5-360s)

Retransmit T1(200-2000ms)

Retransmit T2(2000-8000ms)

Some SIP proxies may have special timing requirements. Change these parameters as required.

- D) **Signaling QoS**

Signaling QoS

None

None

IP TOS

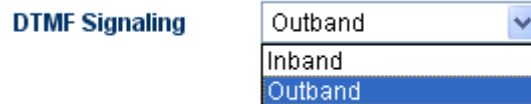
DiffServ

Signaling QoS improves the performance of SIP signaling. If local network device supports QoS, select this field accordingly. Please consult your network administrator for further information.

E) DTMF Signaling

1) DTMF TYPE

DTMF signals can be sent over to the called party once a call is established. GoIP_4 Gateway supports both **Inband** and **Outband** DTMF signal types.



For **Inband** DTMF type, DTMF signals are generated locally at the calling phone and then send to the called party as part of the voice signals. This method is not reliable since the quality of the DTMF signals is subject to the Codec used and the quality of the network traffics.

For **Outband** DTMF type, DTMF signal commands are sent to the called party and the actual DTMF signals are actually generated by the called party. This method allows more reliable DTMF signaling. However, it requires the called party to support this feature in order for this to work properly. GoIP_4 Gateway supports both RFC2833 and SIP INFO **Outband** DTMF protocols.

2) DTMF Payload Type

DTMF Payload Type is by RFC2833 protocol to carry the tone definitions for various applications. The default DTMF Payload Type is 96. Please consult your VoIP service provider for the proper setting if required.

3.4.3 Media Setting

Click on "**Media Settings**" in the "**Call Setting**" menu to access the parameters available for media settings.

Media Settings<<

RTP Port (range) -

Packet Length (ms)

Jitter Buffer Mode ▼

Minimum Jitter

Maximum Jitter(soft limit)

Media QoS ▼

Enable RC4 Encryption

Symmetric RTP

Media NAT Traversal ▼

Audio Codec Preference>>

A) RTP Port Range

This parameter specifies the range of the RTP (Real Time Protocol) Ports used by the GoIP_4 Gateway. If your network limits the usable port range, this parameter may need to be modified. Please consult your network administrator for more information.

B) Packet Length

This parameter defines the voice packet length. The default setting is 20ms. The range is from 5ms to 40ms at an increment of 5 ms. Please note that some codes have a minimum packet length of more than 5 ms.

C) Jitter Buffer Mode

Jitter Buffer Mode ▼

Minimum Jitter

Maximum Jitter(soft limit)

Since data packets may arrive at different orders, the Jitter Buffer is used to hold the data packets received for re-arrangement according to the packet sequence number. Three Jitter Buffer Modes are supported: Adaptive, Sequential, and Fixed. The default is set to Adaptive mode with a minimum jitter of 60 ms and a maximum jitter of 220ms. Please consult your network administrator for more information on the network environment in order to determine the optimal settings.

D) Media QoS

Media QoS ▼

None

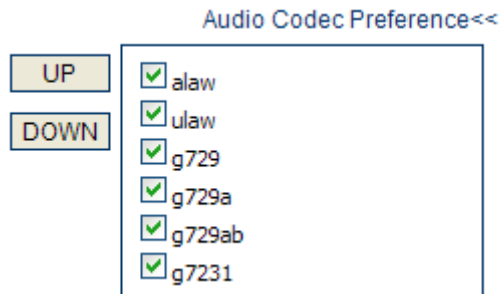
IP TOS

DiffServ

Similar to the Signaling QoS, the Media QoS is intended to improve the voice performance or quality if your local network supports QoS.

3.4.4 Codec Preference

Codec Preference allows a user to select the codes to be used and its priority to be selected for a voice call.



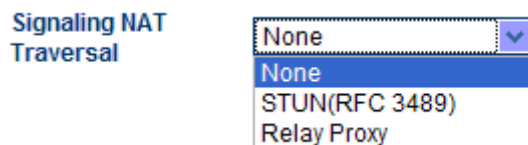
Click on the check box to enable a codec. Select a codec and then press the UP or DOWN button to move the position of the codec on the codec list with a priority in descending order.

Note: The voice code alaw and ulaw is G.711a and G.711u.

3.4.5 NAT Traversal

3.4.5.1 Signaling NAT Traversal

Signaling NAT traversal may be required if the GoIP_4 Gateway is put behind a NAT (or multiple NATs). Depending on your network environment and SIP Server capabilities, this feature may or may not be turn on.



A) None

Select **None** to turn off this feature.

B) STUN (RFC 3489)

STUN (Simple Traversal of UDP (User Datagram Protocol) through NATs (Network Address Translators)) is a network protocol allowing a client behind a NAT (or multiple NATs) to find out its public address, the type of NAT it is behind and the internet-side port associated by the NAT with a particular local port.

Select **STUN (RFC 3489)** to use a STUN server for Signaling NAT Traversal. Enter the IP Address or the domain name of the STUN server to be used.

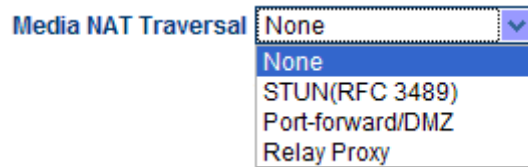
C) Relay Proxy

Relay proxy is a proprietary NAT traversal technology. Please consult your service

provider for more information.

3.4.5.2 Media NAT Traversal

Similar to Signaling NAT Traversal, this feature allows media packets (RTP) to be routed properly in various network environments.



A) None

Select **None** to disable this feature.

B) STUN (RFC 3489)

STUN (Simple Traversal of UDP (User Datagram Protocol) through NATs (Network Address Translators)) is a network protocol allowing a client behind a NAT (or multiple NATs) to find out its public address, the type of NAT it is behind and the internet-side port associated by the NAT with a particular local port.

Select **STUN(RFC 3489)** to use a STUN server for Signaling NAT Traversal. Enter the IP Address or the domain name of the STUN server to be used.

C) Port forwarding Support

Port forwarding (sometimes referred to as tunneling) is the act of forwarding a network port from one network node to another. This technique can allow an external user to reach a port on a private IP address (inside a LAN) from the outside via a NAT-enabled router.

In order for this feature to work, the local network Gateway must support this feature and be set up properly. Please consult your network administrator for help to enable this **Port forwarding** feature.

D) Relay Proxy

Relay proxy is a proprietary NAT traversal technology. Please consult your service provider for more information.

Currently, the following 3 kinds of packaging mechanism are supported:

- **Mode 1: The media uses UDP packets and (or) encrypt with multiple UDP port;**
- **Mode 2: The media uses UDP packets and (or) encrypt with single UDP port;**
- **Mode 3: The media uses TCP packets and (or) encrypt (UDP over TCP).**

| | |
|---------------------|---|
| Media NAT Traversal | Relay Proxy <input type="button" value="v"/> |
| Address | <input type="text"/> |
| Port | <input type="text"/> |
| User Name | <input type="text"/> |
| Password | <input type="text"/> |
| | <input type="checkbox"/> Encryption |
| Relay Mode | <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 |

3.5 Call Divert

The Call divert feature controls the routing of calls between VoIP and GSM.

| Call Divert | |
|---------------------------------|--|
| | <input checked="" type="radio"/> Line1 <input type="radio"/> Line2 <input type="radio"/> Line3 <input type="radio"/> Line4 |
| Forward to PSTN | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Forward Number (VoIP To PSTN) | <input type="text"/> |
| Forward Password (VoIP To PSTN) | <input type="text"/> |
| Dial Plan(VoIP to PSTN) | <input type="text"/> |
| Forward to VoIP | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Forward Number (PSTN To VoIP) | <input type="text"/> |
| Forward Password (PSTN To VoIP) | <input type="text"/> |
| Dial Plan(PSTN to VoIP) | <input type="text"/> |
| GSM Group Mode | Disable <input type="button" value="v"/> |
| SMS Mode | Disable <input type="button" value="v"/> |
| CID Forward | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |

3.5.1 Call Forward (From VoIP To PSTN)

Call Divert

Line1
 Line2
 Line3
 Line4

Forward to PSTN Enable Disable

Forward Number (VoIP To PSTN)

Forward Password (VoIP To PSTN)

Dial Plan(VoIP to PSTN)

Forward Number

Enter this field to forward all incoming VoIP calls to this number (PSTN or Mobile). Using “,” to add a 500ms delay to the dialing sequence. If this field is blank, calls will not be forwarded. The GoIP_4 Gateway answers an incoming VoIP call and generates a dial tone. The caller can then dial a number (PSTN or Mobile) desired. Please see below if the

Forward Password

This field sets the password protection for using the GSM connection. If a password is entered, the GoIP_4 Gateway will generate an indication tone and wait for the call to dial the

3.5.2 Auto Forward Call To PSTN

Forward Number (VoIP To PSTN)

When above option has parameter; GoIP_4 will auto forward all VoIP call to this phone number;

When GoIP_4 Call divert options “Forward Number (VoIP To PSTN)” is empty, GoIP_4 has a default call forward rule.

A: When the be Callee ID is GoIP_4's SIP account number, GoIP_4 will take the call and feed back a dial tone to VoIP caller; The means is VoIP caller must dial PSTN number when hear this dial tone.

B: When the Callee ID isn't GoIP_4's SIP account number, GoIP_4 will auto dial out this number thru GSM network.

C: At this moment, “Dial Plan(VoIP to PSTN)”still working.

3.5.3 Call Forward (From PSTN To VoIP)

| | |
|------------------------------------|---|
| Forward to VoIP | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Forward Number (PSTN To VoIP) | <input type="text"/> |
| Forward Password (PSTN To VoIP) | <input type="text"/> |
| Dial Plan(PSTN to VoIP) | <input type="text"/> |

Forward Number

Forward all incoming calls from the GSM connection to the VoIP number specified in this field. Forward Password is not required once this field is set. If this field is blank, the GoIP_4 answers an incoming GSM calls and then generates the VoIP dial tone. Please see below if the Forward Password is set. The caller can then dial a VoIP number manually. At the end, a pound (#) can be dialed to activate the dialing of the VoIP number immediately. If not, the VoIP number is dialed after a preset timeout.

Forward Password

This field sets the password protection for incoming GSM calls. If a password is entered, the GoIP_4 Gateway will generate an indication tone after answering an incoming call. The caller is then ready to dial the password. Once the password is correctly entered, the GoIP_4 Gateway generates a VoIP dial tone and waits for the caller to dial a VoIP number.

3.5.4 Auto Forward Call To VoIP

| | |
|----------------------------------|----------------------|
| Forward Number (PSTN To VoIP) | <input type="text"/> |
|----------------------------------|----------------------|

When GoIP_4's above option has parameter; GoIP_4 will forward all PSTN incoming call to this VoIP number;

When GoIP_4 Call divert options "Forward Number (PSTN To VoIP)" is empty, GoIP_4 will auto accept all PSTN incoming call and feed back a dialtone to de caller;

3.6 SMS Disposal

3.6.1 SMS Call Out

GoIP_4 Gateway supported SMS call. In this mode, when GoIP_4 Gateway received a SMS send from any one mobile phone, it will auto make a call to SIP server.

If you want use this function, select the [SMS Dial](#) option in configuration page.

| Call Divert | | | |
|---------------------------------|---|-------------------|---|
| Forward to PSTN | <input checked="" type="radio"/> Enable <input type="radio"/> Disable | SMS Mode | <input type="text" value="Dial"/> |
| Forward Number (VoIP To PSTN) | <input type="text"/> | SMS Dial | <input type="text" value="Mode 1"/> |
| Forward Password (VoIP To PSTN) | <input type="text"/> | SMS Dial Prefix | <input type="text"/> |
| Dial Plan(VoIP to PSTN) | <input type="text"/> | PSTN Forward Fail | <input type="text" value="Drop The Call"/> |
| Forward to VoIP | <input checked="" type="radio"/> Enable <input type="radio"/> Disable | CID Forward | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |
| Forward Number (PSTN To VoIP) | <input type="text"/> | | |
| Forward Password (PSTN To VoIP) | <input type="text"/> | | |
| Dial Plan(PSTN to VoIP) | <input type="text"/> | | |

GoIP_4 supported three types SMS Dial:

| | |
|----------|-------------------------------------|
| SMS Mode | <input type="text" value="Dial"/> |
| SMS Dial | <input type="text" value="Mode 1"/> |
| | Mode 1 |
| | Mode 2 |
| | Mode 3 |

A: Mode 1

GoIP_4 dial the call use SMS sender call ID

B: Mode 2

GoIP_4 dial the call via itself VoIP account and add the SMS sender phone number to Call Divert option's Forward Number (VoIP to PSTN) automatic.

C: Mode 3

GoIP_4 dial the call via itself VoIP account and add the SMS sender phone number to SIP invites be call number.

D: SMS Dial Prefix

When GoIP_4 dial a SMS call, it will automatic add this option's digit in be Called ID.

● **Mode 1 examples:**

A. GoIP_4 use SMS Dial Mode 1:

| | |
|-----------------|-------------------------------------|
| SMS Mode | <input type="text" value="Dial"/> |
| SMS Dial | <input type="text" value="Mode 1"/> |
| SMS Dial Prefix | <input type="text"/> |

One mobile phone's number is (86)13800000000, it sends a SMS "8675588228822" to

GoIP_4's GSM SIM card. When GoIP_4 device receive this SMS, it will auto to call number 8675588228822, and the caller is number 8613800000000.

The sent out signaling as follow:

```

Sending Message to 192.168.2.1:5060:
INVITE sip: 8675588228822@192.168.2.1:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.2.189:5060;rport;branch=z9hG4bK1686911003
From: <sip: 861380000000@192.168.2.1:5060>;user=phone;tag=626918067
To: <sip: 8675588228822@192.168.2.1>
Call-ID: 1835068843@192.168.2.189:5060
CSeq: 2 INVITE
Contact: <sip: 861380000000@192.168.2.189:5060>
Max-Forwards: 30
User-Agent: HyberTone
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REFER, REGISTER, MESSAGE, INFO, SUBSCRIBE
Content-Type: application/sdp
Content-Length: 226

```

B. GoIP_4 use SMS Dial Mode 1 and add a prefix as 999:

| | |
|-----------------|--------|
| SMS Settings | |
| SMS Mode | Dial |
| SMS Dial | Mode 1 |
| SMS Dial Prefix | 999 |

One mobile phone's number is (86)13800000000, it sends a SMS "8675588228822" to GoIP_4's GSM SIM card. When GoIP_4 device receive this SMS, it will auto to call number as 9998675588228822, and the caller is number 8613800000000.

The sent out signaling as follow:

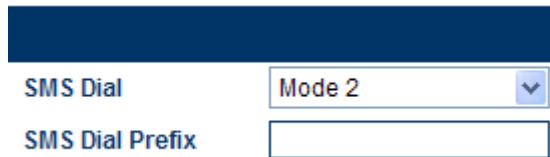
```

Sending Message to 192.168.2.1:5060:
INVITE sip: 9998675588228822@192.168.2.1:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.2.189:5060;rport;branch=z9hG4bK1686911003
From: <sip: 861380000000@192.168.2.1:5060>;user=phone;tag=626918067
To: <sip: 9998675588228822@192.168.2.1>
Call-ID: 1835068843@192.168.2.189:5060
CSeq: 2 INVITE
Contact: <sip: 861380000000@192.168.2.189:5060>
Max-Forwards: 30
User-Agent: HyberTone
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REFER, REGISTER, MESSAGE, INFO, SUBSCRIBE
Content-Type: application/sdp
Content-Length: 226

```

- **Mode 2 example:**

GoIP_4 use SMS Dial Mode 2:



SMS Dial Mode 2

SMS Dial Prefix

One mobile phone's number is (86)13800000000, it sends a SMS "8675588228822" to GoIP_4's GSM SIM card. When GoIP_4 device receive this SMS, it will auto to call number as 8675588228822, and the caller number is GoIP_4's SIP account number.

GoIP_4 will set the SMS sender number to "Call Divert "option's "Forward Number (VoIP to PSTN" automatic. The result is, when SIP server receives the SMS call and call back this GoIP_4 then GoIP_4 will auto call the SMS sender via GSM network.

The sent out signaling as follow:

```

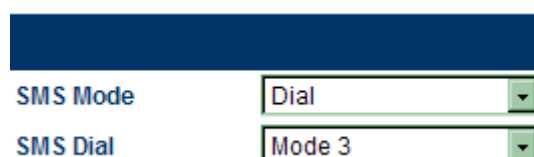
Sending Message to 192.168.2.1:5060:
INVITE sip: 8675588228822@192.168.2.1:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.2.189:5060;rport;branch=z9hG4bK92531725
From: <sip:20001@192.168.2.1:5060>;user=phone;tag=740569827
To: <sip: 8675588228822@192.168.2.1>
Call-ID: 464713443@192.168.2.189:5060
CSeq: 3 INVITE
Contact: <sip:20001@192.168.2.189:5060>
Max-Forwards: 30
User-Agent: HyberTone
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REFER, REGISTER,
MESSAGE, INFO, SUBSCRIBE
Content-Type: application/sdp
Content-Length: 226

```

Use can add a SMS prefix with mode 2, it will work like mode 1.

- **Mode 3 example:**

GoIP_4 use SMS Dial Mode 3:



SMS Mode Dial

SMS Dial Mode 3

One mobile phone's number is (86)13800000000, it sends a SMS "8675588228822" to GoIP_4's GSM SIM card. When GoIP_4 device receive this SMS, it will auto to call number as 8675588228822*(86)13800000000, and the caller number is GoIP_4's SIP account number.

The sent out signaling as follow:

```

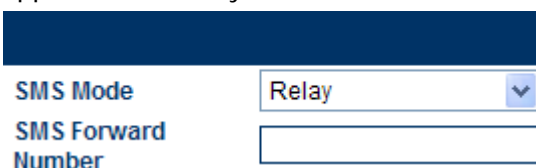
Sending Message to 192.168.2.1:5060:
INVITE sip: 8675588228822*8613800000000@192.168.2.1:5060;transport=udp
SIP/2.0
Via: SIP/2.0/UDP 192.168.2.180:5060;branch=z9hG4bK620642232
From: <sip:20001@192.168.2.1:5060>;user=phone;tag=1333994780
To: <sip: 8675588228822*8613800000000@192.168.2.1>
Call-ID: 52754291@192.168.2.180
CSeq: 2 INVITE
Contact: <sip:20001@192.168.2.180:5060>
Max-Forwards: 30
User-Agent: HyberTone
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REFER, REGISTER,
MESSAGE, INFO, SUBSCRIBE
Content-Type: application/sdp
Content-Length: 226

```

Use can add a SMS prefix with mode 3, it will work like mode 1.

3.6.2 SMS Relay

GoIP_4 GSM gateway supported SMS relay.



The image shows a configuration interface for SMS relay. It features a dark blue header bar. Below it, there are two settings: 'SMS Mode' with a dropdown menu currently showing 'Relay', and 'SMS Forward Number' with an empty text input field.

The SMS Forward Number is the receiver of your VoIP system; it will receive the SMS send from GoIP_4 when some GSM phones send a SMS to GoIP_4.

3.6.2.1 SMS Relay To VoIP System

When GoIP_4 receive a SMS come from GSM network, it will auto relay to VoIP system's appointed number (SMS Forward Number);
 Suppose the SMS Forward Number is 3999 and SMS sender number is "8613682626865 ", the SMS content is "075583185700 ";The GoIP_4 will send a message to your VoIP system like follow:

```

MESSAGE sip:3999@192.168.2.1 SIP/2.0
Via: SIP/2.0/UDP 192.168.2.162:5060;branch=z9hG4bK1967685528
From: <sip:1638@192.168.2.1>;tag=667435795
To: <sip:3999@192.168.2.1>
Call-ID: 2094144847@192.168.2.162
CSeq: 4 MESSAGE
Contact: <sip:1638@192.168.2.162:5060>
Max-Forwards: 30
User-Agent: HyberTone
Content-Type: text/plain
Content-Length: 28

8613682626865
075583185700

```

3.6.2.2 SMS Relay To GSM Network

When GoIP_4 receive a message come from SIP server as follow:

```

MESSAGE sip:1638@192.168.2.162:5060 SIP/2.0
From: <sip:3999@192.168.2.89>;tag=5031
To: <sip:1638@192.168.2.1>
Call-ID: 808807EB-A8B3-DD11-BBA6-005056C00008@192.168.2.89
CSeq: 3 MESSAGE
Contact: <sip:3999@192.168.2.89>
max-forwards: 16
date: Tue, 18 Nov 2008 06:36:37 GMT
user-agent: SIPPER for 3CX Phone
p-hint: usrloc applied
Content-Type: text/plain
Content-Length: 26

13682626800
Hello world

```

The GoIP_4 will send a SMS to GSM number **13682626800**, the SMS content is "Hello world".

3.7 PSTN Caller ID Transparent

In SIP protocol, GoIP_4 support PSTN Caller ID transparent to VoIP via SIP Invite signaling;

| | |
|-------------------|--------------------------|
| SMS Mode | Disable |
| PSTN Forward Fail | Drop The Call |
| CID Forward Mode | Disable |
| | Disable |
| | Use Remote Party ID |
| | Use CID as SIP Caller ID |

Disable: Disable PSTN Caller ID transparent to VoIP;

Use Remote Party ID: GoIP_4 add Caller ID in SIP invite's Remote Party ID option.

```

Sending Message to 192.168.2.1:5060:
INVITE sip:5000@192.168.2.1:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.2.180:5060;branch=z9hG4bK1645487913
From: <sip:20001@192.168.2.1:5060>;user=phone;tag=406202416
To: <sip:5000@192.168.2.1>
Call-ID: 847230278@192.168.2.180
CSeq: 2 INVITE
Contact: <sip:2000@192.168.2.180:5060>
Max-Forwards: 30
User-Agent: HBT
Remote-Party-ID: "13800000000"
<sip:13800000000@192.168.2.1>;party=calling;screen=no;privacy=off
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REFER, REGISTER,
MESSAGE, INFO, SUBSCRIBE
Content-Type: application/sdp
Content-Length: 226

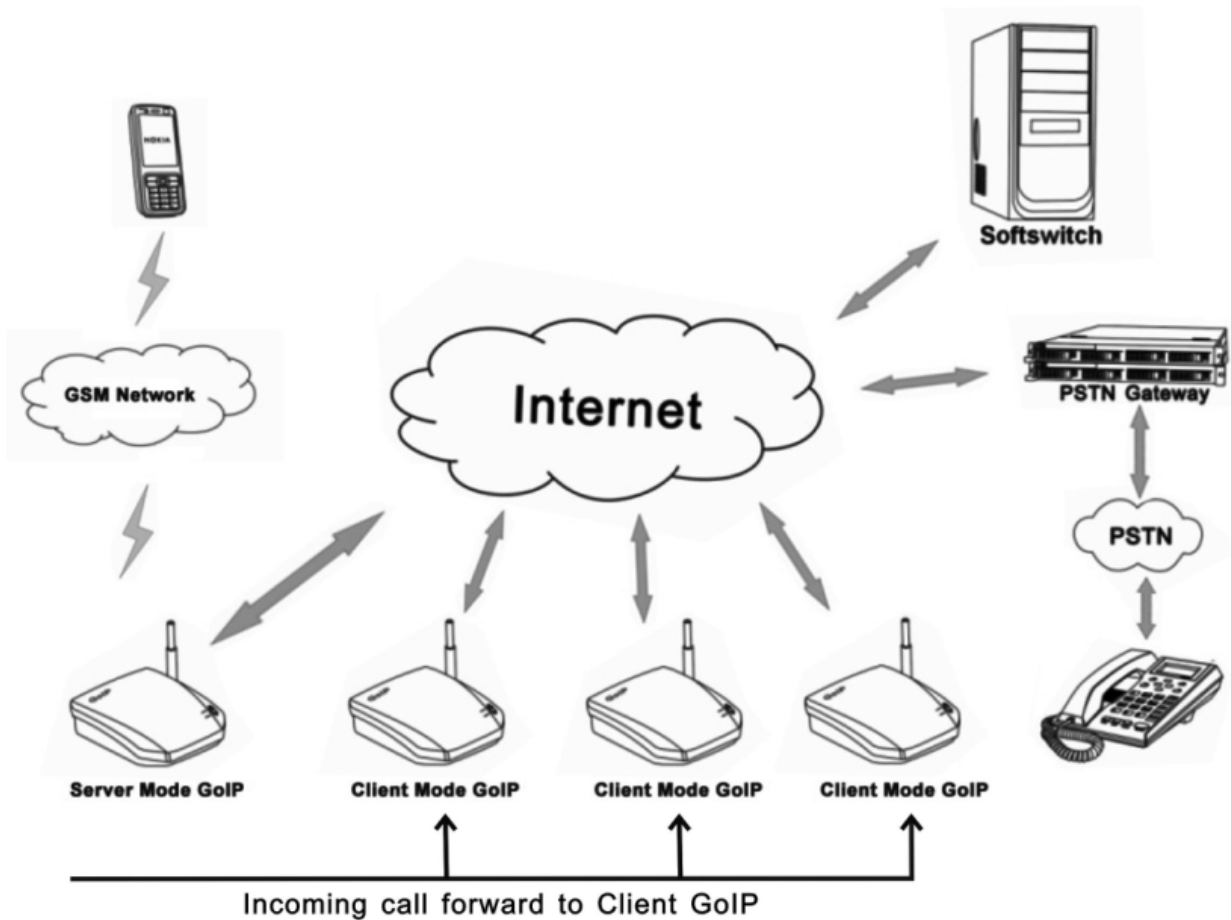
```

Use CID as SIP Caller ID: GoIP_4 use PSTN Caller ID in SIP invitee's Caller ID option and Remote Party ID option.

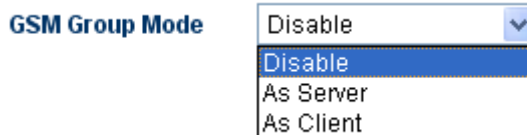
Sending Message to 192.168.2.1:5060:
INVITE sip:5000@192.168.2.1:5060;transport=udp SIP/2.0
Via: SIP/2.0/UDP 192.168.2.180:5060;branch=z9hG4bK1450498491
From: "13800000000" <sip:13800000000@192.168.2.1:5060>;tag=232569343
To: <sip:5000@192.168.2.1>
Call-ID: 1853068986@192.168.2.180
CSeq: 2 INVITE
Contact: <sip:13800000000@192.168.2.180:5060>
Max-Forwards: 30
User-Agent: HBT
Remote-Party-ID: "13800000000" <sip:13800000000@192.168.2.1>;party=calling;screen=no;privacy=off
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, NOTIFY, REFER, REGISTER, MESSAGE, INFO, SUBSCRIBE
Content-Type: application/sdp
Content-Length: 226

About H.323's PSTN Caller ID transmit; we will perfect it in later firmware.

3.8 GSM Group Mode



GoIP_4 supported multi_devices cooperate with one group; it can work like a multi_channels GSM gateway. Any one GoIP_4's channels are can work as Group Server Mode or Client Mode.



Server Mode:

When one channels running in **Server Mode**;
 It can auto forward the GSM's incoming call to any free client channels.
 At this moment, you only offer this channel's GSM number to your user.

Client Mode:

When one channel running at **Client Mode**;
 It will auto send itself GSM number and state to Server mode channel and waiting the incoming call forward from Server channel.
 You must enter itself GSM number and Server GoIP_4 device's IP address into follow

option.

| | |
|-----------------------|--|
| GSM Group Mode | As Client <input type="button" value="v"/> |
| Server Address | <input type="text"/> |
| GSM Number | <input type="text"/> |

Disable: When GoIP_4 run as alone mode, please set all channels to **Disable mode**.

3.9 Dail Plan

Dial Plan defines how a number (VoIP) is processed when GoIP_4 receives it. This field is located in the Calling Setting Window and it is available for both H.323 Phone and SIP Phone. The Dial Plan is very flexible and can be configured for a wide range of dialing applications.

| Call Divert | |
|--|---|
| Forward to PSTN | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Forward Number (VoIP To PSTN) | <input type="text"/> |
| Forward Password (VoIP To PSTN) | <input type="text"/> |
| Dial Plan(VoIP to PSTN) | <input type="text"/> |
| Forward to VoIP | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Forward Number (PSTN To VoIP) | <input type="text"/> |
| Forward Password (PSTN To VoIP) | <input type="text"/> |
| Dial Plan(PSTN to VoIP) | <input type="text"/> |

The basic syntax is "<event>:<action>|<event>:<action>|...", where

<event> defines the event to be matched. A event consists of a sequence of digits. If a specific digit has a limited range, use the syntax [A-B] where A and B are both digit (0 to 9) and B is greater than A. The length of the input number can be limited by using "X" to represent each unknown digit. If this field is omitted, it means any event.

<action> defines the action to be taken on the number received and it consists of "-" (minus), "+" (plus), and digits. "-" followed by digits means to remove the digits from the beginning of the number entered. "+" followed by digits means to add the digits in front of the number entered.

"|" means or and the order of priority is from left to right.

Note: For practical use, it should not be possible to reach the maximum length of the

Dial Plan string.

Examples:

1. Dial Plan = "010:-010" means that the number dialed out will have the first 3 digits "010" removed when a number with the first digits as "010" is entered.
 - a) Number entered = "01082121234", actual number dialed = "82121234".
 - b) Number entered = "82121234", actual number dialed = "82121234".

2. Dial Plan = "1:+00" means that the number dialed out will have the "00" added in front of the number entered when a number with the first digit as "1" is entered.
 - a) Number entered = "1082121234", actual number dialed = "00182121234".
 - b) Number entered = "82121234", actual number dialed = "82121234".

3. Dial Plan = "001:-001+1751" means that the number dialed out will the first 3 digits "001" changed to "1751" when a number with the first digits as "001" is entered.
 - a) Number entered = "00182121234", actual number dialed = "175282121234".
 - b) Number entered = "82121234", actual number dialed = "82121234".

4. Dial Plan = "XXXX:" means that the input number is limited to 4-digit long and will be dialed out immediately when the fourth digit is entered.

5. Dial Plan = "13XXXXXXXXX:+0" means that the input number is restricted to 11-digit long and the first two digits must be "13". When this condition is matched, the number dialed out will have a leading "0" added.
 - a) Number entered = "13901234567", actual number dialed = "013901234567".
 - b) Number entered = "12801234567", actual number dialed = "12801234567".

6. Dial Plan = "13[6-9]XXXXXXXXX:+0" means that the input number is restricted to 11-digit long and the first two digits must be "13" and the third digit can be 6, 7, 8, or 9. When this condition is matched, the number dialed out will have a leading "0" added.
 - a) Number entered = "13901234567", actual number dialed = "013971234567".
 - b) Number entered = "13001234567", actual number dialed = "13001234567".

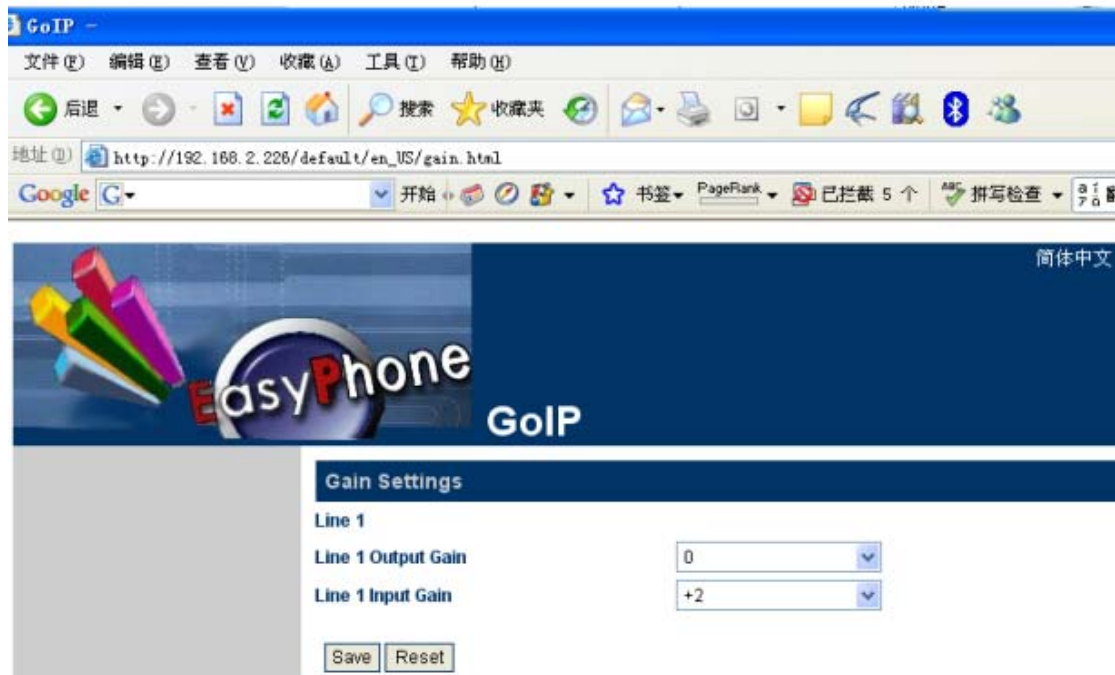
Please note that the above samples are simple and intended to show the meaning of various rules. They may not have any practical meaning. A combination of these rules (joined with the symbol "|") can be realized for a much more complicated dialing application.

3.10 Gain Settings...

A hidden webpage is provided to set the receiving and transmit gains of VoIP Channel. The URL link is:

http://xxx.xxx.xxx.xxx/default/en_US/gain.html

THIS PAGE IS INTENDED FOR AN EXPERIENCED USER OR AN ADMINISTRATOR ONLY. PLEASE SET THE GAINS WITH CAUTIONS.



Note: A too low or too high input gain MAY affect the sensitivity of DTMF detections

3.11 Network Configuration

Click on "Network" tab in the left menu column to configure the LAN and PC ports.



3.11.1 LAN Port

Three LAN Port modes are supported: DHCP, Static IP, PPPoE.

| Network Configuration | |
|-----------------------|---|
| LAN Port | PPPoE |
| User name | DHCP |
| Password | Static IP |
| 802.1q VLAN | Enable <input checked="" type="radio"/> Disable <input type="radio"/> |
| VLAN Id | <input type="text"/> |
| VLAN QoS | <input type="text"/> |
| Advance<< | |
| Ethernet(MAC) Address | <input type="text"/> |
| IP Broadcast Address | <input type="text"/> |

1) DHCP

Choose DHCP if a local DHCP host is available. This allows the GoIP_4 Gateway to obtain network information (IP Address, Subnet Mask, Default Route, Primary DNS, Secondary DNS, and other DHCP options) from the DHCP host.

2) Static IP

| Network Configuration | |
|-------------------------|----------------------|
| LAN Port | Static IP |
| IP Address | <input type="text"/> |
| Subnet Mask(optional) | <input type="text"/> |
| Default Route | <input type="text"/> |
| Primary DNS | <input type="text"/> |
| Secondary DNS(optional) | <input type="text"/> |

Choose **Static IP** if your network topology requires. Please fill in Fill in the IP Address, Subnet Mask, Default Route, Primary DNS, and Secondary DNS (optional) as provided by your network administrator.

3) PPPoE

| Network Configuration | |
|-----------------------|----------------------|
| LAN Port | PPPoE |
| User name | <input type="text"/> |
| Password | <input type="text"/> |

PPPoE is a common dial up method for you network modem (Cable / xDSLs). Choose this if your network environment requires. Enter the **User Name** and **Password** as provided by your ISP.

4) 802.1q VLAN

This QoS feature requires your QoS support of your network to improve voice data traffics. Please consult your network administrator for proper settings.

5) Advanced...

The **Advanced** settings allow the user to set the broadcast address and to clone a MAC address instead of using the factory preset MAC address. Please consult your network administrator for further information.

Advance<<

| | |
|--------------------------|----------------------|
| Ethernet(MAC) Address | <input type="text"/> |
| IP Broadcast Address | <input type="text"/> |

3.11.2 PC Port Configurations

The PC Port allows addition network devices to be attached behind the GoIP_4 Gateway. It offers both Bridge and Static IP modes to meet your network topology. It is factory preset to the Static IP mode with the IP address 192.168.8.1.

| | |
|-----------------------------|---|
| PC Port | Static IP <input type="button" value="v"/> |
| IP Address | <input type="text" value="192.168.8.1"/> |
| Subnet Mask | <input type="text" value="255.255.255.0"/> |
| DHCP Server | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Starting Address | <input type="text" value="192.168.8.150"/> |
| Ending Address | <input type="text" value="192.168.8.200"/> |
| Static DNS(optional) | <input type="text"/> |

Advanced>>

1) Bridge Mode

Select **Bridge** mode if your network topology requires the network devices (PC or others) to be in the same network segment as the GoIP_4 Gateway. In this case, the GoIP_4 Gateway functions as an Ethernet Switch.

2) Static IP Mode (Default Setting)

Select **Static IP** mode for a new network segment for the network devices behind the GoIP_4 Gateway. In this case, the GoIP_4 Gateway functions as an Ethernet Router. Fill in the **IP Address** field with a new segment address that is different from that for the LAN port. Please select the **Subnet Mask** accordingly. A commonly used value

is 255.255.255.0.

| | |
|-------------|---|
| | |
| PC Port | <input type="text" value="Static IP"/> |
| IP Address | <input type="text"/> |
| Subnet Mask | <input type="text"/> |
| DHCP Server | <input type="radio"/> Enable <input checked="" type="radio"/> Disable |

Enable the DHCP Server if you want the GoIP_4 Gateway functions as a local DHCP host for the PC segment. This will enable the GoIP_4 Gateway to assign IP Addresses to network devices that are attached to the PC port segment.

| | |
|----------------------|---|
| DHCP Server | <input checked="" type="radio"/> Enable <input type="radio"/> Disable |
| Starting Address | <input type="text"/> |
| Ending Address | <input type="text"/> |
| Static DNS(optional) | <input type="text"/> |

Specify the Starting Address, Ending Address, and Static DNS accordingly.

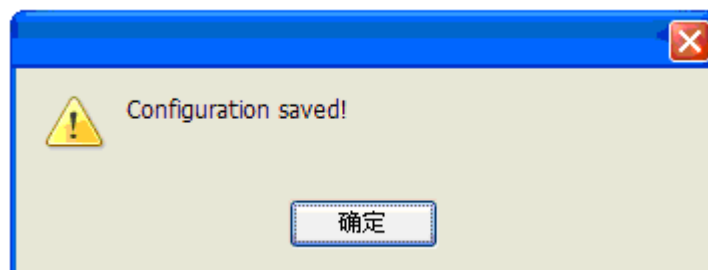
4) Advanced...

The **Advanced** settings allow the user to set the broadcast address and to clone a MAC address instead of using the factory preset MAC address. Please consult your network administrator for further information.

| | |
|--------------------------|----------------------|
| | Advance<< |
| Ethernet(MAC) Address | <input type="text"/> |
| IP Broadcast Address | <input type="text"/> |

3.12 Save Configuration

To confirm and commit all changes made, click on the **Save Changes** tab. Otherwise, all changes will be discarded. Once all changes are saved, the following screen message is displayed.



3.13 Discard Changes

To discard all changes made, click on the Discard Changes tab.

3.14 Tools Menu

Select the Tools to access the following functions: Online Upgrade, Change Password, Reset Config, and Reboot.

| | |
|-----------------|---|
| Status | Online Upgrade |
| Configurations | Last Upgrade Time: |
| Tools | Current Version: GHS-3.01 |
| Online Upgrade | Upgrade Site: <input type="text"/> <input type="button" value="Start"/> |
| Change Password | |
| Reset Config | |
| Reboot | |

3.14.1 Online Upgrade

To perform a firmware upgrade, select the Online Upgrade tab to access the page below.

| |
|---|
| Online Upgrade |
| Last Upgrade Time: |
| Current Version: GHS-3.01 |
| Upgrade Site: <input type="text"/> <input type="button" value="Start"/> |

Enter the update link as provided by your service provider. A sample link is:

hk.ippcn.com/update/GHS-3.01-18.pkg

Click the Start button to start the firmware upgrade.

WARNING: POWER SHUTDOWN / FAILURE DURING FIRMWARE UPGRADE MAY PERMANENTLY DAMAGE THE GOIP_4 GATEWAY.

3.14.2 Change Password

Click on the Change Password tab to access the page below.

The image shows a web interface for changing passwords. It is divided into two main sections, each with a dark blue header. The first section is titled "User Level" and contains two text input fields: "New Password:" and "Confirm Password:". To the right of the "Confirm Password:" field is a light green button labeled "Change". The second section is titled "Administration Level" and also contains two text input fields: "New Password:" and "Confirm Password:". To the right of the "Confirm Password:" field is a light green button labeled "Change".

A) User Password

This is the password for the user name/ID "user". The default password is "1234". This user name is limited to access the Network Configuration menu.

B) Administrator Password (default: admin)

This is the password for the user name/ID "admin". The default password is "admin". This user name allows full access to all configuration settings available.

3.14.3 Reset Configuration

Click on the Reset Config tab to reset the GoIP_4 Gateway to its factory default settings.

3.14.4 Reboot the Device

Click on the Reboot tab to reboot the GoIP_4 Gateway.

4 Hardware Specifications

| Characteristics of the hardware | Parameter | Remarks |
|---------------------------------|-----------------------|------------------------|
| Processor | ARM9E 133MHz | |
| DSP | VPDSP101-4 100MHz | |
| RAM | 16M | |
| Flash | 4M | |
| Power | DC12V/2000mA +-10% | Input AC100V to AC240V |
| GSM Module Type | Default 900M/1800M | |
| | Optional 850M/1900M | |
| Consumption | The Maximum 5 W | |
| LEDs | RUN, GSM, LAN, PC,GSM | |
| Network Ports | 2 RJ45; Supported NAT | 100/10BASE-T |
| Weight | 900 Grams | Full Set |
| Working Temperature | 0—40℃ | |
| Working Humidity | 40%—90% Not Congealed | |
| Colour | Grey | |
| GSM SIM Ports | 4 | |
| VoIP Channels | 4 | |

5 Manufactory Parameters

| Parameters | | Default Setting |
|------------|-------|--|
| Network | LAN | DHCP (Auto Obtain) |
| | PC | Static IP:192.168.8.1 DHCP Server Running |
| Password | admin | admin |
| | user | 1234 |
| Time Zone | | GMT+8 |

Note :This default parameter are unsuitability the customization's products.