YX
Series GP User Manual
V5.1.5

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CONTENT

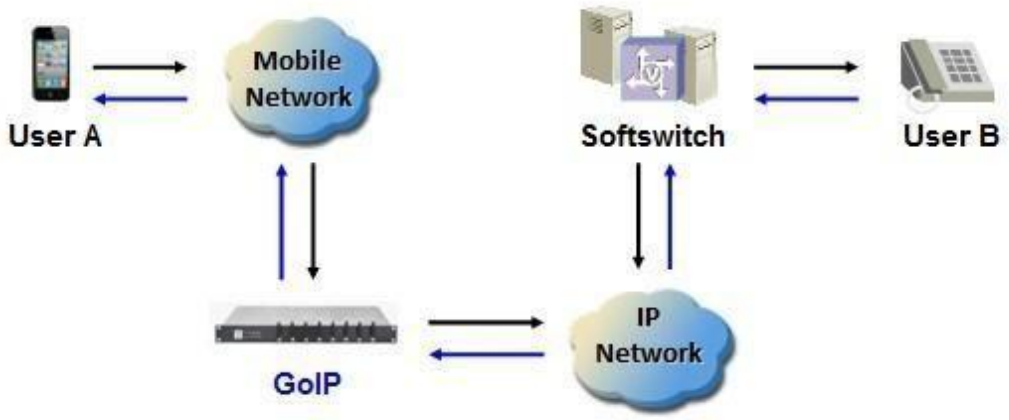
❖1 Introduction

1.1 Overview

VoIP GSM Gateway Over IP (GP Gateway) is a device which reduces costs when calling from a fixed telephone line to mobile network. It enables direct routing between IP, digital, analog and mobile networks.

GP Gateway is now used more and more for telephone carriers to land their IP calls to mobile network. In those areas where fixed line services are unavailable or much more expensive than the mobile cost, GP Gateway is an irreplaceable alternative.

The following figure shows a basic topology of GP Gateway usage.



1.2 Glossary

- VoIP: Voice over Internet Protocol.
- SIP: Session Initial Protocol.
- DTMF: Dual Tone Multiple Frequency.
- IMEI: International Mobile Equipment Identity (with15 digits).
- ASR: Answer Seizure Ratio.
- ACD: Average Call Duration.
- PDD: Post Dial Delay.
- LCR: Least Cost Routing.
- USSD: Unstructured Supplementary Service Data. GSM: Global System Communications.
- CDMA: Code Division Multiple Access.
- WCDMA: Wideband Code Division Multiple Access.
- CDMA: Code Division Multiple Access
- LTE(FDD-LTE TDD-LTE): Long Term Evolution

❖2 Equipment Information

2.1 Product Brief

YX series GP Gateway is a multi-functional and high performance product, which is designed with advanced embedded technology. YX series is able to process traditional voice call service and internet data service. perfectly support G729a/b/e、G723.1、G.711 a/u law and iLBC codecs at the same time.

YX series GP Gateway please check the following table about the difference:

Model Number	Channel	Sim capacity in each channel	Total sim capacity	Frequency(optional)
YX GP 4-4	4	1	4	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 8-8p	8	1	8	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 8-8s	8	1	8	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 8-32	8	4	32	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 16-16	16	1	16	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 16-64	16	4	64	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 16-128	16	8	128	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 16-256	16	16	256	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 16-512	16	32	512	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 32-32	32	1	32	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 32-64	32	2(1 Big+1 Small)	64	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 32-128	32	4	128	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 32-256	32	8	256	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 32-512	32	16	512	GSM / CDMA / WCDMA / 4G(LTE)
YX GP 64-64	64	1	64	**Currently unavailable, development in progress**
YX GP 64-256	64	4	256	
YX GP 64-512	64	8	512	

2.2 Appearance




- 4/8/16/32/64 Antennas
- 1 USB Serial Port (Baudrate 115200)
- 1 Network Interface (RJ45)
- 1 Power Interface (DC 12V 3A/5A/7.5A/8A)
- 1 Power light
- 1 Reset Button
- 4/8/16/32/64/128/256/512 SIM card slots
- 4/8/16/32/64/128/256/512 LED lights

2.3 Special Features

- Support G729a/b/e,G723.1,G.711 A/U law, iLBC auto-selecting
- BO(Bandwidth Optimization)
- Proxy Encryption Solution for IP Block
- Support SIM Bank
- VPN(pptp)
- SIM Card Rotating
  - SIM card check and switch rules:
    - Accumulated Call Duration
    - Accumulated Connected Calls
    - Accumulated Calls
    - Consecutive Failed Calls
    - Consecutive No-Alert Calls
    - Consecutive No-Answer Calls
    - Consecutive No Carrier Calls
    - Consecutive Short-Duration Calls
    - Consecutive Fast-Alerting Calls Checking
    - Consecutive Fast-Answer Calls Checking

- ✧ Consecutive GSM Release Cause Checking
- ✧ Accumulated SMS Count Checking
- ✧ Accumulated Failed SMS Count Checking
- ✧ Consecutive Failed SMS Count Checking

- Station intelligent switching(By switching rules)
- ERMS(Easement Remote Management System)
- Port Inter-Calling
- Fake Ring back
- FAS shield
- Call waiting
- Call Duration Limitation for SIM Card/Single
- Dial Plan/Prefix Inward Translation/Intelligent Routing
- Web Browser: Firefox/Chrome /IE/Opera

2.4 Specification

Number of Channels	4 channels 4 SIM slots 8 channels 8/32 SIM slots 16 channels 16/64/128/256/512 SIM slots 32 channels 32/128/256/512 SIM slots 64 channels 64/256/512 SIM slots (Currently unavailable)
Frequency	GSM, CDMA, WCDMA, LTE(When purchasing 3G or 4G equipment, please confirm the frequency band and module with the account manager!)
SIP Specification	SIP/2.0 RFC3261 Session Timer RFC4028 STUN
SMS Specification	SMPP3.4
Network Protocols	DHCP/PPPoE/VPN(pptp) NTP Telnet/HTTP/FTP/TFTP Encryption:Security,VOS2000,RC4,XOP.Base64
Telephony Features	Hot-line call ,Dial plan, Speed dial, Phone book, CDR, LCR, White/Black list
Telephony Signaling	DTMF tone dectection/generation DTMF relay: in-band, RFC 2833 and SIP info Call forward: unconditional, no answer and busy N-way conferencing Caller ID display/generation, Mobile Number Portability
Voice Capability	Voice codecs:G729a/b/e,G723.1,G.711 A/U law, iLBC Echo cancellation Silence suppression & detection（VAD, CNG） Adaptive jitter buffer Volume adjustable IVR customized

Number of Ports	1 WAN 10/100Base-T Ethernet(RJ-45 connector) 1 Console(USB)
LED	1 Power and 4/8/16/32/64groups of card online and running status indicator
Power Supply	100-240VAC, 50 - 60 Hz IN, 12VDC 3A/5A/7.5A/8A Out
Operating Environment	Operating temperature: 0 - 50ºC Operating humidity: 10 – 90%RH
Warranty	12 Months

2.5 Mobile Features

- SMS Send, Receive and Forward(GSM/SIP/HTTP)
- SMS Inbox
- AT Command , USSD
- SMS Format: PDU/TXT
- PIN Code Management
- CDMA Delay Answer
- GSM Polarity Reversal
- Carrier Selection
- Caller ID Hidden(need SIM Card support)

2.6 Maintenance and Management

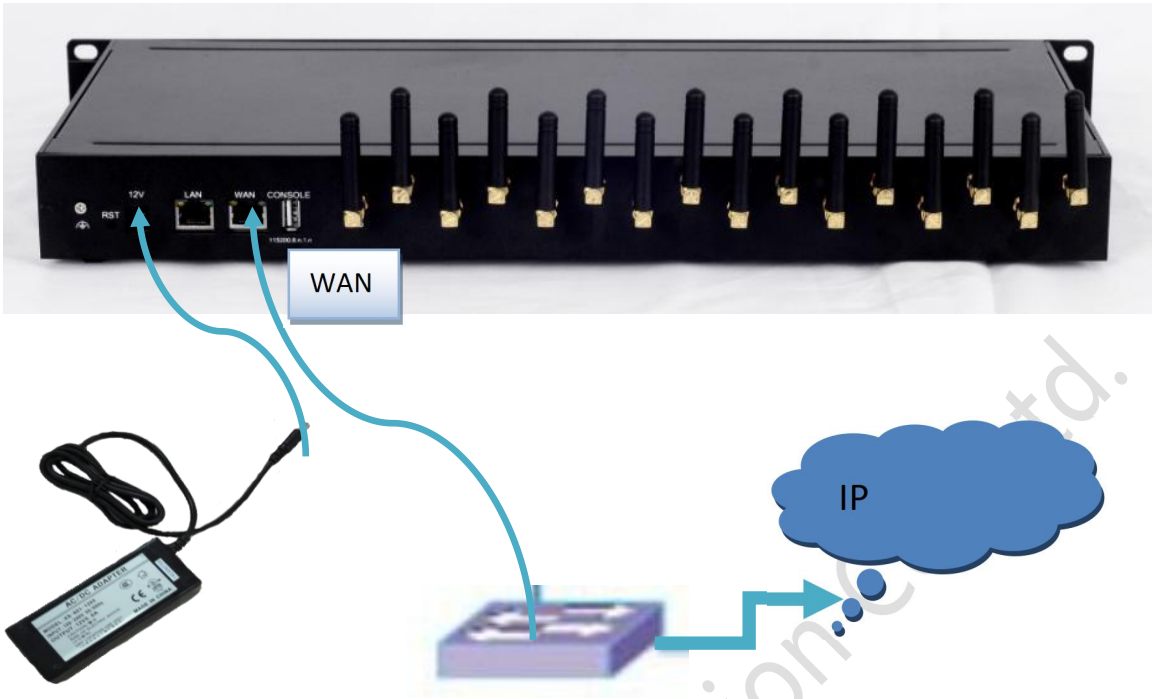
- Multi-language Interface
- USB Serial COM
- Configuration Backup and Restore
- Support HTTP/TFTP Upgrade
- Call statistics: ASR,ACD,PDD
- WEB Remote Management System
- SMPP support
- HTTP Command

❖3 Equipment Installation

This chapter describes how to install a new GP Gateway to a physical network environment, how to initialize it and start it in a proper way.

3.1 Network Setup

Network is a prerequisite to install GP Gateway. The following figure shows the topology of Network with a VoIP Gateway connected.(No LAN port)



Switch/Router

3.2 Equipment IP Address

The default IP of GP Gateway WAN port is 192.168.1.10, while the default LAN port IP is 10.10.10.1(The Version not up the LAN port).

3.3 Equipment Connection

Follow the steps below to install the GP Gateway to Network.

1) Fix the antenna to the GP Gateway. (Optional)
2) Insert SIM card(s) to slots.
3) Connect an Ethernet Cable to the WAN port of GP Gateway. The other end of the Ethernet Cable should be connected to Network port of route or switch.
4) Connect an Ethernet Cable to the Network port of GP Gateway. The other end of the Ethernet Cable should be connected to PC or other network device. (Optional)
5) Plug in the GP Gateway.

3.4 LED Indicators

There are a set of LED lights in the front of GP Gateway. Lights will be on or glittering when the GP Gateway is power on and running. The following table describes various meanings of status corresponding to LED lights in different display color.

Power	It indicates whether the system is running or not.

Calling	That one Card slot light to keep bright
Lock card	That one Card slot light flashing(0.5s/times)
No balance/ Call Duration Limit/ SMS Control (Meet these conditions when the lock card)	That one Card slot light flashing(2s/times)
The device did not start successfully	All slot lights keep bright

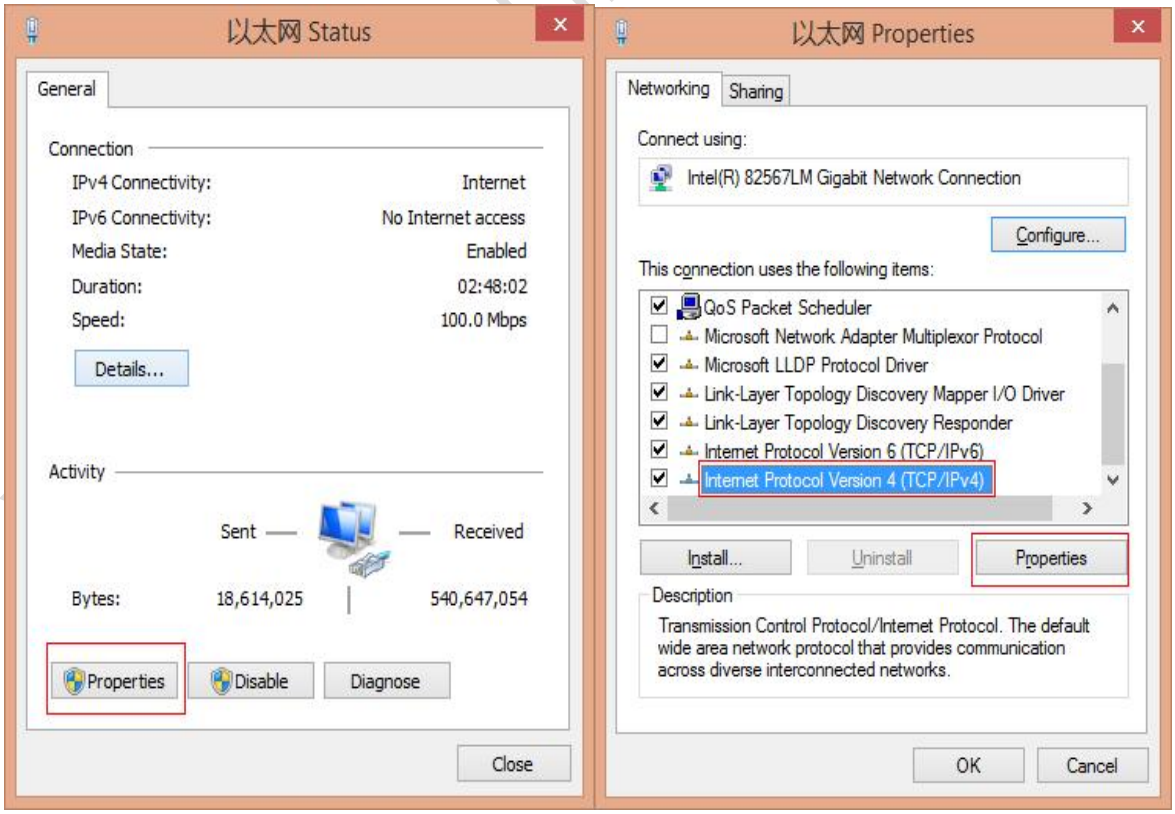
❖4 Web Settings

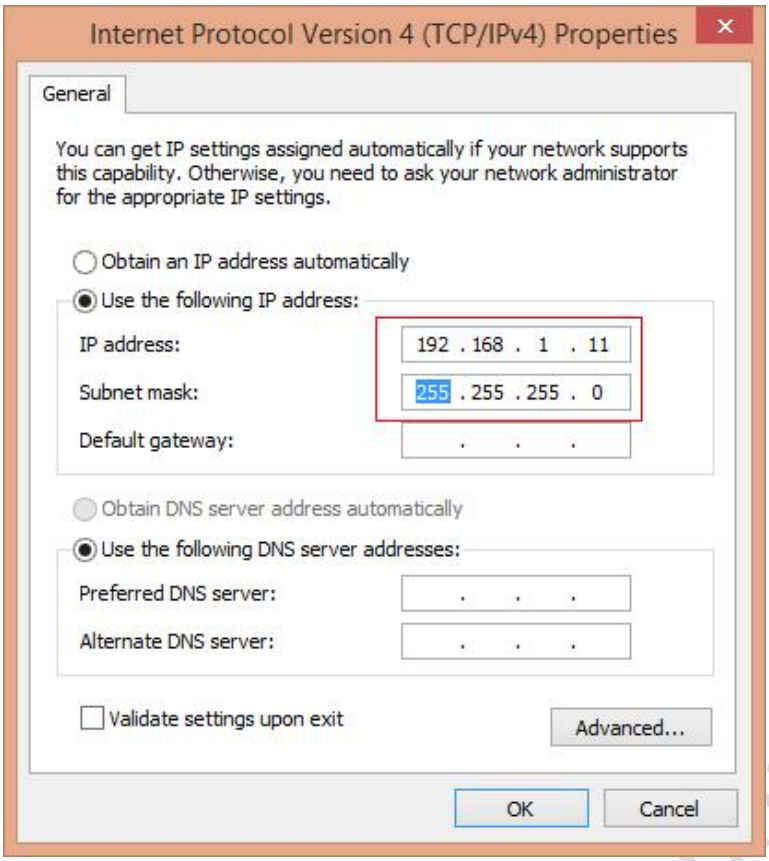
This chapter describes how to set up GP Gateway through Web Page. There is a built-in web server which can be accessed at URL: http://GATEWAY_IP/, while GATEWAY_IP is the WAN IP address of the GP Gateway, such as 192.168.1.10.

As an example, the following introduction will base on the GP Gateway with WAN IP 192.168.1.10.

4.1 Login

First, connect a computer to the same LAN with GP, add the GP IP segment in the computer. If your computer's IP address is not 192.168.1. XXX, how to change:





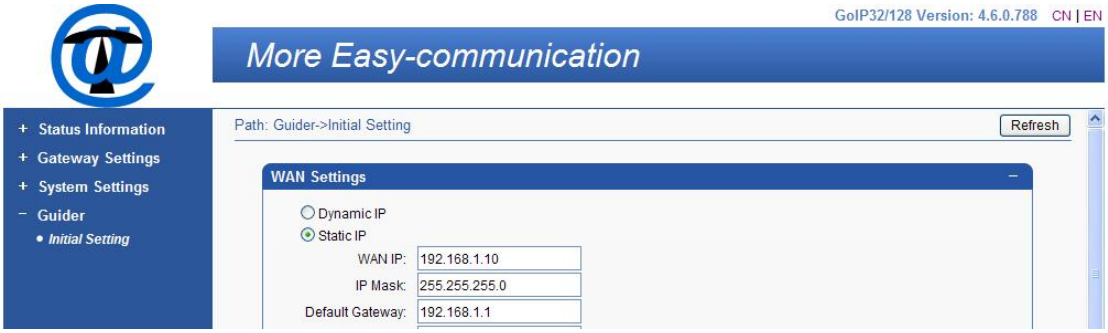
Save it

Open web browser and access URL http://192.168.1.10. The default login page will be displayed as following.

The default login account and password are:

Account	root
Password	root

It is recommended to use IE/FireFox/Chrome to access the web pages. After successfully logged in, the main page to set Gateway is as following:



❖5 Guider

Guider will be described in this paragraph. The most frequently modified parameters and most of the individual parameters are listed in this page.

WAN port is to connect to switch or route then you can use PC that on the same LAN network to login. There's three types of wan connect.

Static IP: You can set WAN IP,IP Mask, Default Gateway and DNS Server of WAN port to connect the Internet.
Dynamic IP: You can get IP address ,IP Mask ,Default Gateway and DNS Server dynamically from your DHCP server.
PPPoE: In this mode,you can use GP device to dail-up network. You can set User Name and Password which you get from your ISP. And you also can set MTU and Service Name.

SIP Server Settings is for SIP communication with IP network. Fields are specified as following:

- SIP Server Settings: Specify SIP client working mode. Option values are Registration/Point-to-Point. If set to Registration, SIP client will send registration messages to SIP server.
- SIP Server IP: Specify the IP of SIP server.
- SIP Server Port: Specify the port of SIP server.`
- Phone Number: Specify the caller phone number for SIP client. It can also be regarded as the SIP port number which can be called.
- Account: Specify the SIP account for registration.
- Password: Specify the SIP password for registration.

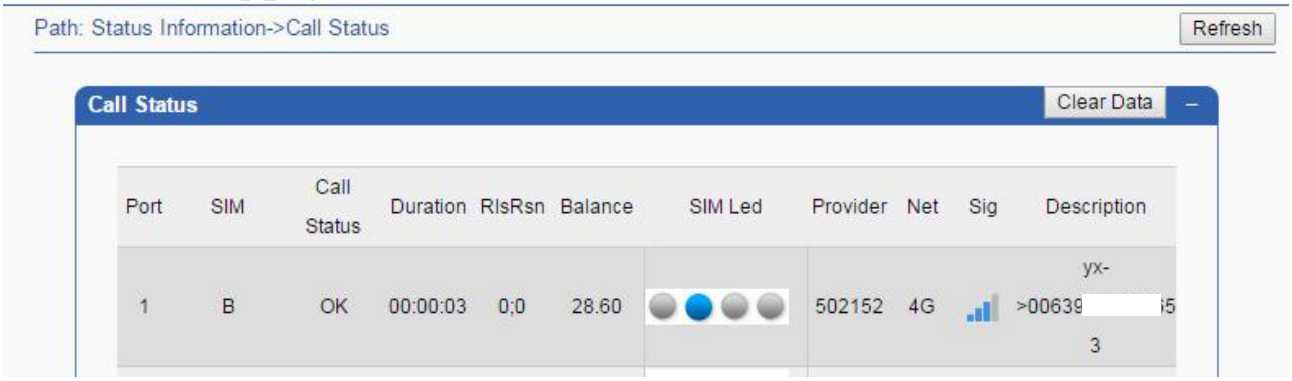
Note: The settings of Phone Number, Account and Password are globally active. They will apply to all SIP ports settings in SIP Protocol page.

❖6 Status Information

6.1 Call Status

6.1.1 Call Status

The screenshot below shows the live call status.



The status columns are specified as following:

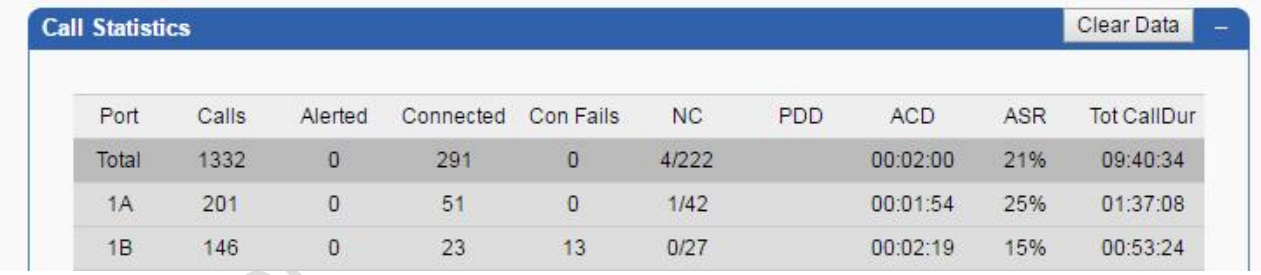
- Port: The physical port sequence from 1 to4/8/16/32/64.
- SIM: SIM Card slot number in use.
- Call State: Specify the call status.

- Duration: Specify the call duration.
- RlsRsn: Hang up the reason code(On the left is the Moblie hang-up code, on the right is the VOIP hang-up code)
- Balance: Specify the current balance of the card in this port.
- SIM Led: shows the GP Gateway port LED status. Different LED
- Provider: The mobile provider that system detects.
- Net: The current mobile network model(2G/3G/4G),need device support
- Signal Intensity: Specify the mobile signal intensity.
- ASR: Shows the port of ASR statistics.
- ACD: Shows the port of ACD statistics.
- Description: Specify the card dialing number status.
- Clear Data: Clear ASR and ACD data, restart statistics.

Note:
LED A/B/C/D(.01-.16) displays in accordance with the lights on the front board of GP Gateway. Port 1 to 4/8/16/32/64 relate to the physical port of GP Gateway. The following table shows the relationship between LED color and port status.(When registering a card, the description of the card may not be displayed in real time. Please refer to the information displayed on the icon)

6.1.2 Call Statistics

The screenshot below shows the call statistics information for analysis.



Port	Calls	Alerted	Connected	Con Fails	NC	PDD	ACD	ASR	Tot CallDur
Total	1332	0	291	0	4/222		00:02:00	21%	09:40:34
1A	201	0	51	0	1/42		00:01:54	25%	01:37:08
1B	146	0	23	13	0/27		00:02:19	15%	00:53:24

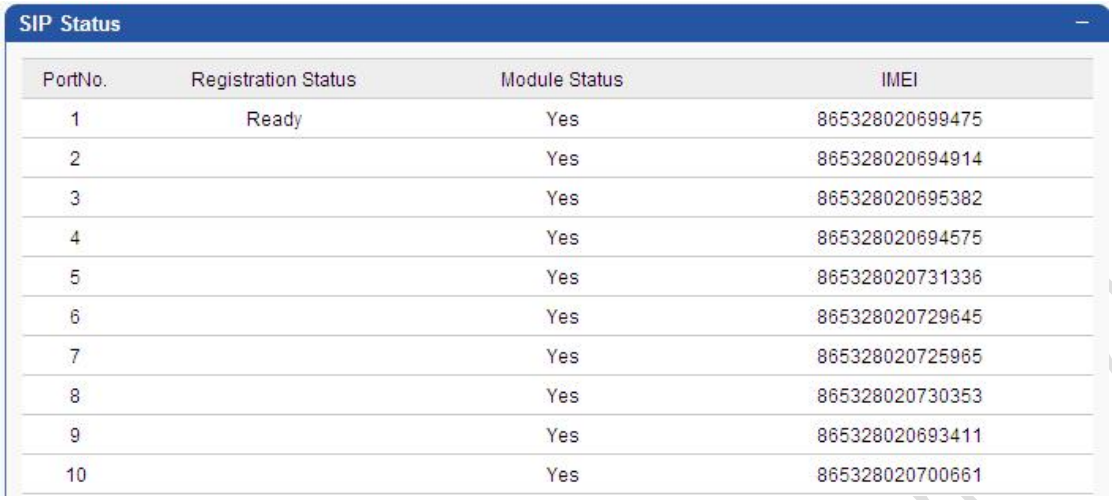
The status columns are specified as following:

- Port : Shows the status of each SIM card slot.
- Calls: Specify the total calls made out from this port since the last start up of system.
- Alerted: Specify the total number of responded alerting message for all the calls made.
- Connected: Specify the total number of answer from destination for all the calls made.
- Consecutive Fails: Specify the consecutive fail calls.
- No Carriers(NC): The carrier did not respond to the outgoing statistics
- PDD: Specify the average duration to receive the response of alerting message.
- ACD ASR : Display ACD and ASR for each SIM card slot
- Tot CallDur: The port total calls duration used out from this port since the last start up of system.
- Clear Data: Clear all data, restart statistics.

A total summary is displayed at the bottom of the table.

6.2 Device Status

The screenshot below shows the SIP and Module status.



SIP Status

PortNo.	Registration Status	Module Status	IMEI
1	Ready	Yes	865328020699475
2		Yes	865328020694914
3		Yes	865328020695382
4		Yes	865328020694575
5		Yes	865328020731336
6		Yes	865328020729645
7		Yes	865328020725965
8		Yes	865328020730353
9		Yes	865328020693411
10		Yes	865328020700661

The status columns are specified as following:

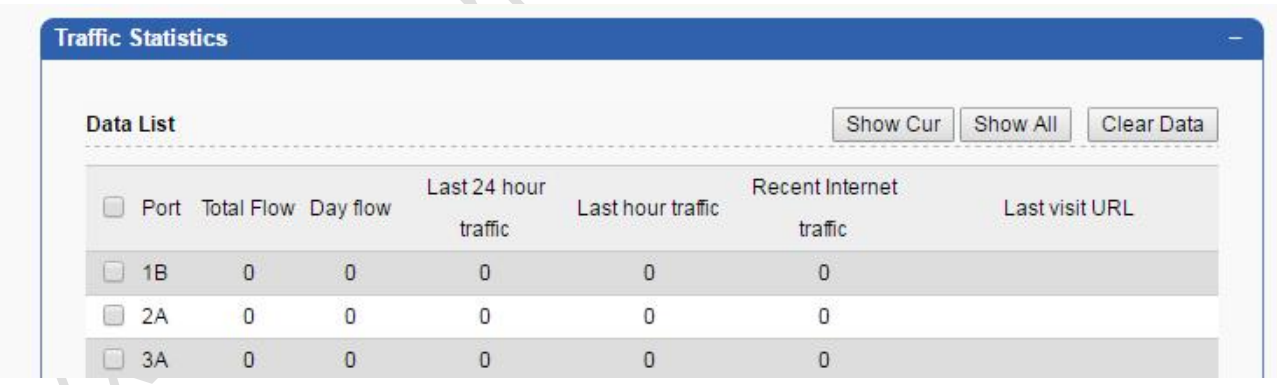
- Port No: The physical port sequence from 1 to 4/8/16/32/64.
- Registration Status: Shows the port registration to SIP server infomation status.
- Module Status: Shows the port Module use status(Yes/No). If NO is displayed,please try restarting. If still, Please contact YX NOC
- IMEI: Specify the port current using of IMEI.

6.3 System Status

The screenshot below shows the system status. It includes WAN status, LAN(please ignore) and others. The reported information can help you get the system status detail in a fast, simple way.

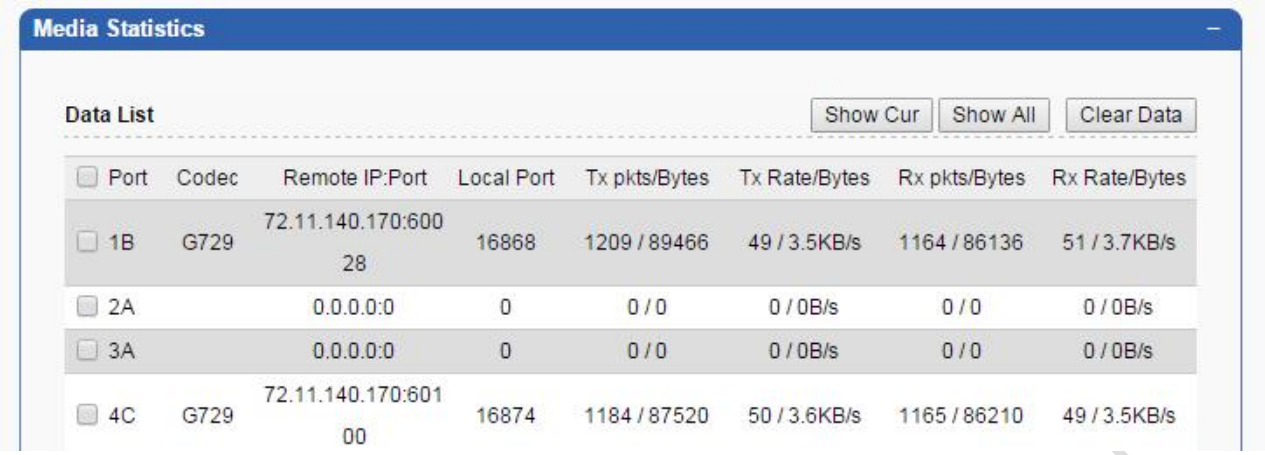
6.4 Traffic Statistics

This is used to count the internet traffic of the card in use



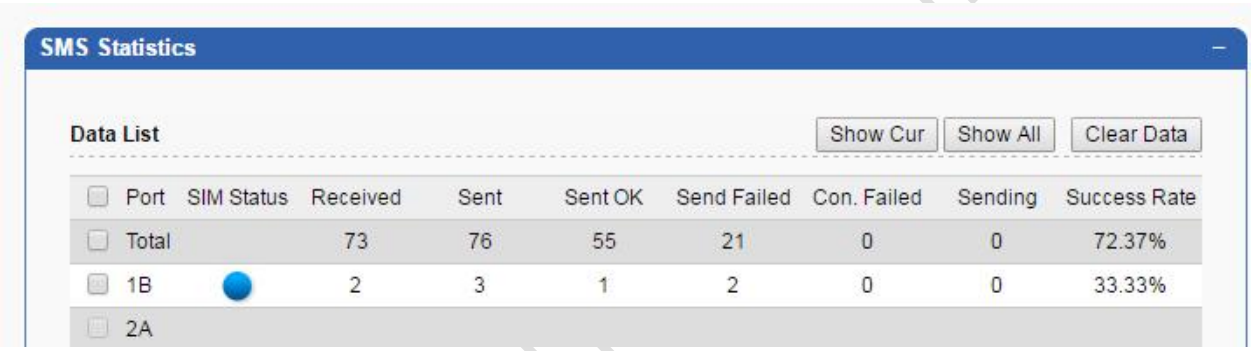
6.5 Media Statistics

Here statistics IP network media and traffic data situation

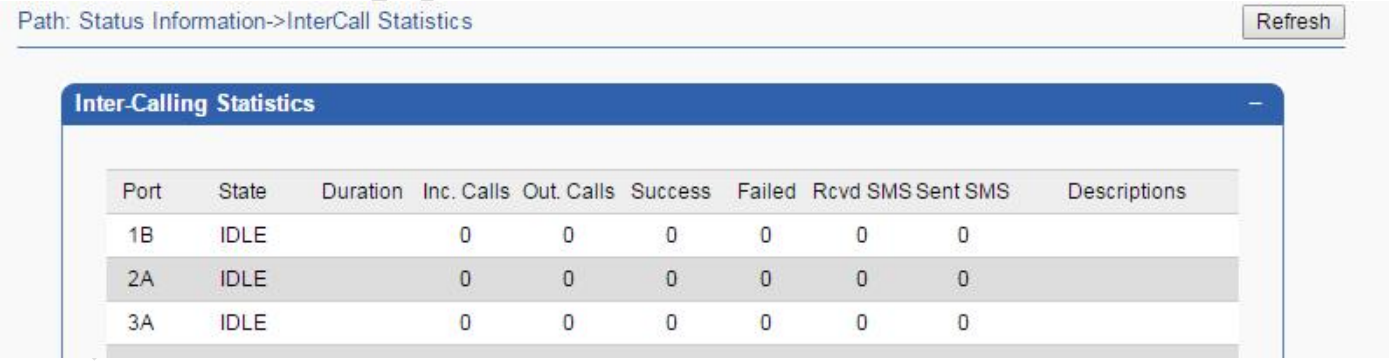


6.6 SMS Statistics

Here Statistics SMS send and receive, send failure and success of the situation



6.7 InterCall Statistics



The status columns are specified as following:

- Port No: The physical port sequence from 1 to 4/8/16/32/64.
- State: Specify the call status.
- Duration: Specify the call duration.
- Inc calls: Specify the total incoming calls since the last start up of inter calling system.
- Out Calls: Specify the total outgoing calls since the last start up of the inter calling system.
- Success: The number of successes in Inter-Calling
- Failed: The number of failed in Inter-Calling

- Rcvd SMS: Specify the total received SMSs since the last start up of the system.
- Sent SMS: Specify the total sent SMSs since the last start up of the system.
- Descriptions: Specify the card status.

❖7 Gateway Settings

7.1 Network Settings

The screenshot below shows the operation mode to set VPN settings, and the supports protocol of vpn is PPTP & OpenVPN.

Fields are specified as following:

- VPN Support: Whether support VPN or not.
- Server Address: Specify the VPN server address.
- Usename: Specify the username of VPN.
- Password: Specify the password of VPN.
- Local IP: The VPN client ip.
- Remote IP: The VPN remote ip

The default port of web server is 80. The field Web Port is used to set another different port for web server. For example, if field Web Port is set to 8080 and wan IP is 192.168.1.10, the web pages then should be accessed through URL: http://192.168.1.10:8080 from this computer.

The field Telnet Port is used to change the default port of telnet service.

7.2 Phone Book

IP to IP calls

The screenshot below shows the operation mode to set phone book. Phone book is a list contains the relationship between destination phone prefix and gateway information.(If your GP is not set public IP, please do not operate this feature)

Add New

Click button Add New to expand the data input area to add new data. Fields are specified as following:

Data status: Mark the status of current data record. Option values are Add/Edit. Value Add means the data is new while value Edit means the data is old.

- Remote Gateway ID: Specify the prefix of destination number for outbound call to IP. If a destination is best matched with any prefix in phone book, the destination call will be routed to the IP gateway specified by Gateway IP and Gateway Port.
- Gateway IP: The remote gateway IP.
- Gateway Port: The remote gateway port.

Click button Submit on the right to save the new data record.

Edit

All the phone book records are displayed in list. Two operations are provided on the right of each record. Click Edit to expand the current data record to Data Detail Area which is above the Data List.

Click button Submit on the right to save the old data record.

Delete

Click Delete on the right of each record to delete the current record. A message box will be popped for delete confirmation.

Another shortcut button is also provided on the top right of Data List to delete multiple selected records in batch. A message box will be popped for confirmation of batch delete.

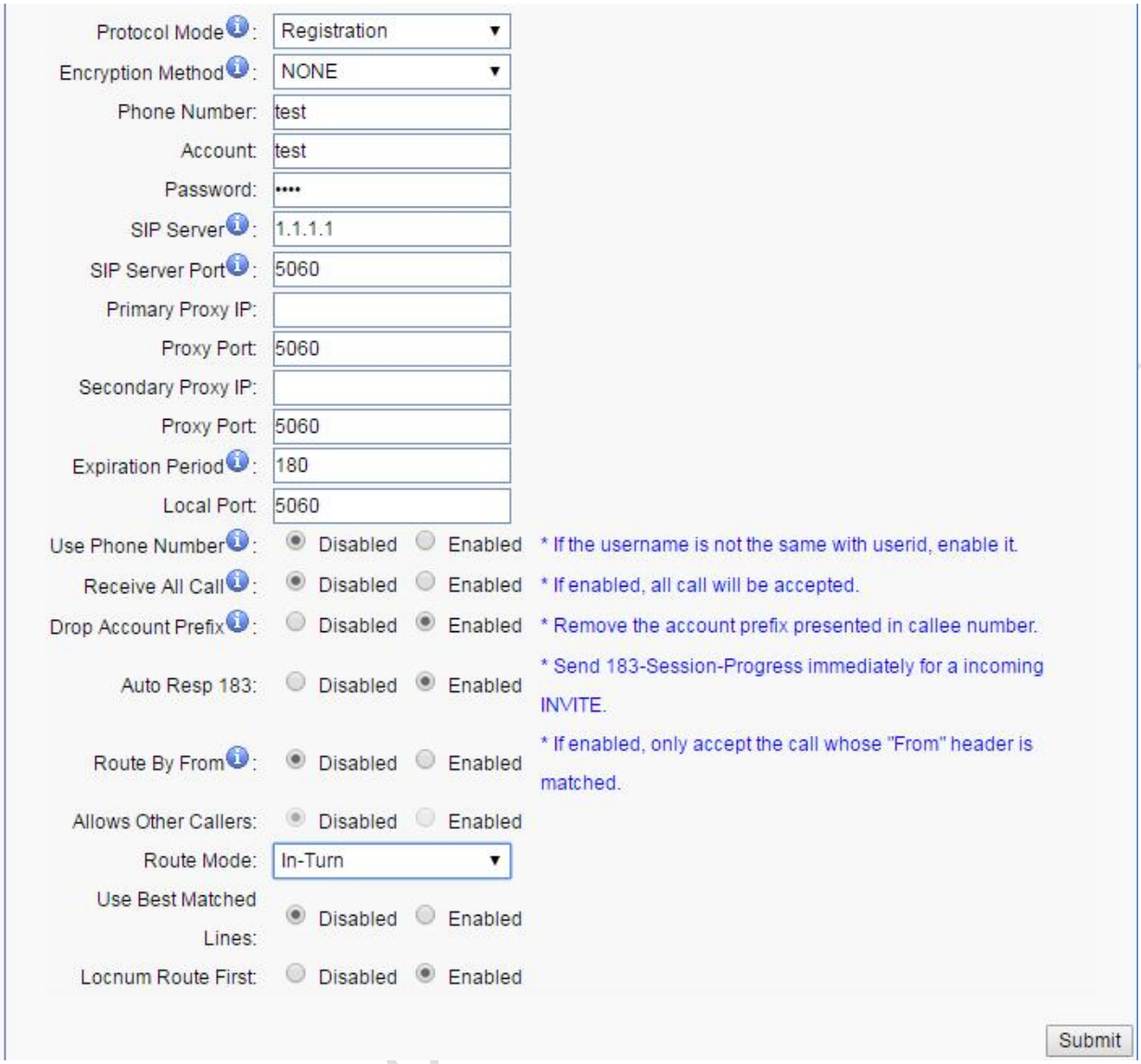
Note: The operations Add New/Edit/Delete/Batch Delete mentioned in the following paragraph are almost the same as phone book.

If you changed the data, take effect after reboot the gateway

7.3 SIP Setting

SIP Settings will be described in this paragraph. It mainly targets to set up parameters related to SIP server, SIP account and SIP password for SIP registration.

The screenshot below shows the operation mode to set SIP running parameters.

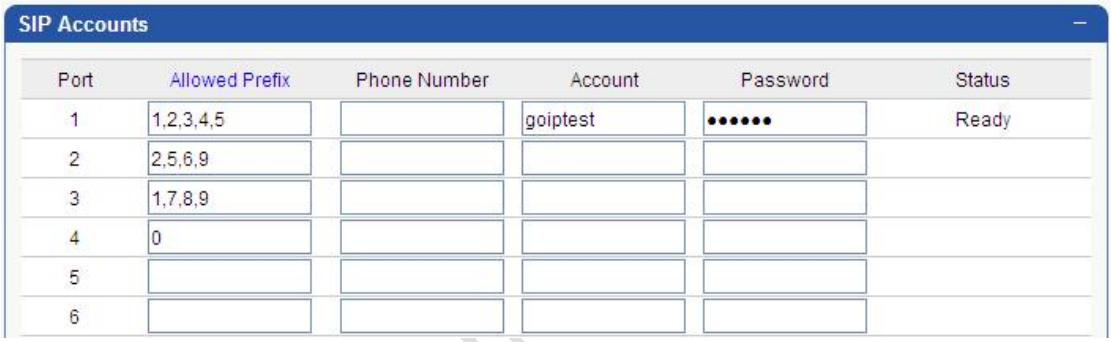


Fields are specified as following:

- Protocol Mode: Specify SIP client working mode. Option values are Registration/Point-to-Point/Multiple Port Support. If set to Registration, SIP client will send registration messages to SIP server. If set to Point-to-Point, o nly can let the input server IP traffic, if multiple IP, can increase in the phone book. If set Multiple Port Suppor, specify whether support to register to SIP server with different SIP Account, input in “SIP Accounts”.
- Encryption Mode: Specify the encryption method for messages between SIP server and SIP client.
- Account: Specify the SIP account for registration.(Please add account on the Softswitch)
- Password: Specify the SIP password for registration.
- SIP Server: Specify the domain or IP of the SIP Server.
- SIP Server Port: Specify the port of the SIP Server.
- Primary Proxy IP: Specify the primary proxy IP.(Use this need to install proxy server in your server, please contact YX NOC)
- Secondary Proxy IP: Specify the secondary proxy IP.
- Expiration Period: Specify the expiration period for registration.

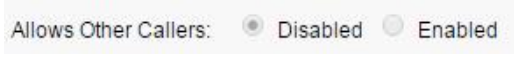
- Local Port: Specify the local port used to register to SIP server.(You can usually change as needed to prevent port conflicts)
- Use Phone Number: Specify whether enable phone number registration or not. If set to Enabled, the Phone Number and Account can be different when registering to SIP Server. If set to Disabled, the Phone Number must be the same as the Account when registering, otherwise, the registration will fail.
- Receive All Call: Specify whether enable to receive all calls or not.
- Drop Account Prefix: Specify whether enable drop account prefix. If set to enabled, it will remove the account prefix presented in callee number.
- Auto Resp 183: Specify whether enable auto resp 183 or not. If set to enabled,it will send 183-session-progress immediately for a incoming invite.(Note: Unless necessary, do not disable this setting)
- Route By From: Please refer to the following phone number description
- Route Mode: In-Turn: Select the port based on the free time Balance: The call data for each port is equally distributed Sequence: Select the port in the order of port number Random: Randomly select the port(Note: The device does not select the port that is in use)

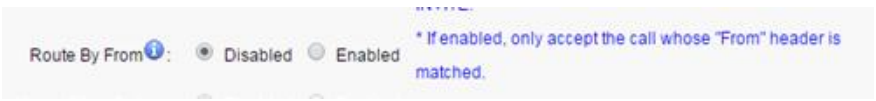
The screenshot below shows the operation mode to SIP Accounts(Different ports can be set as needed):



- Allowed Prefix: If empty, all prefixes can pass; If the input values, only allow input the prefix, if multiple prefix, separated by commas.

If a default Phone Number, Account and Password is already set in Guider->Initial Setting page, all the inputs here can be left empty and the default setting will apply to all the SIP accounts. For example, if an account “GPtest” is set with password “888888” in Guider->Initial Setting page and all the SIP accounts here are left empty, the combination of test and 888888 will be used for all SIP accounts to register to SIP Server. When the gateway register on the server successfully, the status will show ready. If you turn on the following settings, make sure your caller's number is the same as the Phone Number ,But you also can try open this set





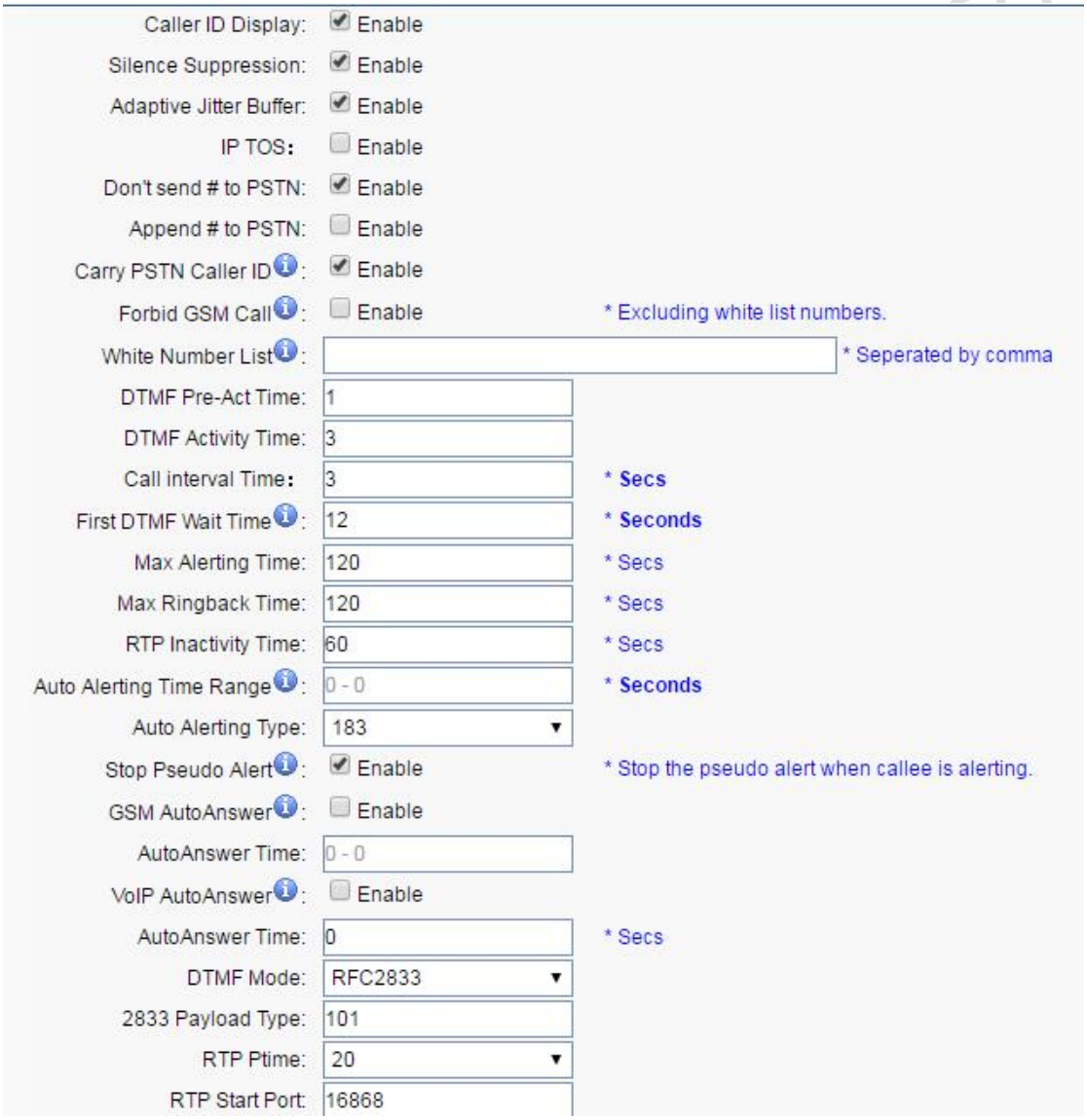
The screenshot below shows the operation mode to set STUN

STUN is a standardized set of methods and a network protocol to allow an end host to discover its public IP address if it is located behind a NAT. It is used to pemit NAT traversal for applications of real-time voice, video, messaging, and other interactive IP communications.

If you have the STUN server,enable STUN support,fill the server ip and port(default port is 3478), it will work.

MNP If you need to enable the MNP function, you can set as needed.

The screenshot below shows the operation mode to set application feature：

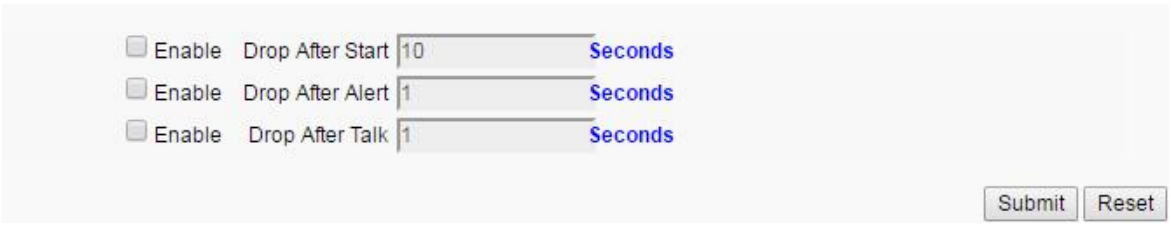


The fields are specified as following:

- Caller ID Display: Specify whether enable Caller ID Display or not.
- Silence Suppression: Turn on to save bandwidth , If you do not need to be able to shut down
- Adaptive Jitter Buffer: Specify whether enable Jitter Buffer or not.

- IP TOS: Specify whether enable IP TOS or not.
- Don't send # to PSTN: Specify whether need to remove the last digit # to PSTN if the last digit of numbers is #. If set to Enable, the last # will be removed.
- Append # to PSTN: Specify whether need to send an extra # to PSTN after the normal digital numbers are sent.
- Carry PSTN Caller ID: Specify whether need to carry PSTN caller ID to system.
- Forbid GSM Call: Specify whether need to prevent the PSTN incoming call. If set to enable, any of the incoming calls whose callerid is not in the white list specified in White Number List will be prevented.
- White Number List: Specify a caller number list separated by comma. It is used in combination with Forbid GSM Call to let the specified caller pass through and continue the incoming call flow if Forbid GSM Call is set to Enable.
- DTMF Pre-Act Time: Specify the DTMF Pre-Act Time.
- DTMF Activity Time: Specify the DTMF activity time.
- Call interval Time: Here set in the same port, the minimum call interval(Recommended 0-5s, If it takes longer, please use the automation setting)
- Max Alerting Time: Specify the max alerting duration.
- Max Ringback Time: Specify the max ringback duration.
- Max Call Duration: Specify the max call duration. System will hang up the call automatically if the call duration reaches this value.
- RTP Inactivity Time: Specify the max duration of silence from gateway. System will hang up the call automatically if the silence duration reaches or exceeds this value.
- GSM Call AutoAnswer: Specify whether need to auto-answer the call which is from GSM. If set to Enable, AutoAnswer Time can be used to specify the delay to automatically answer the incoming GSM call.
- VoIP Call AutoAnswer: Specify whether need to auto-answer the call which is from IP network. If set to Enable, AutoAnswer Time can be used to specify the delay to automatically answer the incoming IP call.
- DTMF Mode: Specify the DTMF mode Option values are RFC2833/Inband/SIP INFO.
- RFC2833 Payload Type: Specify the RFC2833 DTMF Payload Type. Only valid when DTMF Mode is set to RFC2833. The default value is 101.
- RTP Ptime: Specify the interval of RTP packages.
- RTP Start Port: Specify the RTP start port.
- The following settings unless necessary, do not change

- Auto Drop : You can set up to automatically hang up the call

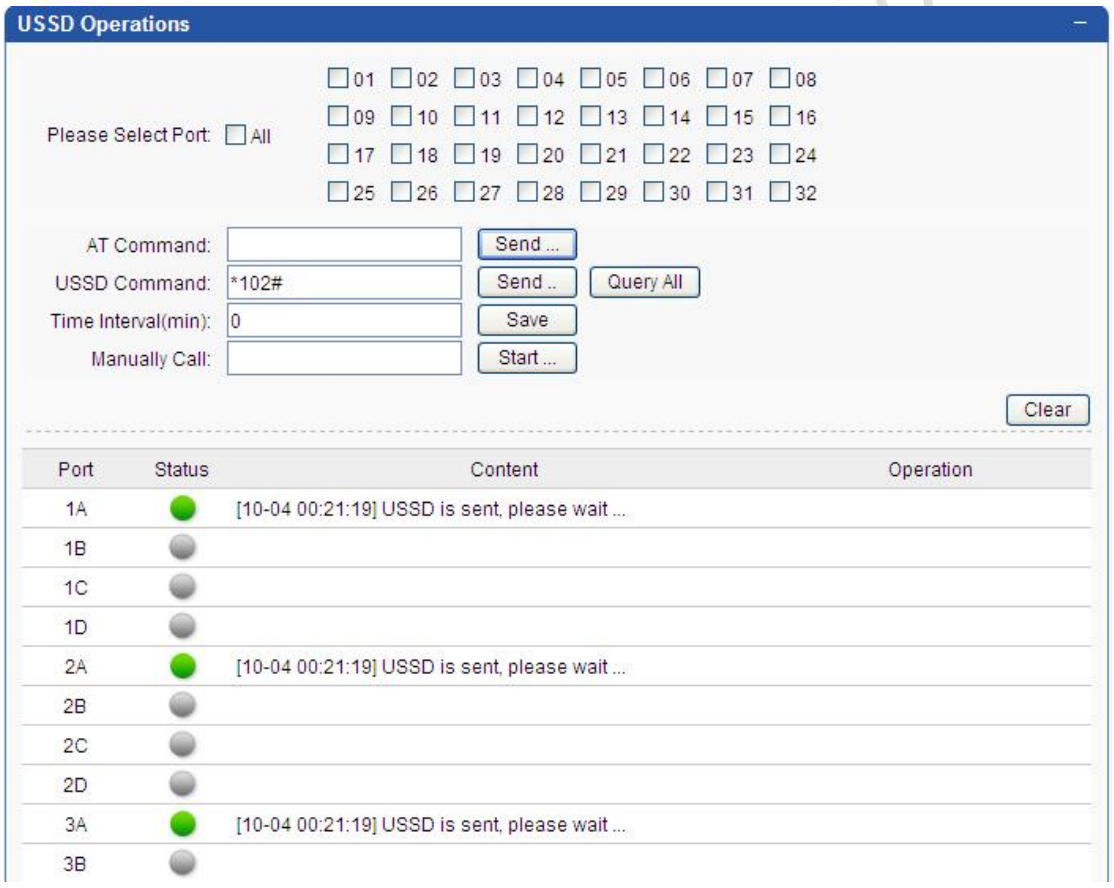


When enabled, the call automatically hangs up within a set period of time , This set takes effect for all ports

7.4 Port Setting

7.4.1 USSD Operations

The screenshot below shows the operation mode of USSD operation to GP Gateway.



Fields are specified as following:

- Select port: Choose some or all port to execute AT or USSD command.
- At Command: You can enter AT command then execute to the port which you select.
- USSD Command: Enter USSD query command.
- Time Interval: Query balance regularly.
- Manually Call: Manually input a number, let the sim card mark a call

7.4.2 Base Settings

The screenshot below shows the operation mode to set Basic Settings of Port settings

It's for choosing the frequency(Auto/2G/3G/4G) band and whether register type(Voice/Data), VoLTE enabled or not(Auto/Disabled/Forced). When the gateway can't detect the SIM and you sure the install SIM is right, we need to enable Unnormal SIM Support.

7.4.3 Hardware properties

The screenshot below shows the operation mode to set Hardware properties.

The columns are specified as following:

- Port No: The GP Gateway mobile port. Each port contains one or four card slots. Port No starts from 1 to 64.
- Type: Values are GSM/CDMA/WCDMA. (According to your module.)
- Disable: Specify whether enable or disable this port.
- Bind SIM Card: The SIM card that not bind will be locked by gateway.
- Input Volume: Specify the input voice volume of this port.
- Output Volume: Specify the output voice volume of this port.
- Balance: Shows the current balance of sim card
- Operations:
  - Restart: Restart the module
  - More:
    - Hot-line: Specify a sip phone on the softswitch to pick up the incoming calls

✧ Unconditional Forward/ No Answer Forward Number/ Busy Forward: These parameters are designed to be used with a third party system.

7.5 Basic Station(3G/4G devices do not have this function)

7.5.1 Basic Settings

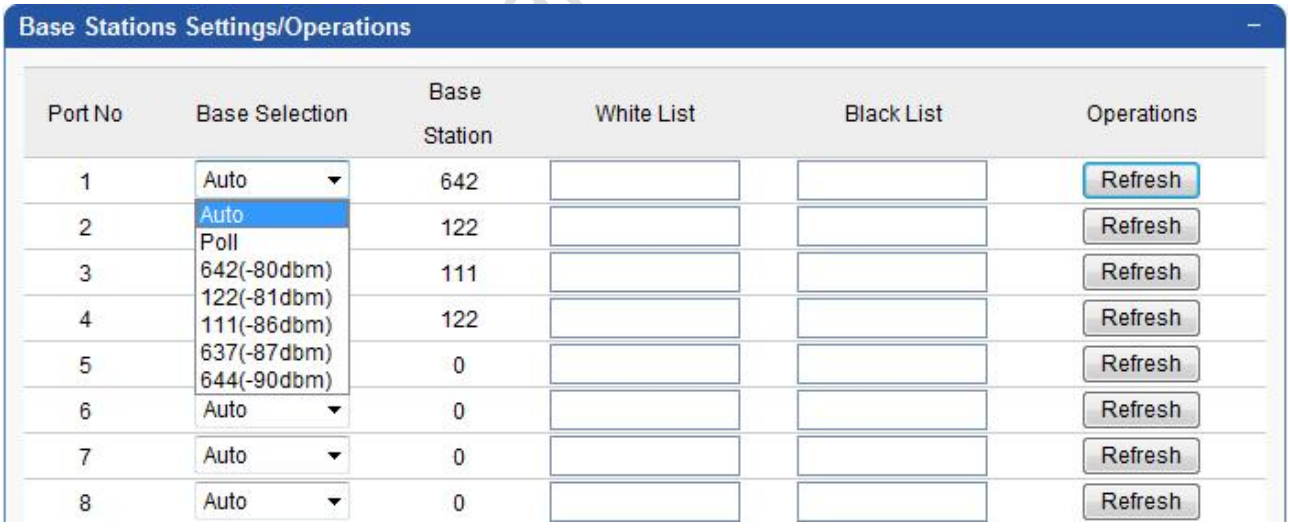
The screenshot below shows the operation mode to set globally for base settings.

Fields are specified as following:

- Max Channels: Specify the max base stations
- Lowest Valid Signal: Specify the lowest valid signal
- Switch period: Specify the period of switching base station
- Base Balancing: Specify whether enable base balancing, we suggest disable it.

7.5.2 Base stations Settings/Operations

The screenshot below shows the operation mode to set base stations settings and operations

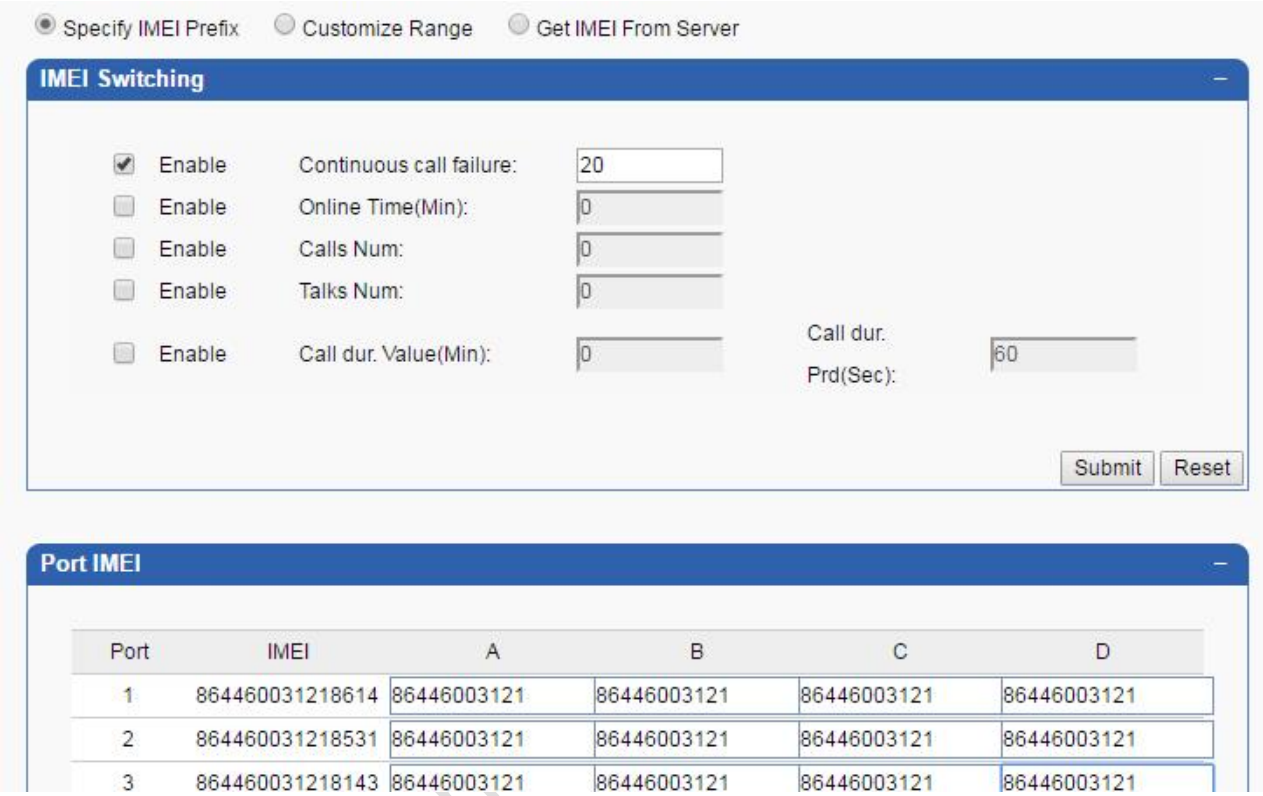


- Port No: The GP Gateway mobile port. Each port contains one or four card slots. Port No. starts from 1 to 4/8/16/32/64.
- Base Selection: the default base selection mode is auto which makes the devices to choose mobile base automatically, if you want to switch base station periodically, pleasure select Poll, and you can set the switch period.
- Base Station: The current using of base station.
- White List: Specify the white list of base station, can be multiple, use a comma.

- Black List: Specify the black list of the base station, can be multiple, use a comma.
- Operations: When click the refresh button will change a new base station.

7.6 IMEI Setting

Specify IMEI Prefix: The screenshot below shows the operation mode to set IMEI for each card inserted in GP Gateway SIM slot.

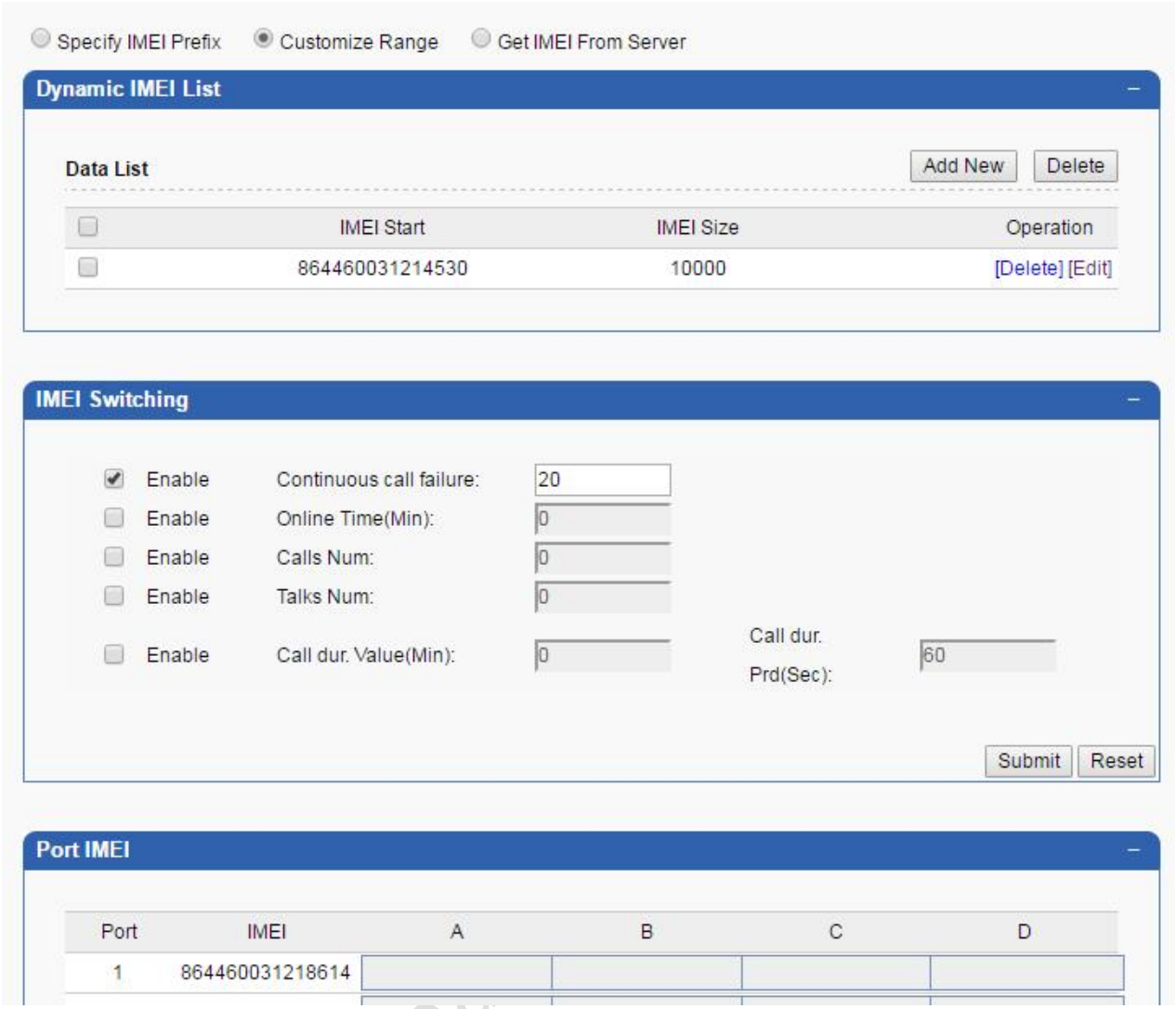


IMEI Switching: IMEI switching conditions can be set here, you can automatically change the IMEI when needed

Port IMEI: You can fill IMEI in the corresponding SIM card slot. IMEI a total of 15 figures, including the custom 14 and one last check code, you can fill in the 14 numbers, the check code will automatically fill complete. You can also fill in less than 14, the device will automatically fill in other numbers, which is automatically change IMEI in accordance with the prefix IMEI.

The specified IMEI, instead of the default IMEI of the card, will be used for the corresponding card to communicate with mobile base.(Set IMEI here will take effect immediately)

Customize Range: The screenshot below shows the operation mode to set Dynamic IMEI for each card of the designated port. If a card on a port is assigned with a group of IMEIs, it will randomly use any of the IMEI in group to communicate with mobile base.



Add New

Click button Add New to expand the data input area to add new data. Fields are specified as following:

- Data Status: Mark the status of current data record. Option values are Add/Edit. Value Add means the data is new while value Edit means the data is old.
- IMEI Start: Specify an initial IMEI value for the IMEI group, You need to enter the first 14 digits of the IMEI. The device will automatically complete the last check digit, and randomly generate IMEI from this IMEI begin.
- IMEI Size: Specify the number of IMEI backwards generated from the beginning

Click button Submit on the right to save the new data record.

Edit

All the records are displayed in list. Two operations are provided on the right of each record. Click Edit to expand the current data record to Data Detail Area which is above the Data List.

Click button Submit on the right to save the old data record.

Delete

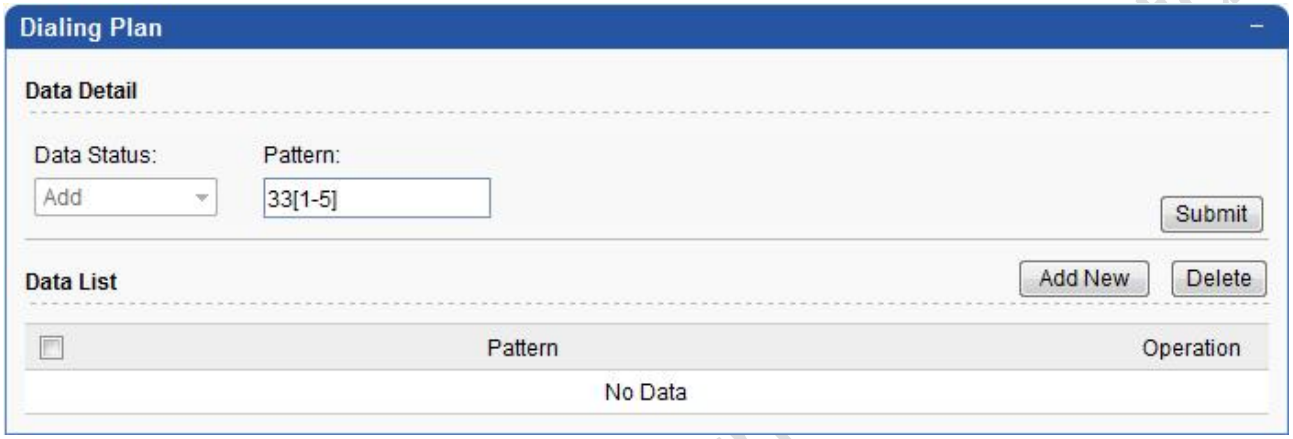
Click Delete on the right of each record to delete the current record. A message box will be popped for delete confirmation.

Get IMEI From Server: Get IMEI from server, needs to be used with SIM Server and set on SIM Server

7.7 Rules Setting

7.7.1 Dialing Plan

The screenshot below shows the operation mode to set Dial Plan.



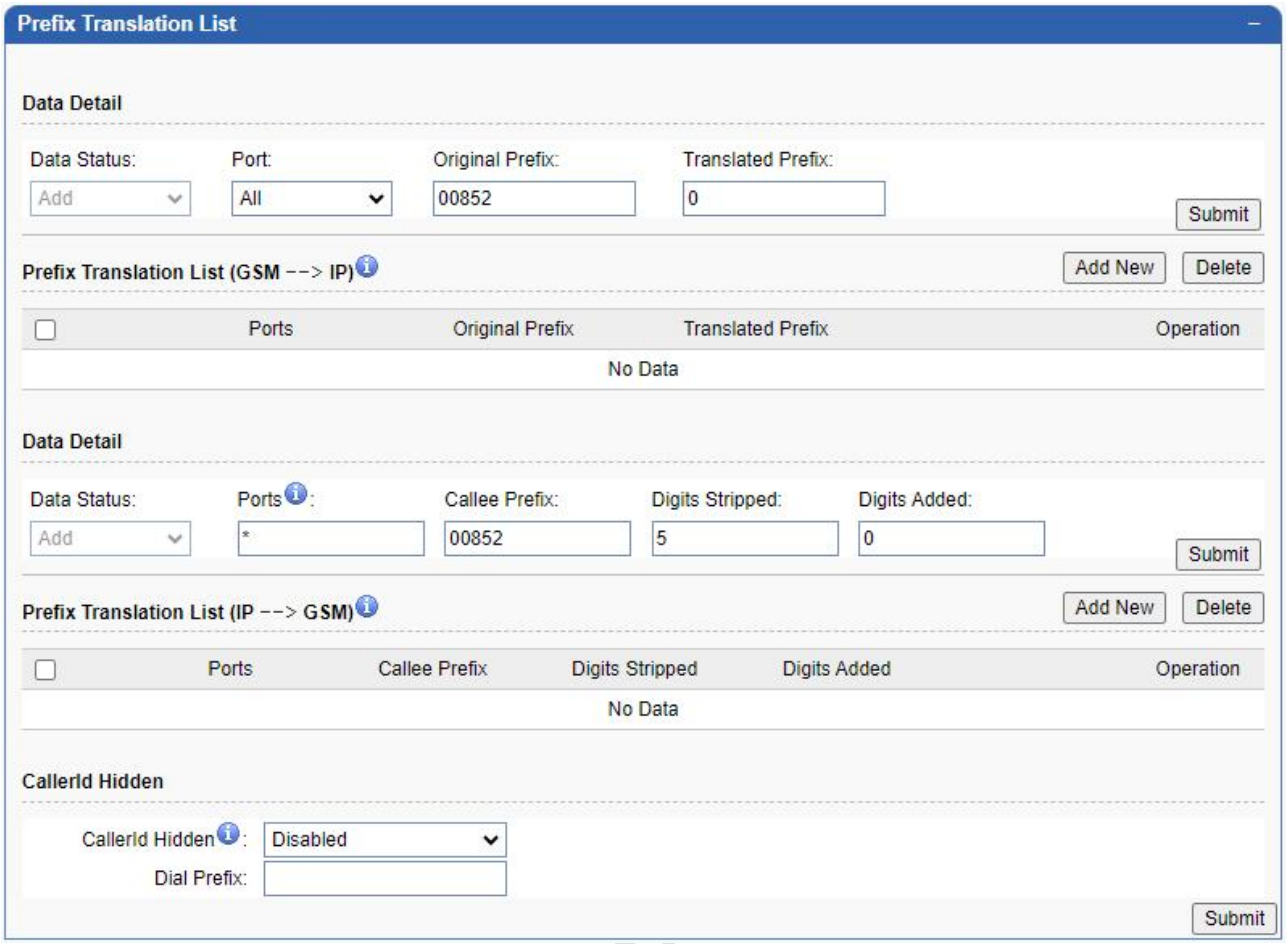
Dial Plan is a string which specifies digits and length of the digits of the dialed number. Generally, the pound sign # is used as the termination of number input for dialing. However, if patterns are specified and system detects the dialed number matches any of the patterns, it will stop collecting input and send out the collected number to dial even though no pound sign is encountered.

The dial plan string is a normal regular expression, for example:

The plan 33[1-5] means the dialed number starts with 33 and the last digit is any of 1/2/3/4/5. So any of the input 331, 332, 333, 334 or 335 is acceptable.

7.7.2 Prefix

The screenshot below shows the operation mode to set manipulation for dial prefix.



Fields are specified as following:

- Prefix: The original prefix in phone number.
- Manipulated Prefix: Specify the digits with which the value specified by Prefix will be substituted.

GSM-->IP

Take the value in screenshot as an example, the prefix 00852 in dialed number will be substituted with 0. That's to say, if 00852987654321 is input to dial, the final number dialed out is 0987654321. Note: the manipulation is executed after pattern is matched.

IP-->GSM

- Callee Prefix: Specify the callee prefix.
- Digits Stripped: Specify the digits which are stripped.
- Digits Added: Specify the digits which are added.

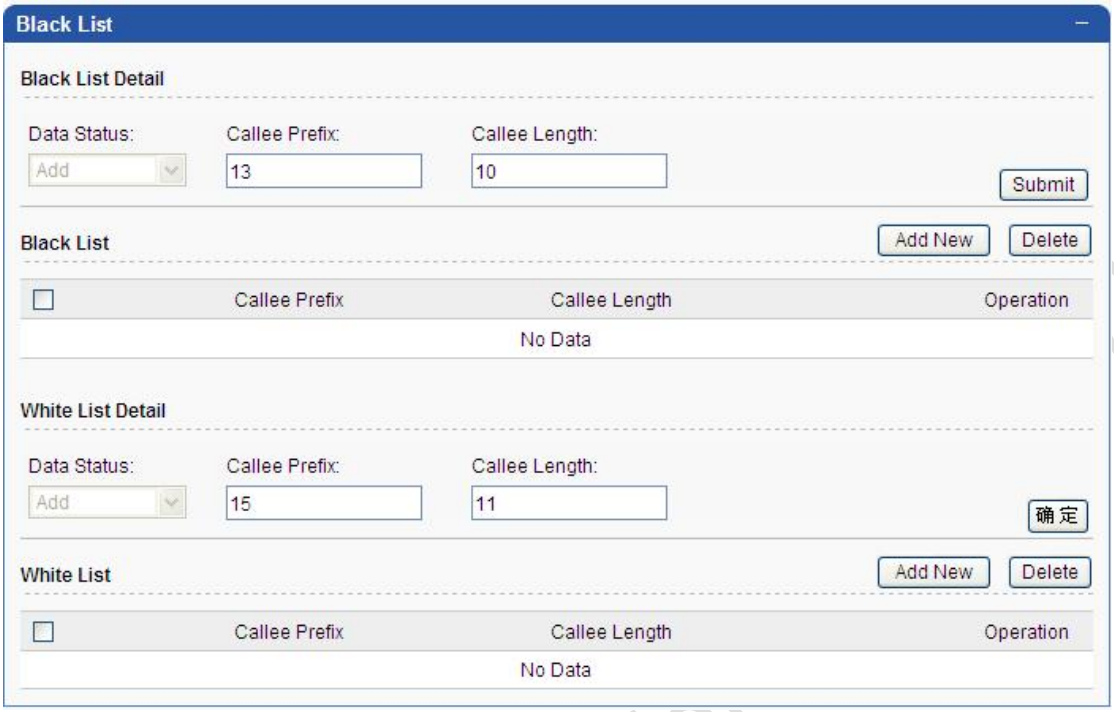
Take the value in screenshot as an example, the callee ID is 00852xxxxx, we specify 00852 as the callee prefix,strip 5 digits and add 0,when dial 00852123456789,the gateway will strip 00852 and add 0 call 0123456789.

CallerId Hidden

- CallerId Hidden:Enable or disable caller ID hidden.Your carrier must support that function.
- Dial prefix:Use the dial prefix you set when enable caller ID hidden.

7.7.3 Black list

Here set Black list or White list



Fields are specified as following:

- Callee Prefix: Specify the callee prefix of black list.
- Callee Length: Specify the callee length of black list.

7.8 SIM Settings

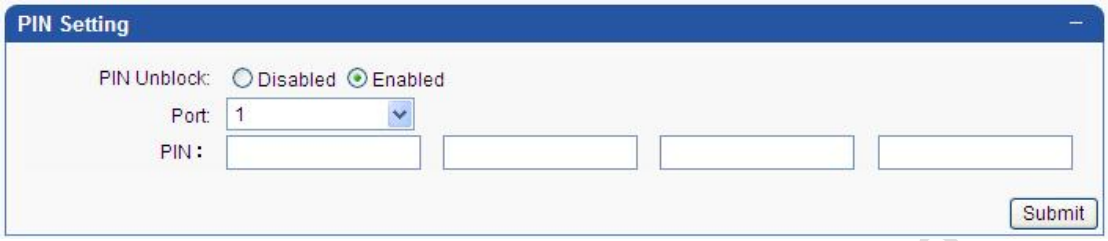
SIM Schedule

This function is used to set the SIM card usage policy, for example, As shown, it means that these SIM cards will be used between time: 00:00-8:30 .

7.9 Mobile Setting

7.9.1 PIN Setting

The screenshot below shows the operation mode to set globally for PIN settings

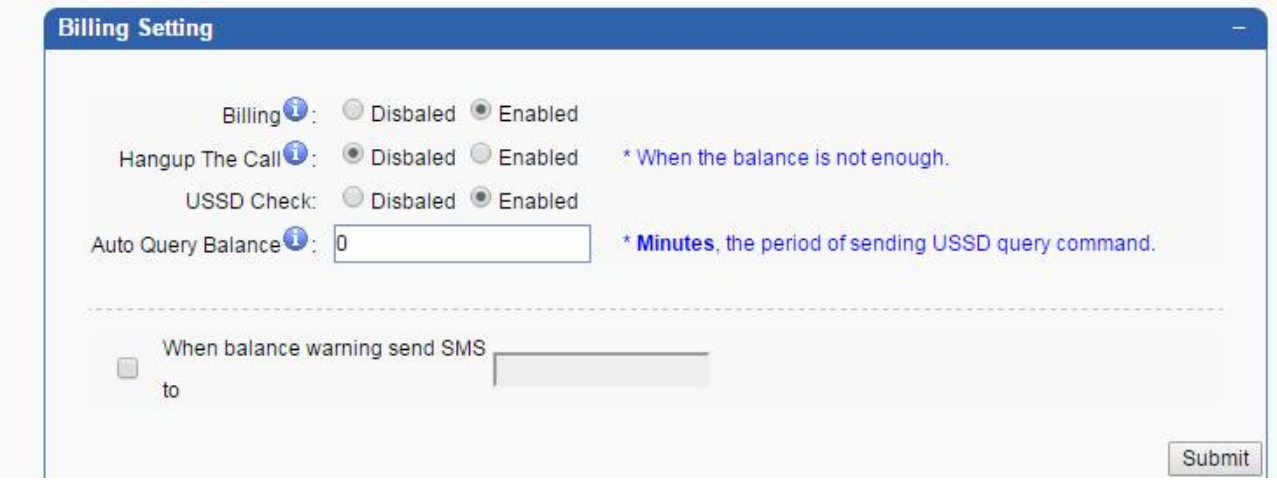


Fields are specified as following:

- PIN Unblock: Specify whether enable the pin unblock.
- Port: starts from 1 to 64
- PIN: Specify the PIN for card A/B/C/D/(more) of the port

7.9.2 Billing Setting

The screenshot below shows the operation mode to set GP billing. A smart billing server for mobile port is embedded in GP Gateway.

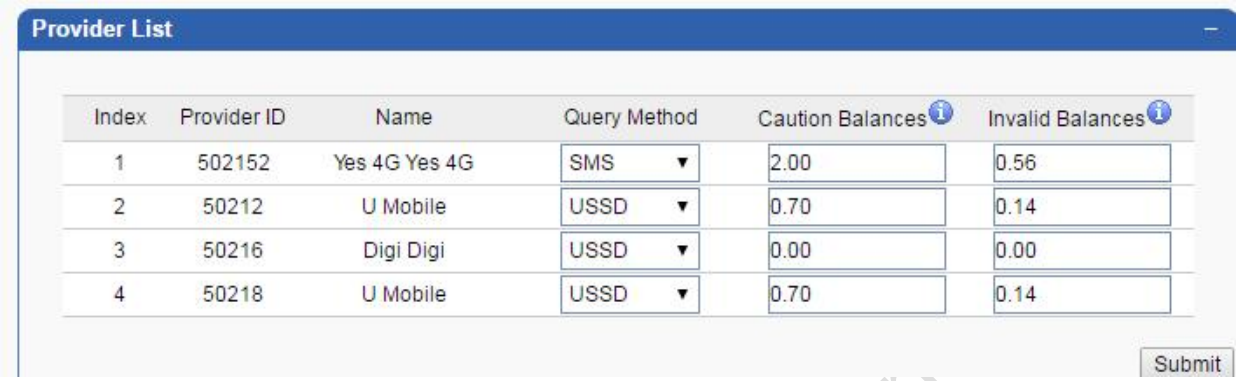


Fields are specified as following:

- Billing: Specify whether enable GP billing or not. If set to Enabled, system will bill the outbound calls for the port which has been assigned with billing tariffs.
- Hangup The Call: Specify whether enable hangup the call when balance is ont enough. When select enable, the call will be hang up immediately when run out of balance. But when you select disable the call will not be hangup.

- USSD Check: Specify whether enable to get balance through USSD check or not. This field takes effect only when GP Billing is set to Enabled.
- Auto Query Balance: Query USSD at fixed time intervals.

The screenshot below shows the operation mode to set Caution Balances, Invalid Balances and The provider ID is detected by GP Gateway automatically. For a new Gateway without any card inserted, there may be no records in the two lists.



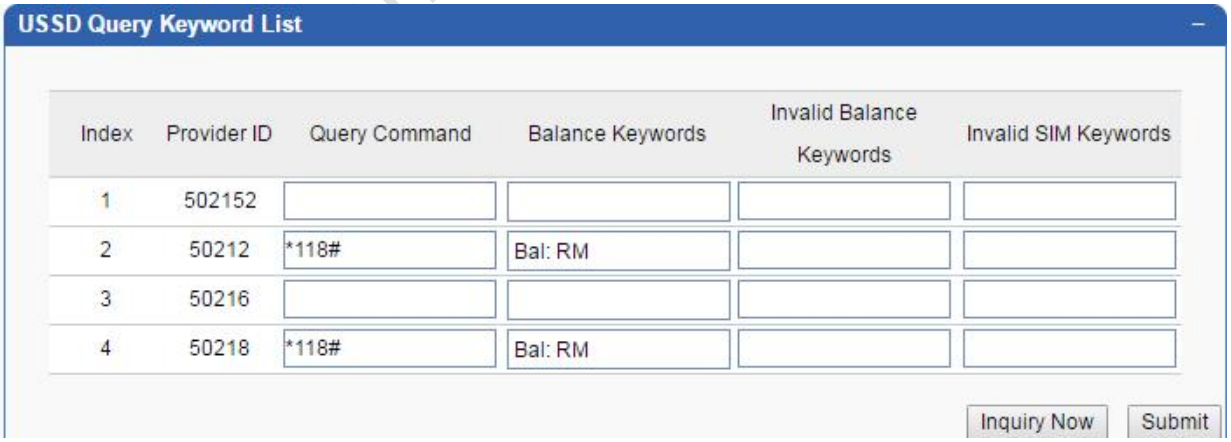
Provider ID: Carrier code, different operators can be set separately

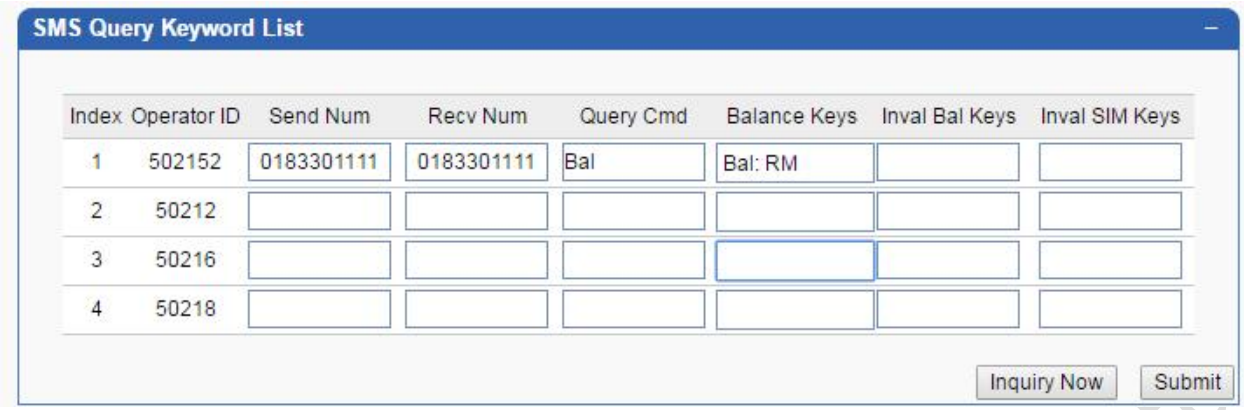
Query Method: USSD/SMS, If you set USSD, please set USSD Query Keyword List , If you set SMS, please set SMS Query Keyword List.

Caution Balances: The device calculates the balance automatically by billing, and when the forewarning balance is reached, the balance will be queried once to calibrate the balance(Usually set the balance of 1 minute)

Invalid Balances: Balance after calibration, the implementation of automatic calculation of the balance again, when less than the invalid value will lock, and prompts you(Usually set the balance of 1 minute)

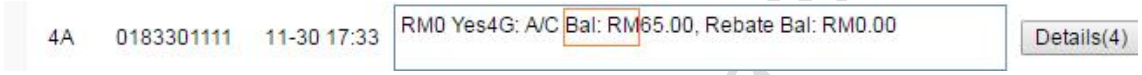
7.9.3 USSD/SMS Query Keyword List





Fields are specified as following:

- Provider ID: Carrier code, different operators can be set separately.
- Query Command: Specify the query command(If you do not know, please consult your operator)
- Balance Keywords: Please fill in the USSD or SMS sent query command, in the message returned by the operator, the front character of the balance value, As shown:



  The balance read will be displayed in the Call status, After setting, you need to save and reboot to take effect.
- Invalid Balance Keywords: If the device recognizes this keywords from USSD/SMS, it will lock the SIM card and prompt no balance.
- Invalid SIM keywords: If the device recognizes this keywords from USSD/SMS, it will lock the SIM card and prompt blocked by operator

7.9.4 Tariff List

The screenshot below shows the operation mode to set billing tariff.

Add New

Click button Add New to expand the data input area to add new data. Fields are specified as following:

- Data Status: Mark the status of current data record. Option values are Add/Edit. Value Add means the data is new while value Edit means the data is old.

- Destination Prefix: Specify the destination prefix used to bill call. If this prefix is best matched with a destination of an outgoing call from the port(s), the corresponding tariff will be chosen to bill the call. The prefix can be a regular expression. For example, [2-8] matches any phone number which starts with digit 2 to 8. And [0-9] matches all phone numbers.
- Tariff: Specify the tariff detail. In the picture, the tariff means 0.001 balance value will be deduct per 60 seconds.(Please fill in the actual use of the balance)

Click button Submit on the right to save the new data record.

Edit

All the records are displayed in list. Two operations are provided on the right of each record. Click Edit to expand the current data record to Data Detail Area which is above the Data List.
Click button Submit on the right to save the old data record.

Delete

Click Delete on the right of each record to delete the current record. A message box will be popped for delete confirmation.

Another shortcut button is also provided on the top right of Data List to delete multiple selected records in batch. A message box will be popped for confirmation of batch delete.

7.10 USSD Setting

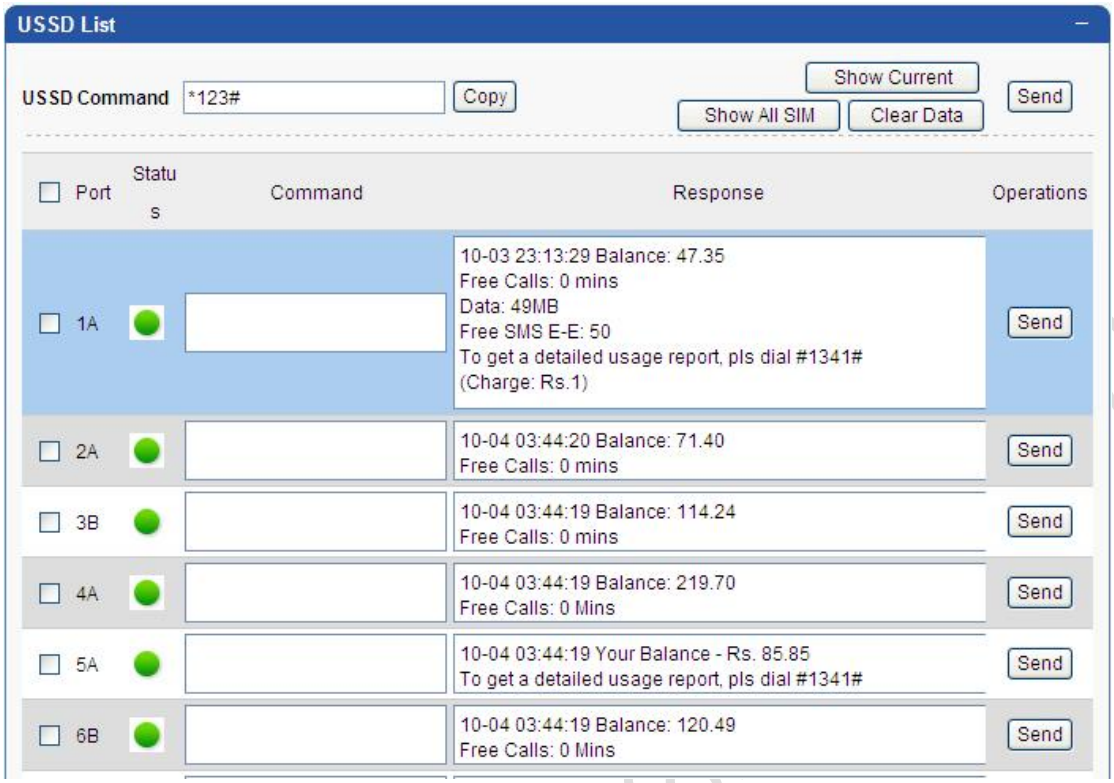
The screenshot below shows the operation mode to send USSD through the GP Gateway.

7.10.1 USSD Auto Send

Here set USSD can be automatically sent as needed(For example, you can customize a preferential voice package by automatic USSD)

By Dur.: Automatic timed send.
By Call Dur.: Automatic send according to the call time.
By Schedule1/2/3: Send USSD within the specified time.
Drop: When enabled, hang up calling automatically when conditions are met.

7.10.2 USSD List



Fields are specified as following:

- USSD Command: The value of the USSD
- Port: Select tick to need send USSD ports
- Response: Show respond to the content of the carrier
- Send: Press this button, will start sending USSD

7.11 Automation

7.11.1 Scheduled Sending SMS

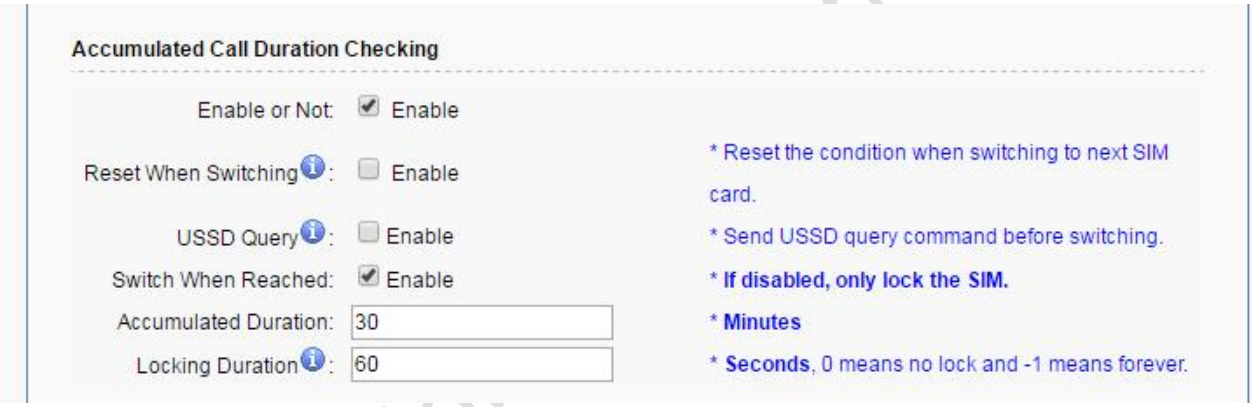
SMS Warning: A SMS warn the gateway manager to check the SIMs when they are locked(Not mobile operator blocking, it's the politic schedule to limit the SIM use time, use frequency to avoid blocking).

7.11.2 SIM Online Time Checking

Drop Call: Enabled, the online time to meet the conditions, immediately hang up. Not enabled, it will wait for this call done.

Locking Duration: Here to set the card slot lock time, fill -1 means always locked that when you manually replace the SIM card will reset

7.11.3 Accumulated Call Duration Checking



Reset When Switching: If enable, it meaning of this setting is that when other rules take effect and the card is switched over, this rule data of this card will be retained

USSD Query: Before switching the card to execute the query balance command, you need to set the balance query command in mobile setting

Switch When Reached: if enable, When the rule is reached, switch to the next SIM card

The condition parameter(Accumulated Duration: which means the maximum talk time, unit: min)

Locking Duration: Here to set the card slot lock time, fill -1 means always locked that when you manually replace the SIM card will reset

7.11.4 Accumulated Connected Calls Checking

Reset When Switching: If enable, it meaning of this setting is that when other rules take effect and the card is switched over, this rule data of this card will be retained

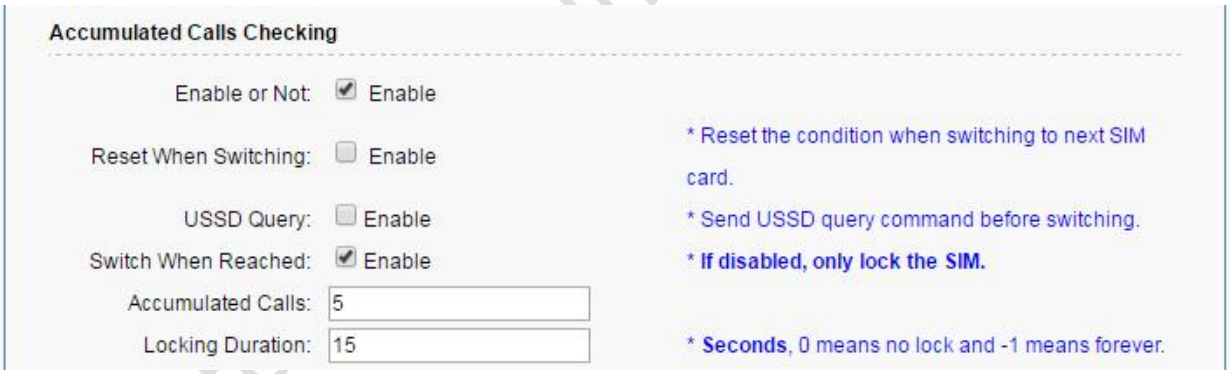
USSD Query: Before switching the card to execute the query balance command, you need to set the balance query command in mobile setting

Switch When Reached: if enable, When the rule is reached, switch to the next SIM card

The condition parameter(Connected Calls)

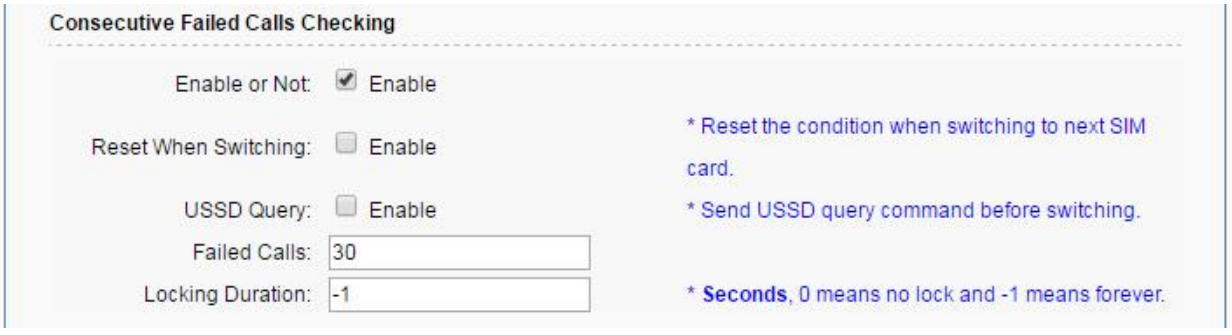
Locking Duration: Here to set the card slot lock time, fill -1 means always locked that when you manually replace the SIM card will reset

7.11.5 Accumulated Calls Checking



Please refer to 7.11.4 for instructions

7.11.6 Consecutive Failed Calls Checking



Failed Calls: This is only valid if a consecutive call fails

Other : Please refer to 7.11.4 for instructions

7.11.7 Consecutive No-Alert Calls Checking

No-Alert Calls: This is only valid if a consecutive No-Alert Calls

Other : Please refer to 7.11.4 for instructions

7.11.8 Consecutive No-Answer Calls Checking

No-Answer Calls: This is only valid if a consecutive No-Answer Calls

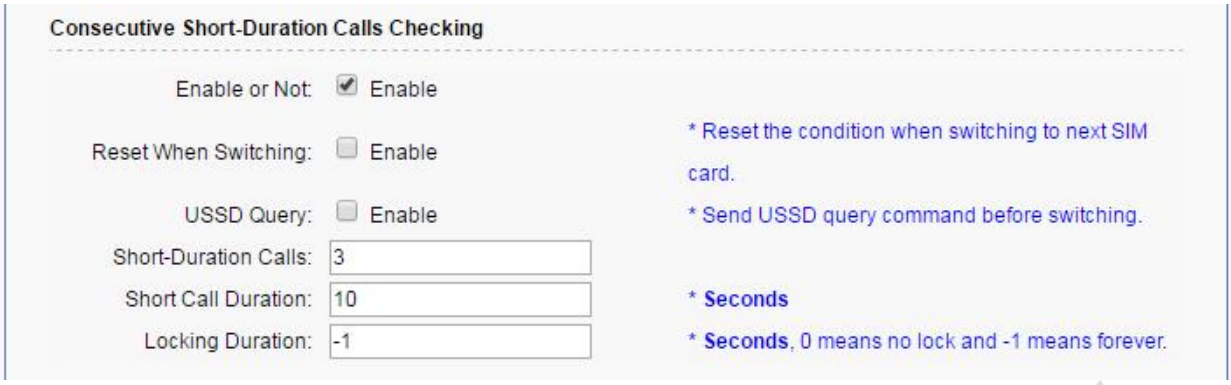
Other : Please refer to 7.11.4 for instructions

7.11.9 Consecutive No Carrier Calls Checking

No Carrier Calls: This is only valid if a consecutive No Carrier Calls(This condition refers to the call failed, probably due to poor or unstable signal quality)

Other : Please refer to 7.11.4 for instructions

7.11.10 Consecutive Short-Duration Calls Checking



Short-Duration Calls: This is only valid if a consecutive Short-Duration Calls

Short Call Duration: Here you need to fill in the time, the contact time is lower than it, the device will think it is Short-Duration Calls

Other : Please refer to 7.11.4 for instructions

7.11.11 Consecutive Fast-Alerting Calls Checking

Fast-Alerting Count: This is only valid if a consecutive Fast-Alerting Count

Max Alerting Time: Here you need to fill in the time, the contact time is lower than it, the device will think it is Fast-Alerting.

Other : Please refer to 7.11.4 for instructions

7.11.12 Consecutive Fast-Answer Calls Checking

Fast-Answer Count: This is only valid if a consecutive Fast-Answer Count

Max Answer Time: Here you need to fill in the time, the contact time is lower than it, the device will think it is Fast-Answer.

Ignore the response signal: Here you can set the need to shield the response time, when the Fast Answer appears, automatically ignore some of the answer time for the complete avoidance of IVR billing. (Please set according to the charging duration of IVR charging)

Other : Please refer to 7.11.4 for instructions

(Note: This can be used to reduce or prevent the appearance of FAS)

7.11.13 Consecutive GSM Release Cause Checking

Release Cause Code: You can look through the call status screen and get a special hang-up reason code that appears when the SIM card becomes unavailable, When you confirm that this code appears means that the card can not be used, you can set it here

Release Cause Times: This is only valid if a consecutive Release Cause Times

7.11.14 Accumulated SMS Count Checking

Accumulated SMS Count: The card that is in use takes effect when the number of issued SMS reaches this value

Other : Please refer to 7.11.4 for instructions

7.11.15 Accumulated Failed SMS Count Checking

Failed SMS Count: The card in use takes effect when the cumulative number of SMS failures has reached this value

Other : Please refer to 7.11.4 for instructions

7.11.16 Consecutive Failed SMS Count Checking

Consecutive Failed SMS: This is only valid if a consecutive Failed SMS

Other : Please refer to 7.11.4 for instructions

7.11.17 Accumulated Received SMS Count Checking

This function locks the SIP card after receiving the text message with the specified content sent by the specified number, for example, lock the SIM card according to the prompt message of insufficient balance!

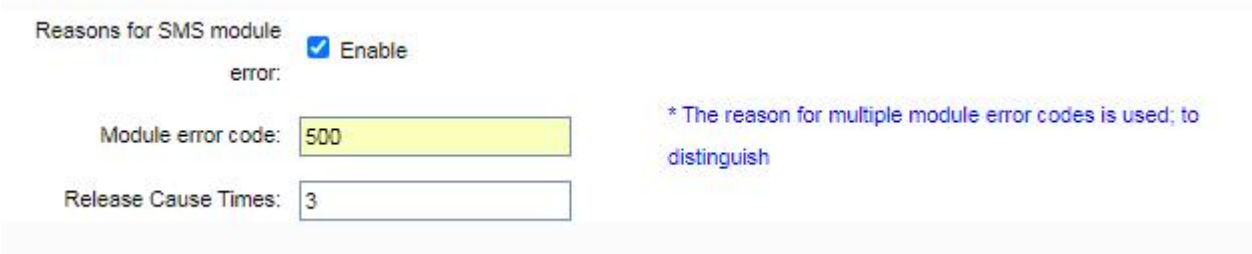
Accumulated Received SMS Count:Number of SMS received

SMS Content Keywords:The keyword of the SMS content, the SMS with this content will be considered to meet this condition!

SMS sending number:It must be the text message sent by this sender to identify the SMS content

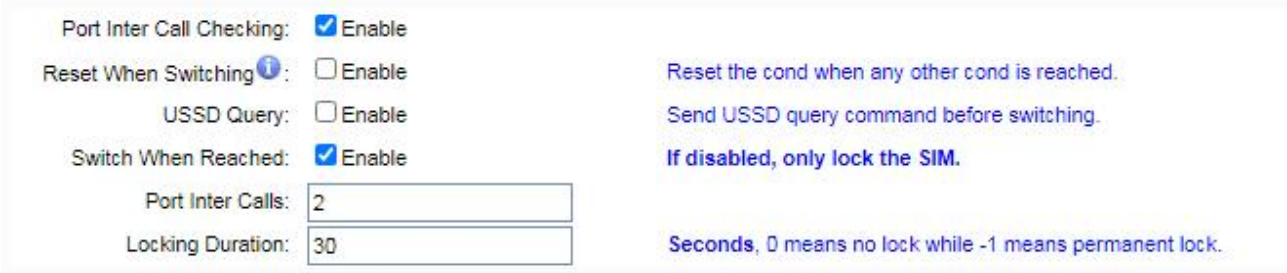
Other : Please refer to 7.11.4 for instructions

7.11.18 Reasons for SMS module error



Module error code: When the error code is returned for the specified number of times during the sending of the SMS, the SIM will be locked!

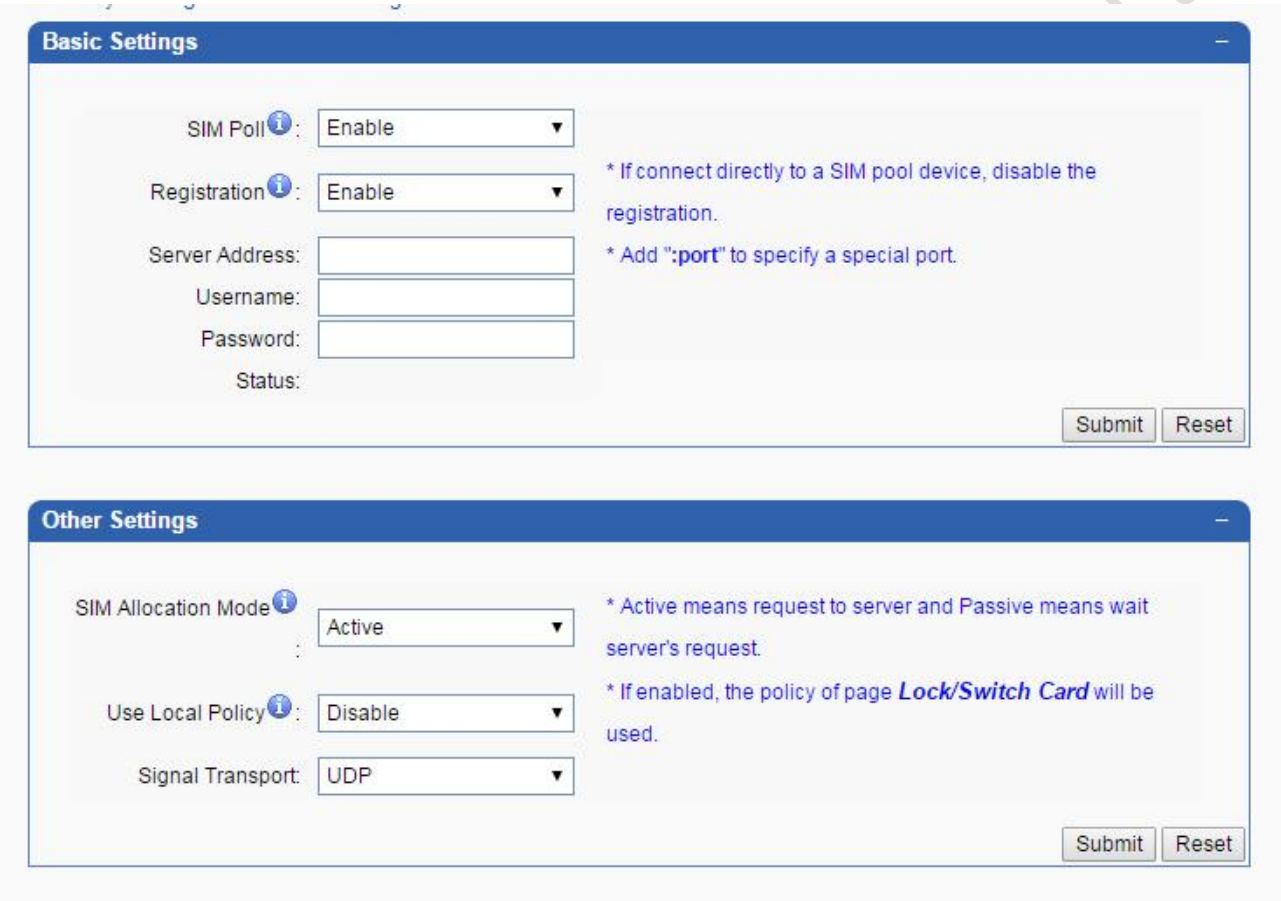
7.11.19 Port Inter Call Checking



This function is used to detect the number of times the ports hit each other, lock or lock and switch SIM cards when the conditions are met !

7.12 SIM Pool Setting

The setting here is to allow the device to run on the SIM card that receives the SIM card (the SIM card is no longer required on the GP). SIM card installed on SIMBANK. SIMBANK through the Internet SIM card will be transferred to the use of GP. GP and SIMBANK can be used across countries and
regions.

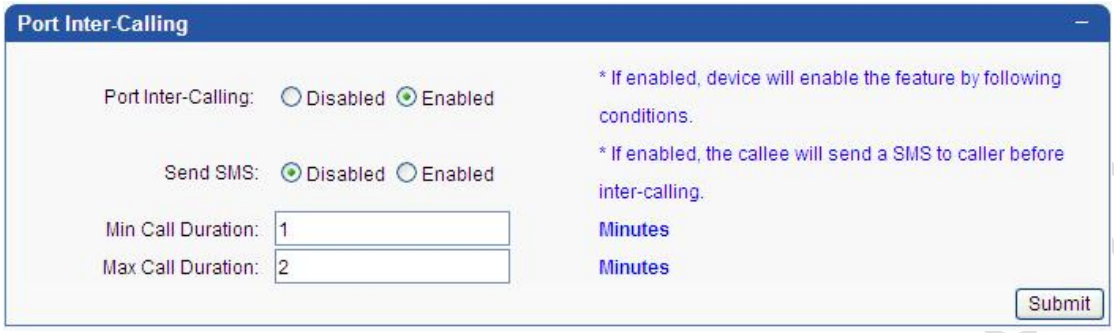


Registration: This means registering with the SIM server
Server Address: Please enter the SIM Server server IP
Username: Please fill in the account from SIM Server
Password: Please fill in the Password from SIM Server
Status: If the registration is successful, it will prompt ok
SIM Allocation Mode: Active mean that GP voluntarily applied for a SIM card to SIMServer / SIMBANK
Use Local Policy: When enabled, the settings for GP Automation will take effect, and the Automation settings will be obtained from SIMServer when disabled
Signal Transport: When UDP is unstable, you can try TCP

7.13 InterCall Setting

7.13.1 Port Inter-Calling

The screenshot below shows the operation mode to set globally for port inter- calling.



Fields are specified as following:

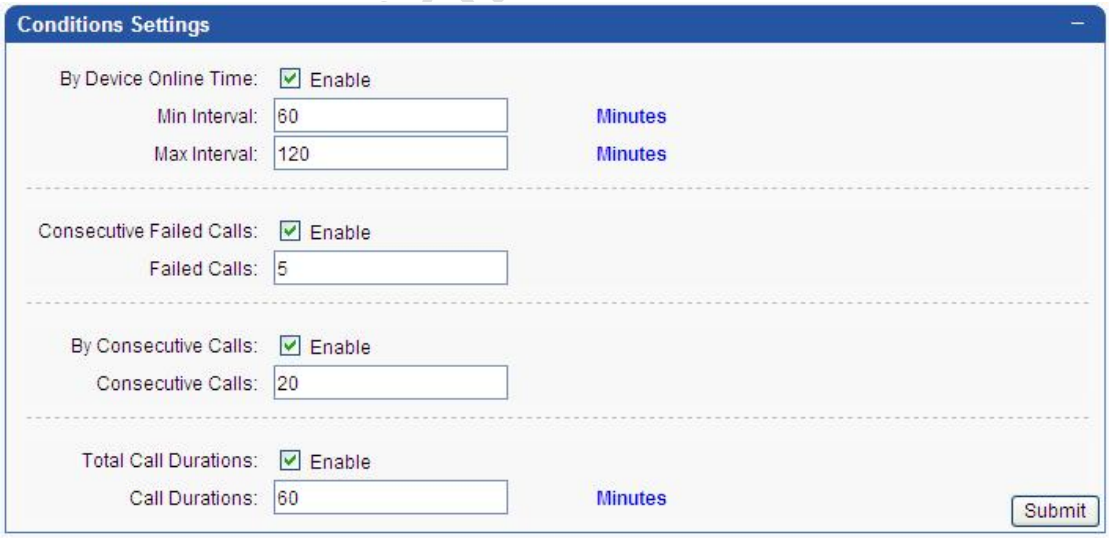
- Port Inter-Calling: Specify whether enable port inter-calling.
- Min Call Duration: Specify the minimum call duration.
- Max Call Duration: Specify the maximum call duration.

This panel allow SIMs in the gateway to call each other randomly. Consider that SIMs inside only call out all the time, so it's easy to be judged as an illegal use.

When enable "Port Inter-Calling", every SIM can receive income call in period which is custom option in "Conditions Settings".

7.13.2 Conditions Settings

The screenshot below shows the operation mode to set conditions settings of port inter-calling.



Fields are specified as following:

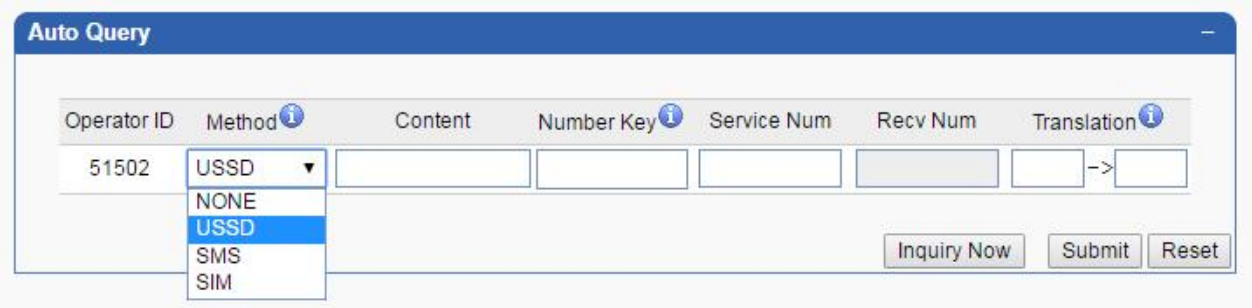
- By Device Online Time: Gateway will start port inter calling by the device online time, and the time between min interval and max interval.
- Consecutive Failed Calls: Gateway will start port inter calling when reaches the consecutive failed calls.

- By Consecutive: Gateway will start port inter calling when reaches the consecutive calls.
- Total Call Duration: Gateway will start port inter calling when reaches the call duration.

According to the actual situation, input the reasonable numerical.

7.14 SIM Num Settings

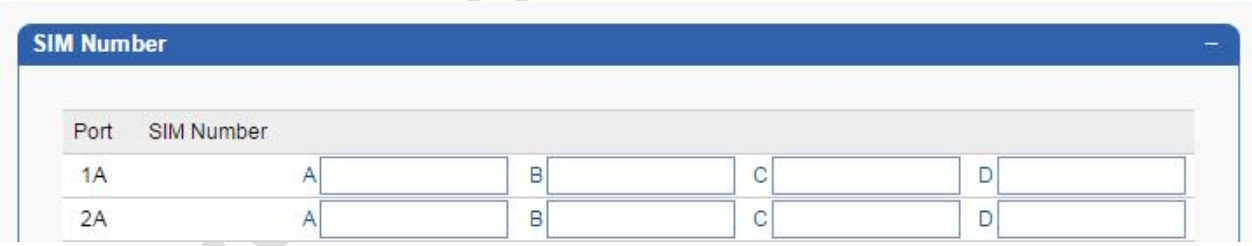
The screenshot below shows the operation mode to get Local Number by USSD



Fields are specified as following:

- Method: when enable it, gateway will get the SIM number by USSD command/SMS command /SIM storage
- Content: Specify the USSD command/SMS command for querying SIM number.
- Number Key : Here to fill in the SIM card number in front of a few characters (Please refer to the mobile settings inside the balance query keyword setting method)
- Prefix Translation: change the SIM number prefix(You can remove the country code, the device is displayed as local number).

The screenshot below shows the operation mode to set local number manually.(If the above methods are unable to obtain the number, you can also manually enter the number here)

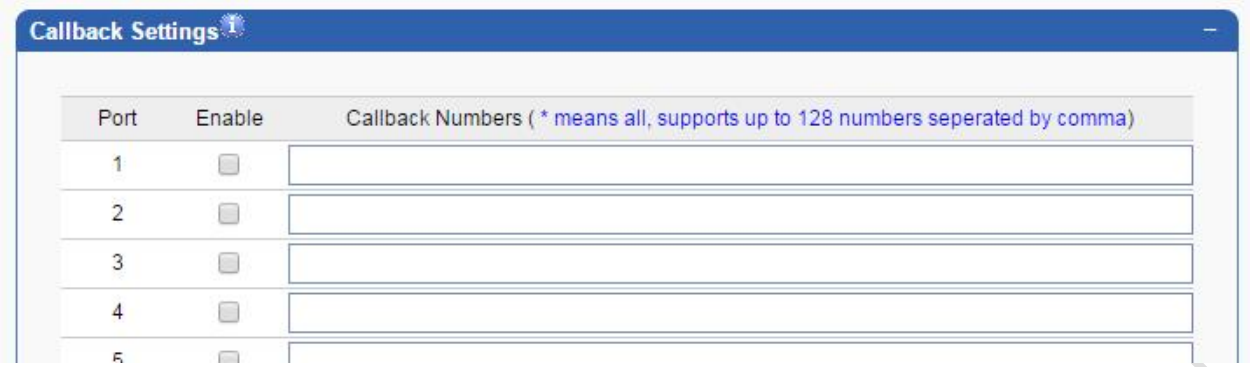


Fields are specified as following:

- Port No: The GP Gateway mobile port. Each port contains one or four card slots. Port No starts from 1 to 64.
- Number A: Specify the number for card A of the port
- Number B: Specify the number for card B of the port
- Number C: Specify the number for card C of the port
- Number D: Specify the number for card D of the port
- Number More..

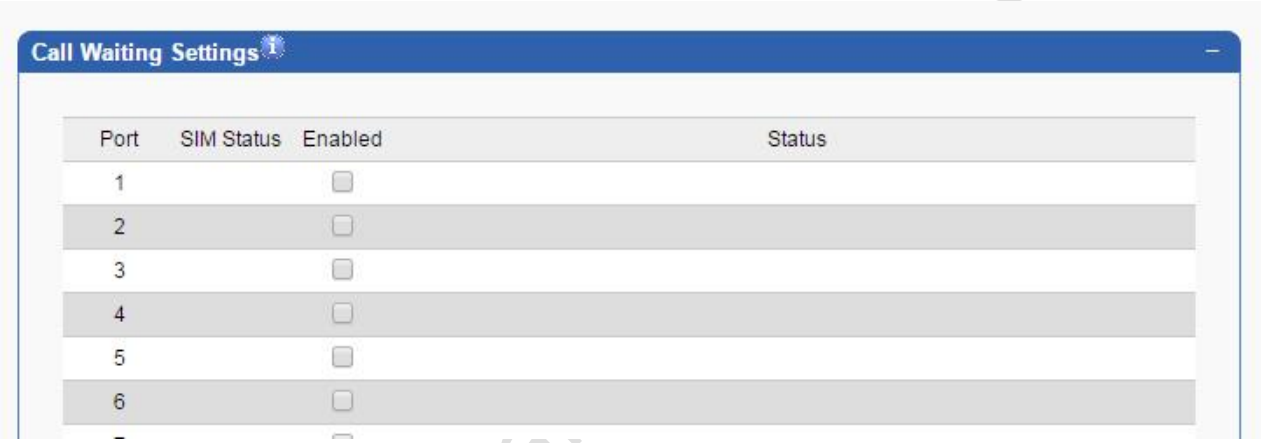
7.15 Callback Settings

Set here, when the device receives a call, you need to return the number of the call



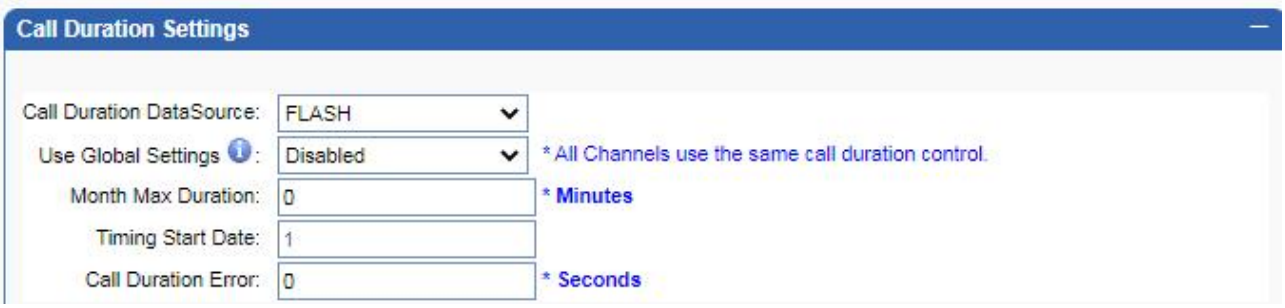
7.16 Call Waiting Settings

Here, when the SIM in the device is calling, there is a GSM phone incoming, and the operator will prompt the caller to wait(This is the same as the call waiting in the phone)



7.17 Call Duration Settings

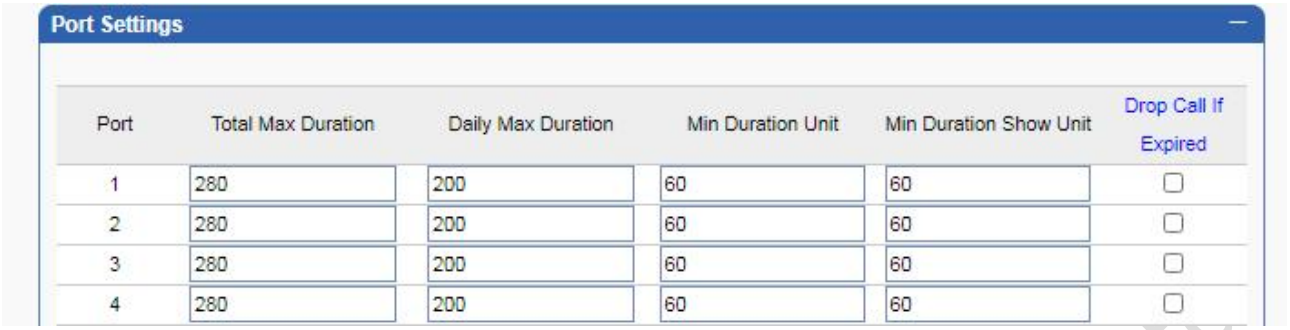
The screenshot below shows the call duration settings.



Fields are specified as following:

- Total Max Duration: once call duration reach total max duration, gateway will lock the sim.0 means no limit.
- Month Max Duration: Month max duration need set the correct time. For example ,set 360 minutes, the sim has 360 minutes call duration every month.
- Daily Max Duration: daily max duration need set the correct time. For example ,set 360 minutes, the sim has 360 minutes call duration every day.

The screenshot below shows the call duration statistics. **This data will be save in the Device Flash with every SIM.**



This port setting needs to be set when configuring by port!

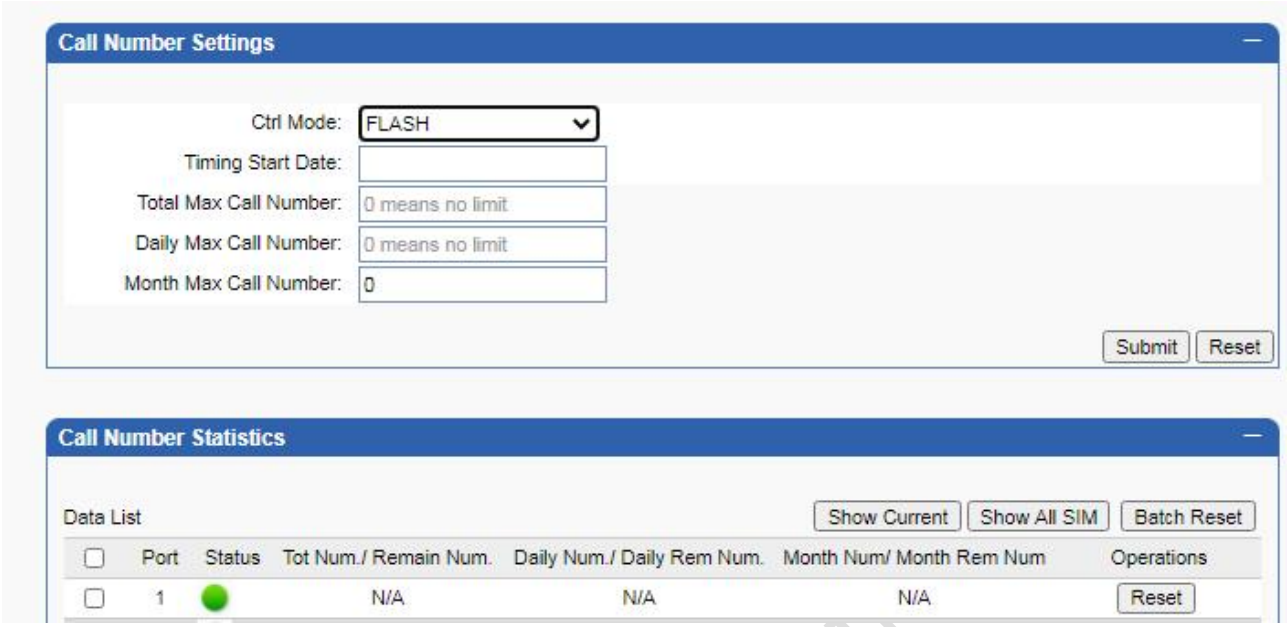
Min Duration Unit:After setting, the duration will be calculated according to this unit, if it is less than this calculation unit, it will automatically +1.

Min Duration Show Unit:Displayed unit is usually recommended to be consistent with the above.

The columns are specified as following:

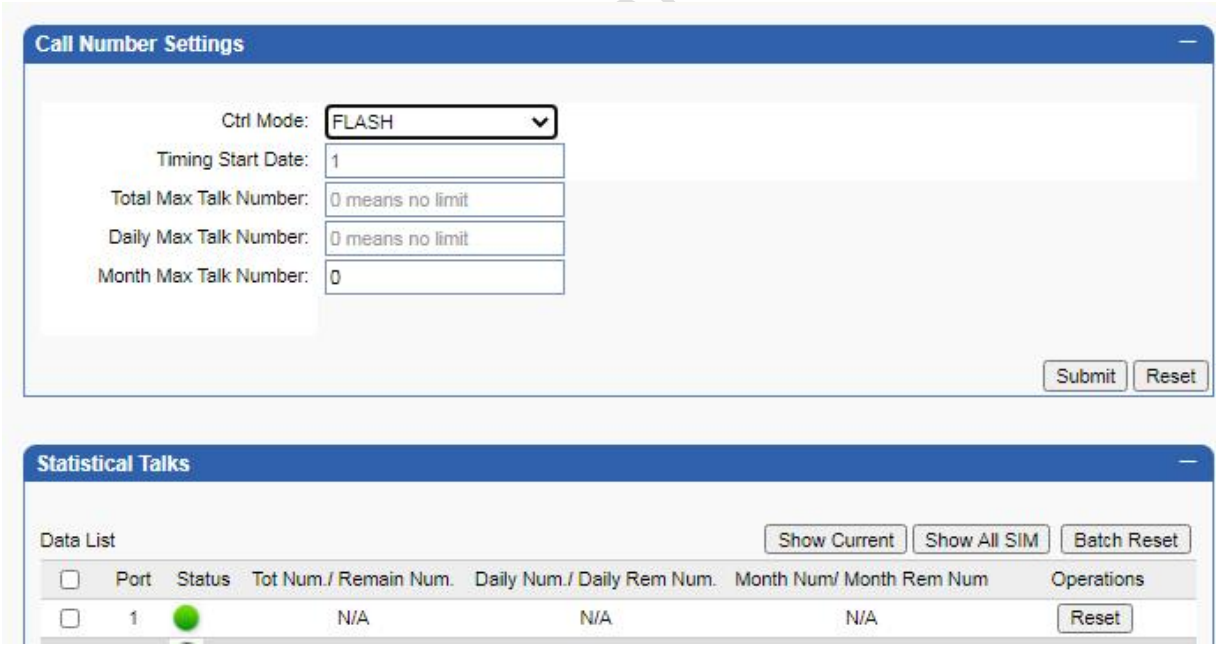
- Port: The GP Gateway mobile port. Each port contains one or four card slots. Port No starts from 1 to 64.
- Status: it shows the sim status.
- Total Duration: Specify the total duration has used.
- Remain Duration: Specify the remain duration.
- Daily Duration: Specify the daily duration has used.
- Daily Rem Dur.: Specify the daily remain duration.

7.18 Call Number Limit



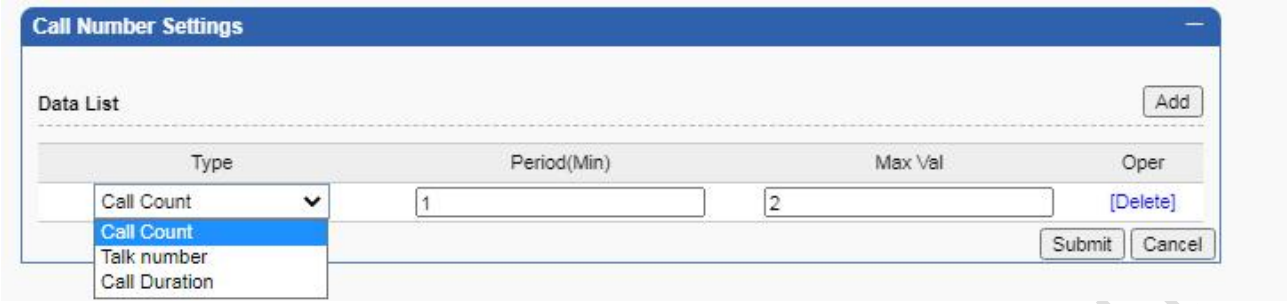
This function is similar to Call Duration Settings, but controls the number of calls !

7.19 Talk Number Limit



This function is similar to Call Duration Settings, but controls the number of Talk !

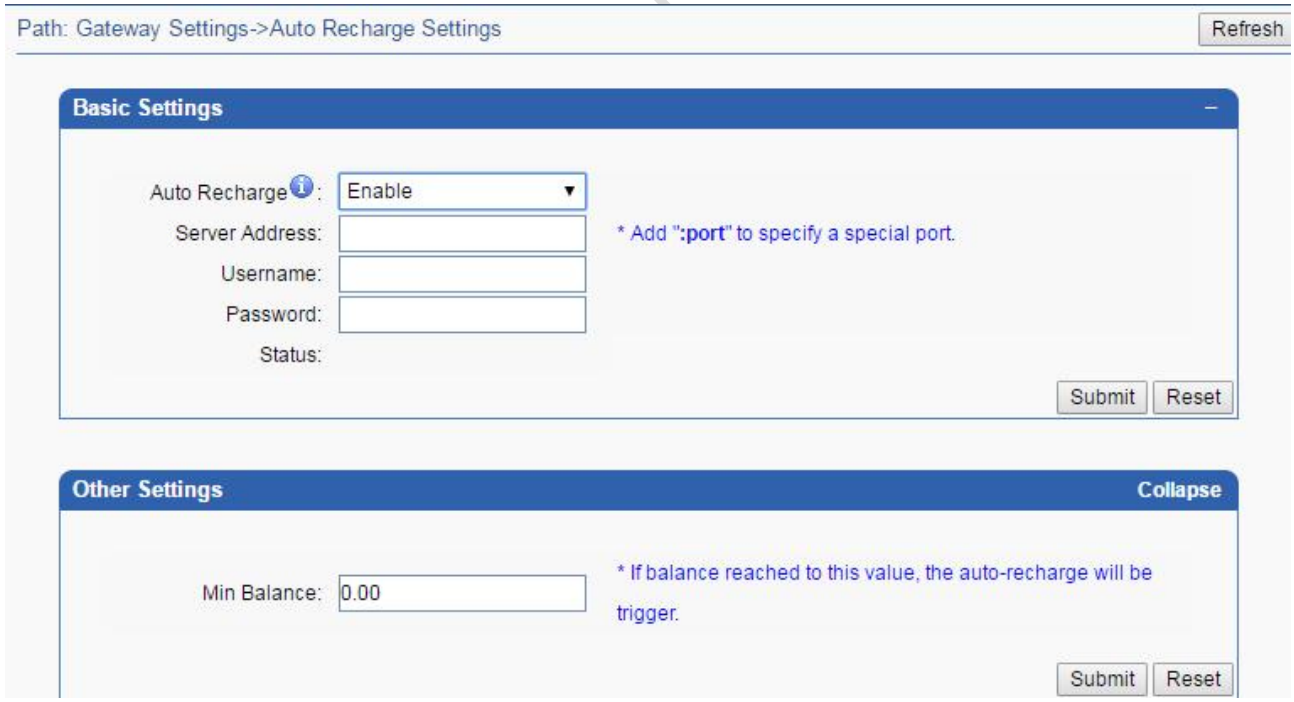
7.20 Call Ctrl Settings



This function is used to control the calling frequency!
Type: Optional number of calls, number of talks, duration of talks.
Period(Min): Detection cycle, this setting represents the time of a cycle, during this time, the port that reaches the specified condition will be suspended! It will automatically resume use after entering the next cycle time!
Max Val: set condition value.

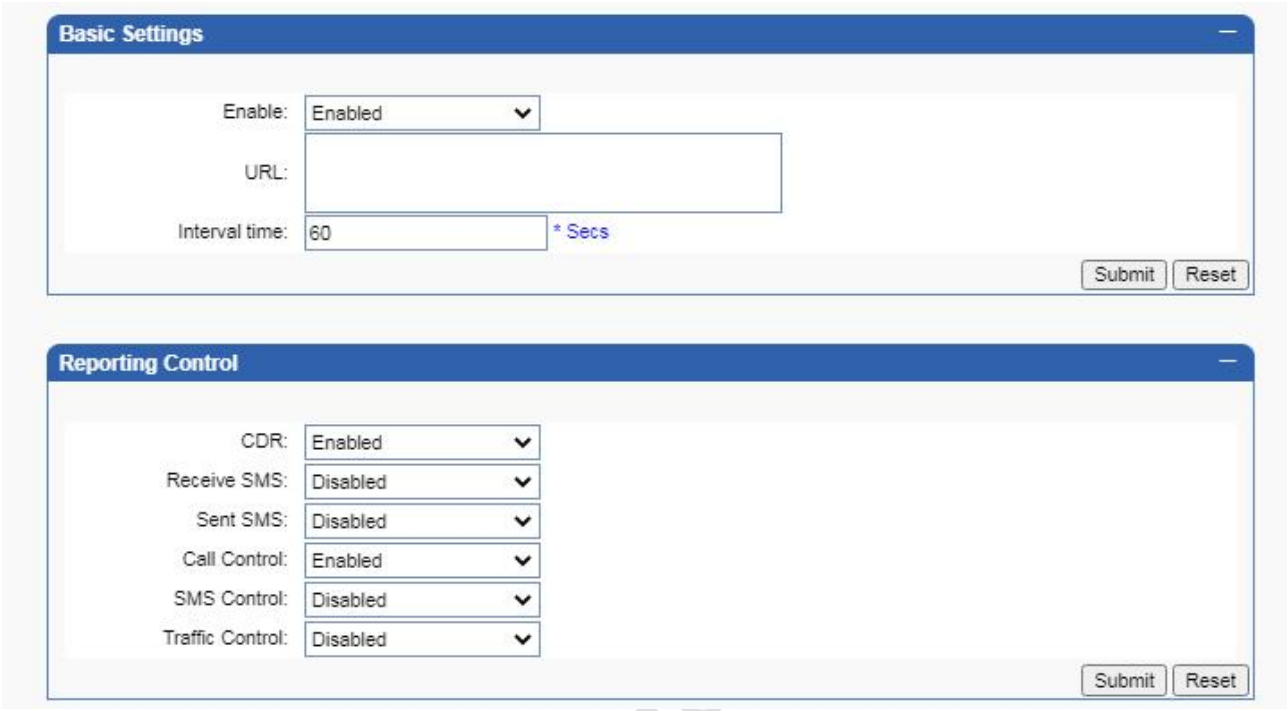
7.21 Auto Recharge

This item is used to configure automatic recharge settings, which need to be used with automatic recharge server(If you have server, please contact YX NOC install auto recharge software)

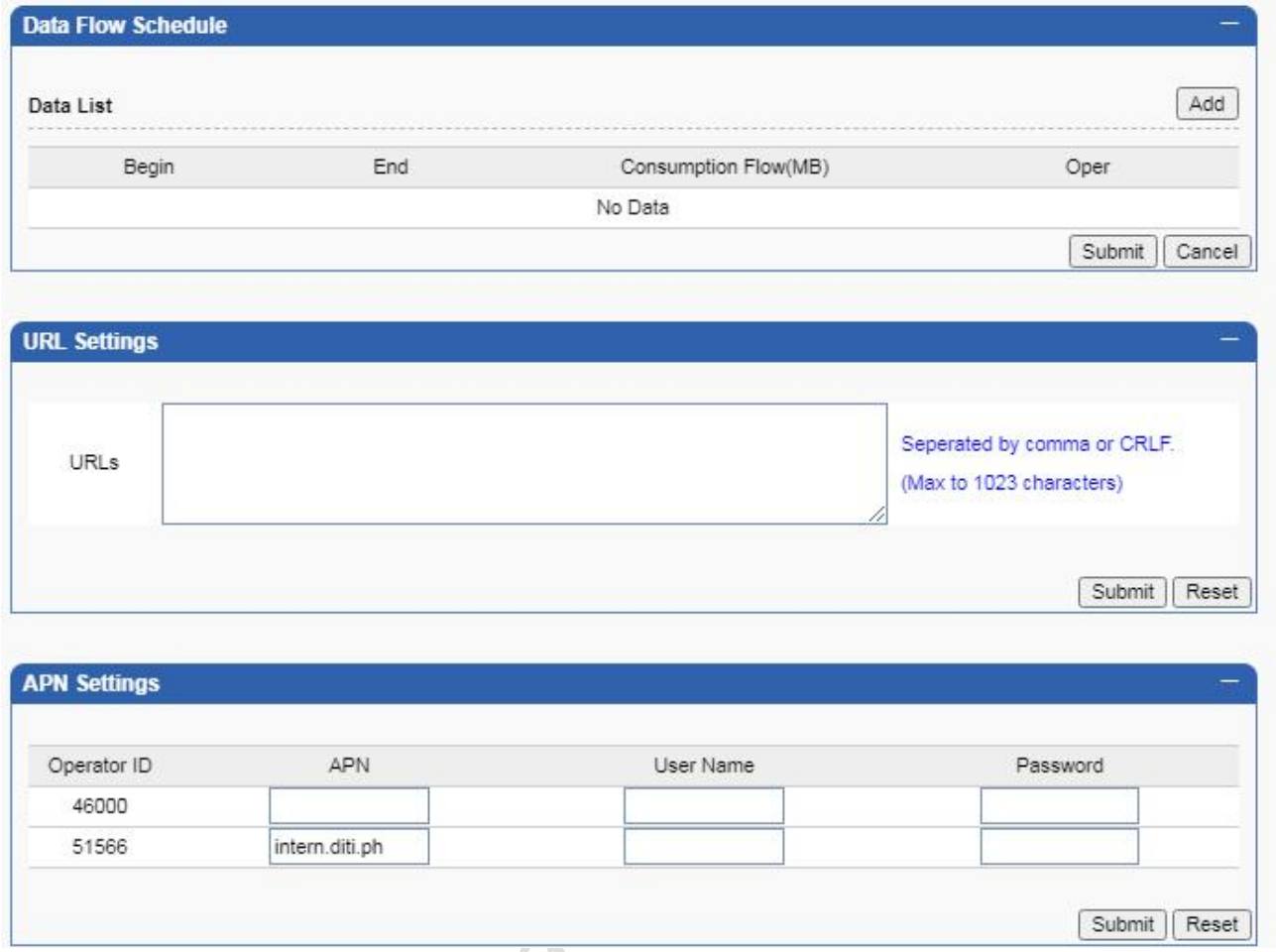


7.19 Status Notification

This setting is used to push the status information of the device to the specified server!



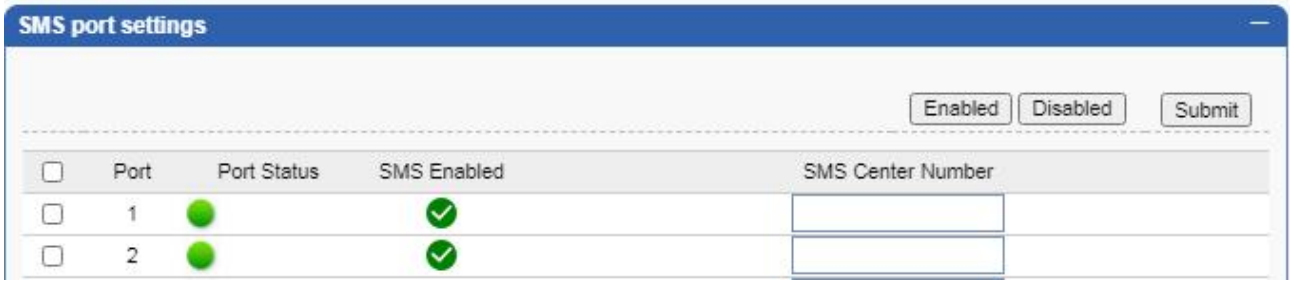
7.20 Internet Setting



Internet Traffic Settings: This item is used to set the Internet access conditions. When the conditions are met, the Internet access operation will be performed automatically one times
URL Settings: This is used to fill in, you need to make the device visit the URLs
APN Setting: Please enter the APN you want to define in different carrier codes

❖8 SMS Setting

8.1 Port Setting



This setting can enable or disable the SMS function of the port, and set the SMS center number

8.2 SMS Setting

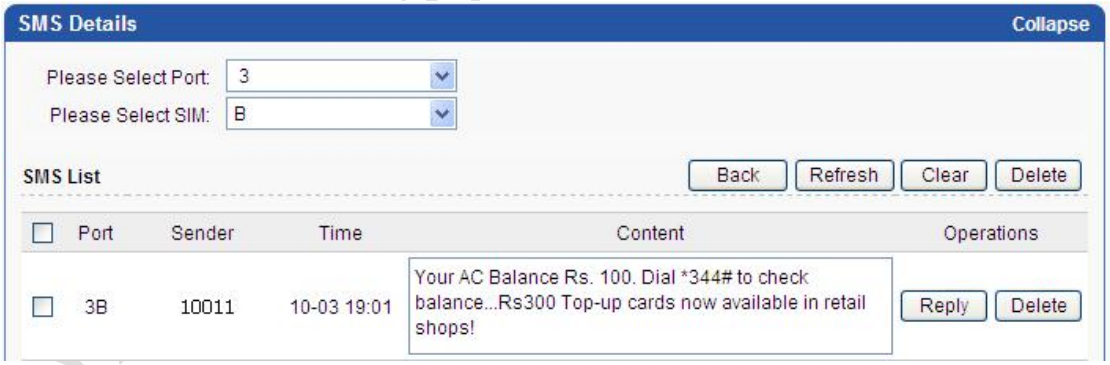
8.2.1 SMS Inbox

The screenshot below shows the operation mode to receive sms.

Fields are specified as following:

- Port No: The GP Gateway mobile port. Each port contains one or four card slots. Port No starts from 1 to 64.
- Sender: Specify the sms sender.
- Time: Specify the sms receive time.
- Content: Specify the sms content.
- Operations: Click the Detail button to get more detail about the specify port.

The screenshot below shows the operation mode to get sms details.

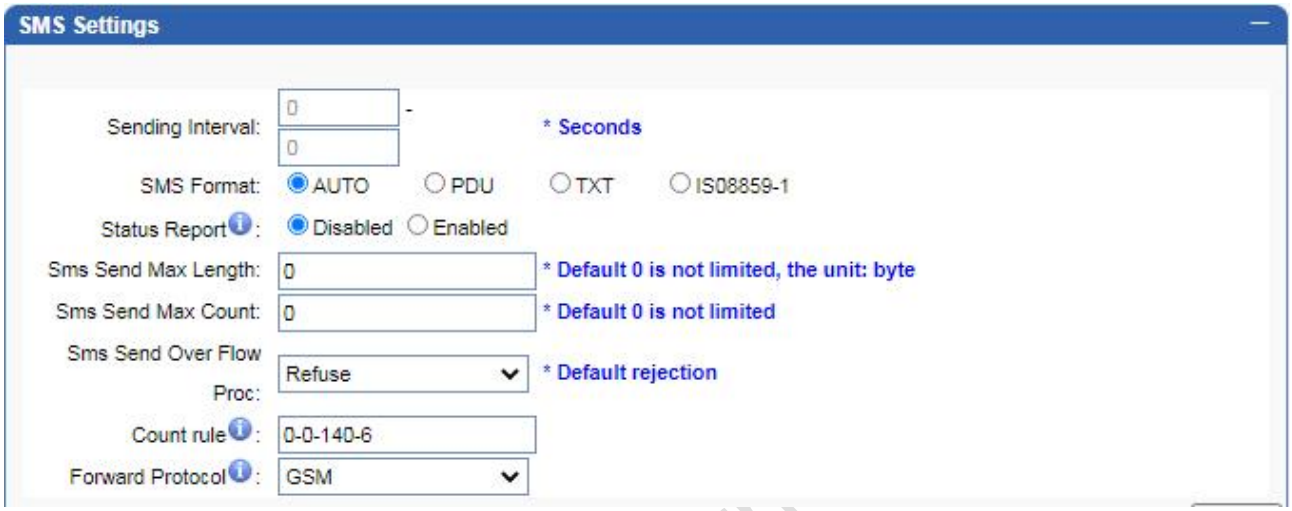


Fields are specified as following:

- Please Select Port: Specify the port.
- Please Select SIM: Specify the sim.
- Port: Specify the port.
- Sender: Specify the sms sender.
- Time: Specify the sms receive time.
- Content: Specify the sms content.
- Back: Back to the SMS content web page.

- Refresh: Refresh the web page.
- Clear: Clear the sms.
- Reply: Reply the sms
- Delete: Delete the corresponding sms.

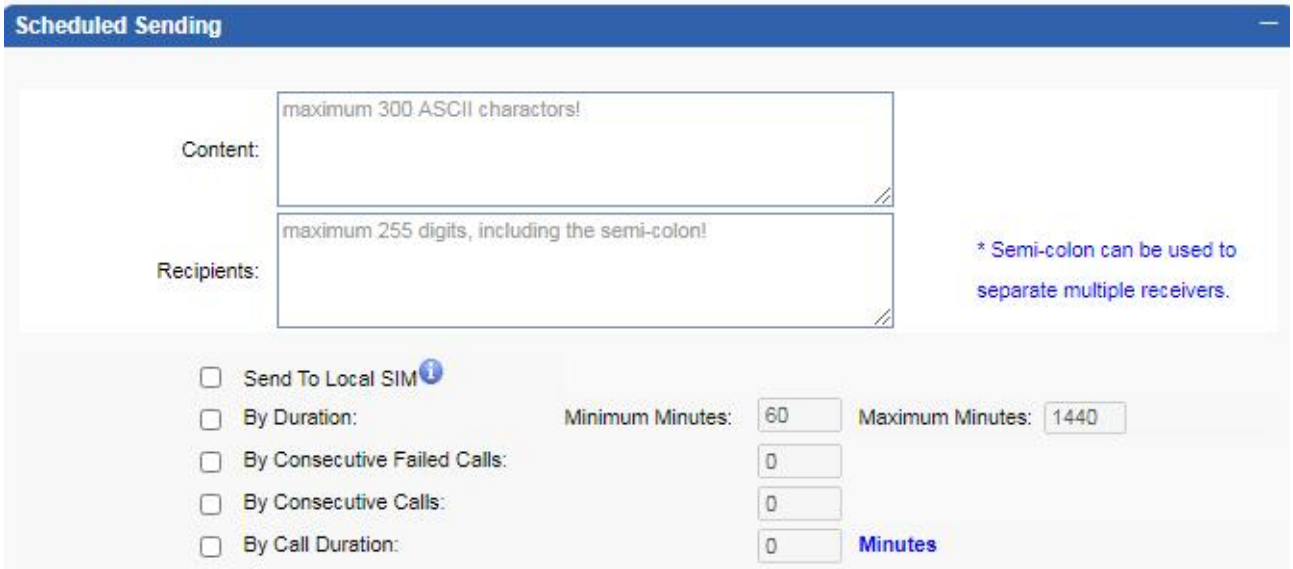
8.2.2 SMS Settings



Sending Interval:Please set the sending interval you need. When the time is set to a certain period of time, it will be sent at a random time within this time range.
Status Report:When successfully sent or receiver have received, you will receive a successful notification SMS (This feature depends on carrier support)
Other settings: if you are not familiar with it, please keep the default!

8.2.3 Scheduled Sending

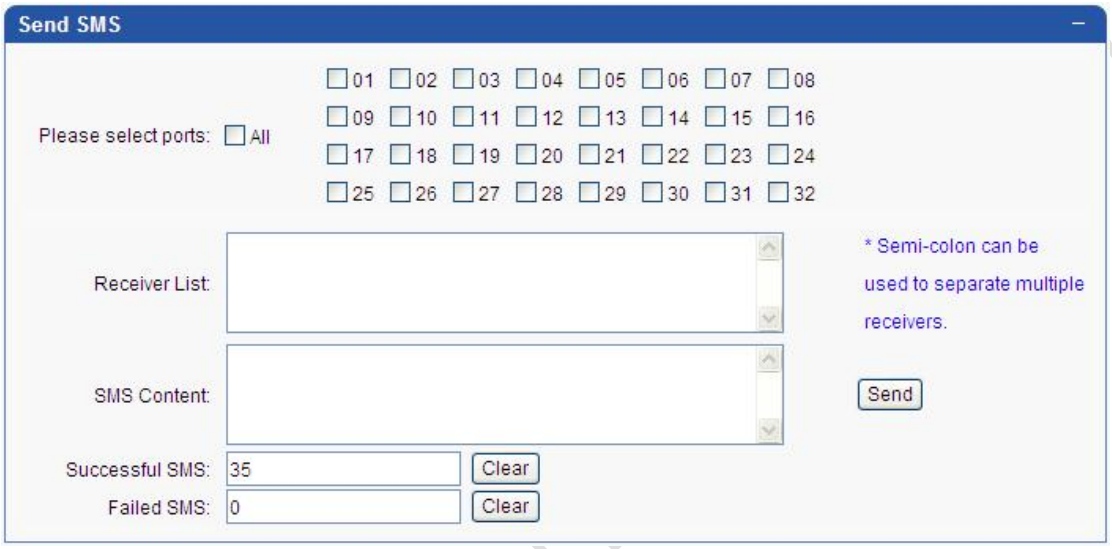
This function is set to send SMS automatically



Fields are specified as following:

- Content: Specify the sms content.
- Recipients: Specify the recipients. Semi-colon can be used to separate multiple receivers.
- Send To Local SIM:Enable this feature and set the local SIM's number,the inter port will send sms.
- By Duration: Gateway will start sms sending by the device online time, and the time between minimum minutes and maximum minutes.
- By Consecutive Failed Calls:Gateway will start sms sending by consecutive failed calls.
- By Consecutive Calls:Gateway will start sms sending by consecutive calls.
- By Call Duration:Gateway will start sms sending by call duration.

The screenshot below shows the operation mode to send SMS through the GP Gateway.

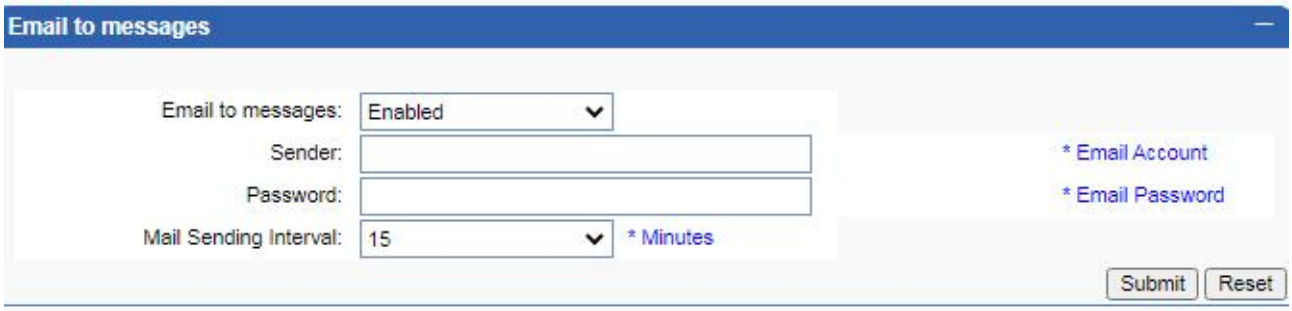


- Select port. The module here means GP mobile port and the SMS is sent out through the card which is in service on this port.
- Input the receivers separated by semi-colon.
- Input SMS content and click button send to send out the SMS.
- Field Received SMS is used to display the last response of the SMS sent out, if the response is not empty.
- Field Successful SMS Number records down the total number of SMS which is successfully sent out. Field Failed SMS Number records down the total number of SMS which is sent failed.

8.3 SMS Forward

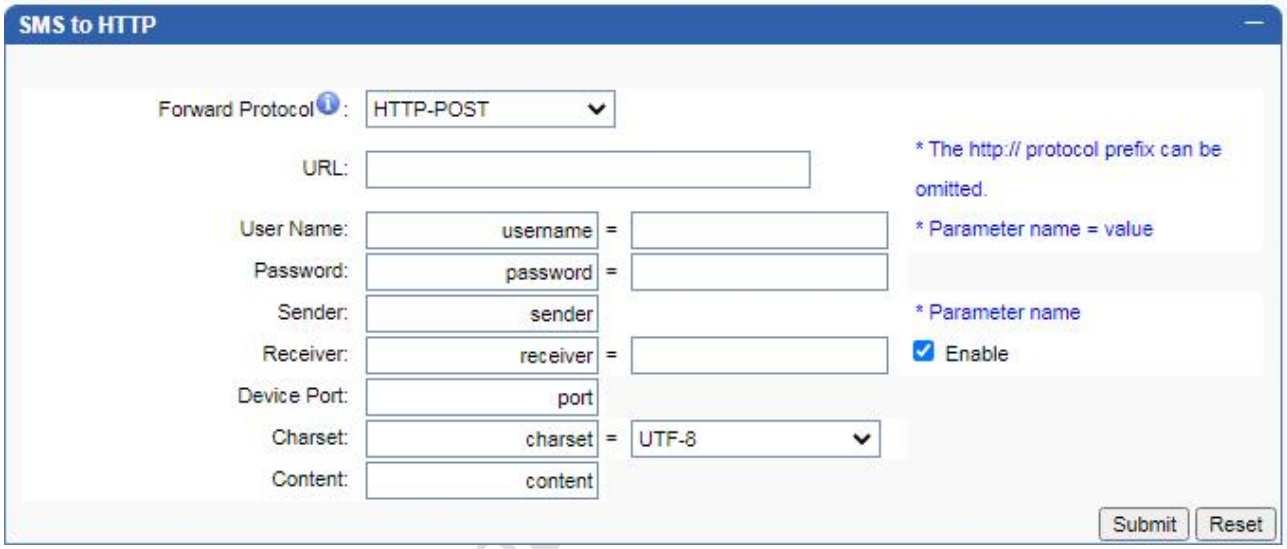
8.3.1 Email to messages

This function is used to set up to send a short message according to the content of the email when an email is received!



8.3.2 SMS to HTTP

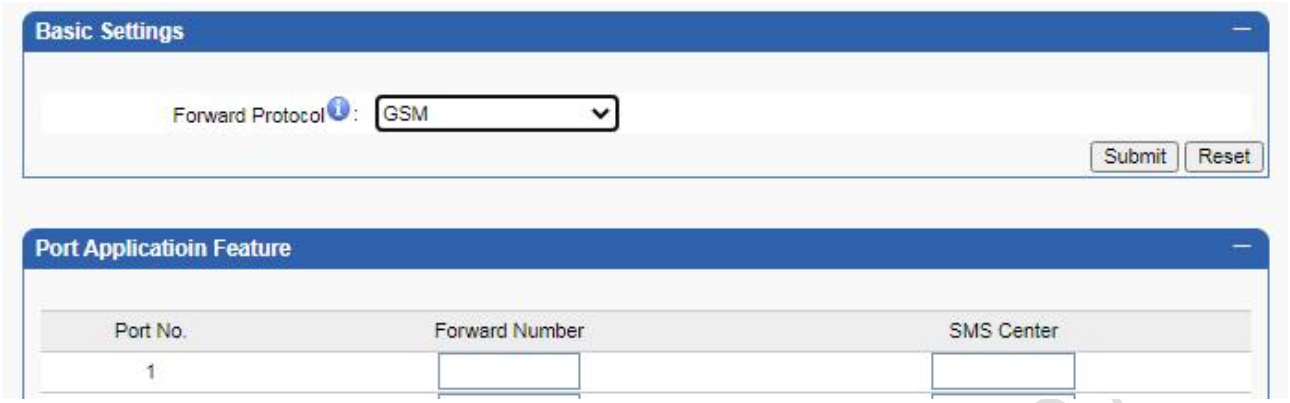
The screenshot below shows the operation mode to set HTTP protocol of forwarding SMS.



Fields are specified as following:

- Forward Protocol: Specify the forward protocol HTTP(POST/GET).
- URL: URL to receive this SMS push on your server!
- Username: If you need ,Specify the username.
- Password: If you need ,Specify the password.
- Sender: the sender who receives the SMS.
- Receiver: If you need ,Specify the receiver.
- Device Port: The port number to receive this SMS in device.
- Charset: Specify the charset, UTF-8/BASE64/PDU.
- Content:SMS Content.

8.3.3 Basic Settings



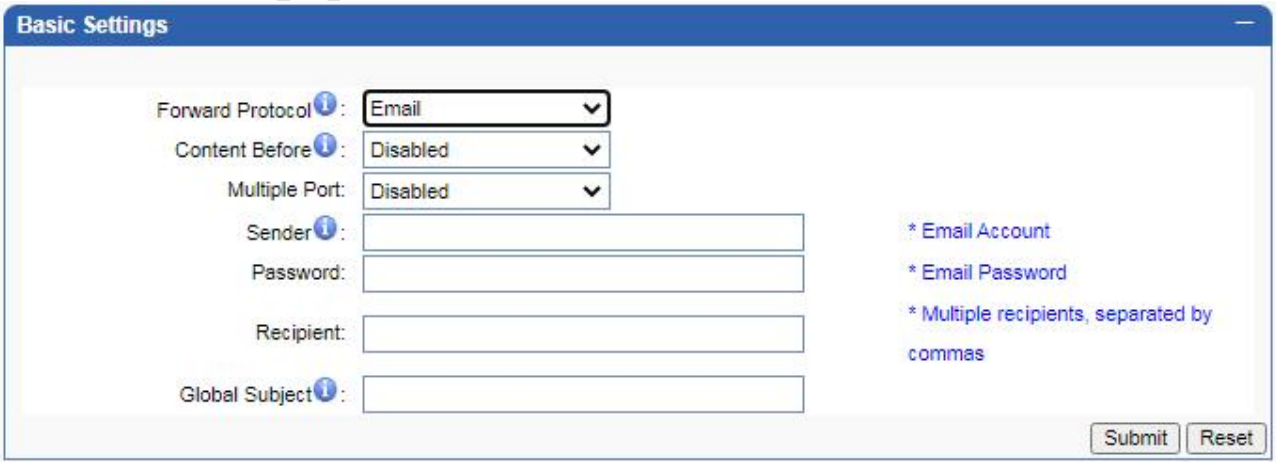
Forward Protocol(GSM):

This feature forwards text messages to another mobile phone user

- Forward Number: Please enter the mobile number you want to forward to.
- SMS Center: SMS center number.

Forward Protocol(SIP):

- Forward Protocol: Specify forward protocol sip.
- Server IP: Specify the sms server ip.
- Content-Type: Specify the Content-Type.
- Content Charset: Specify the content charset.

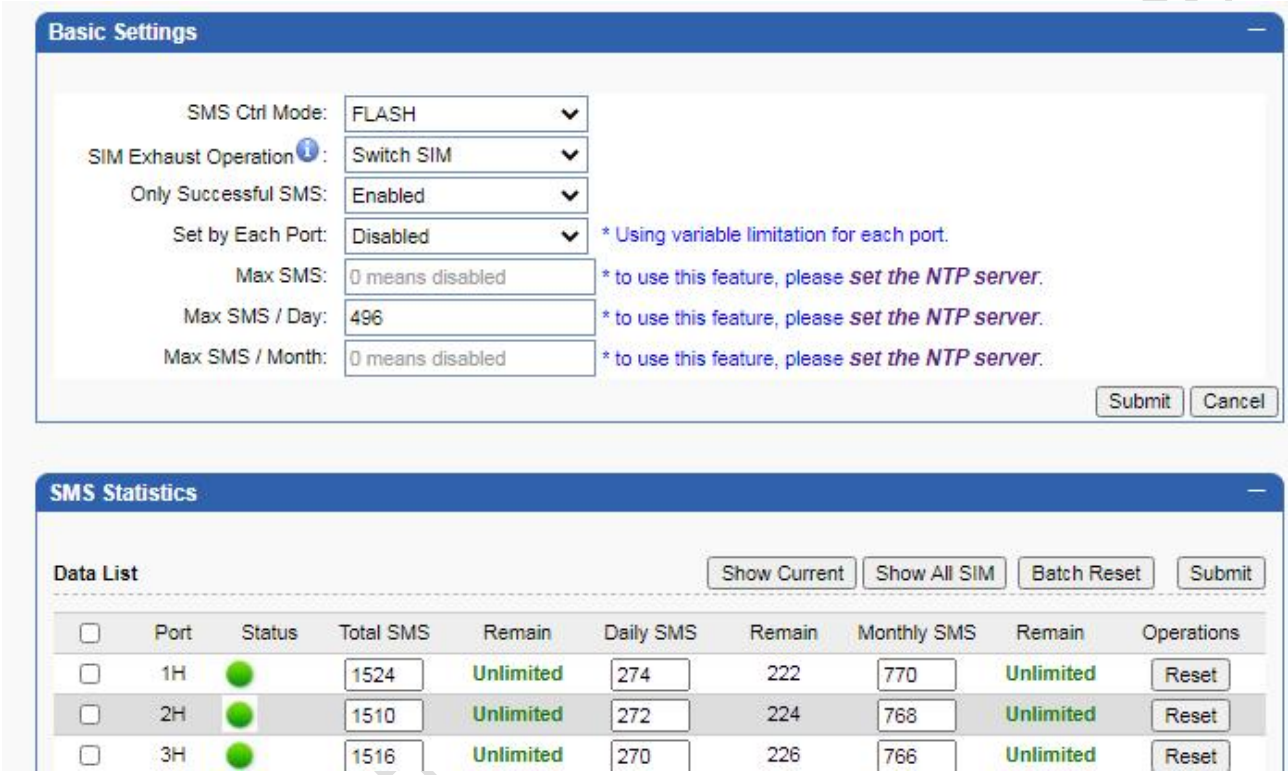


Forward Protocol(Email):

- Content Before:Format, Disable:content will in front; Enable:content at the end.

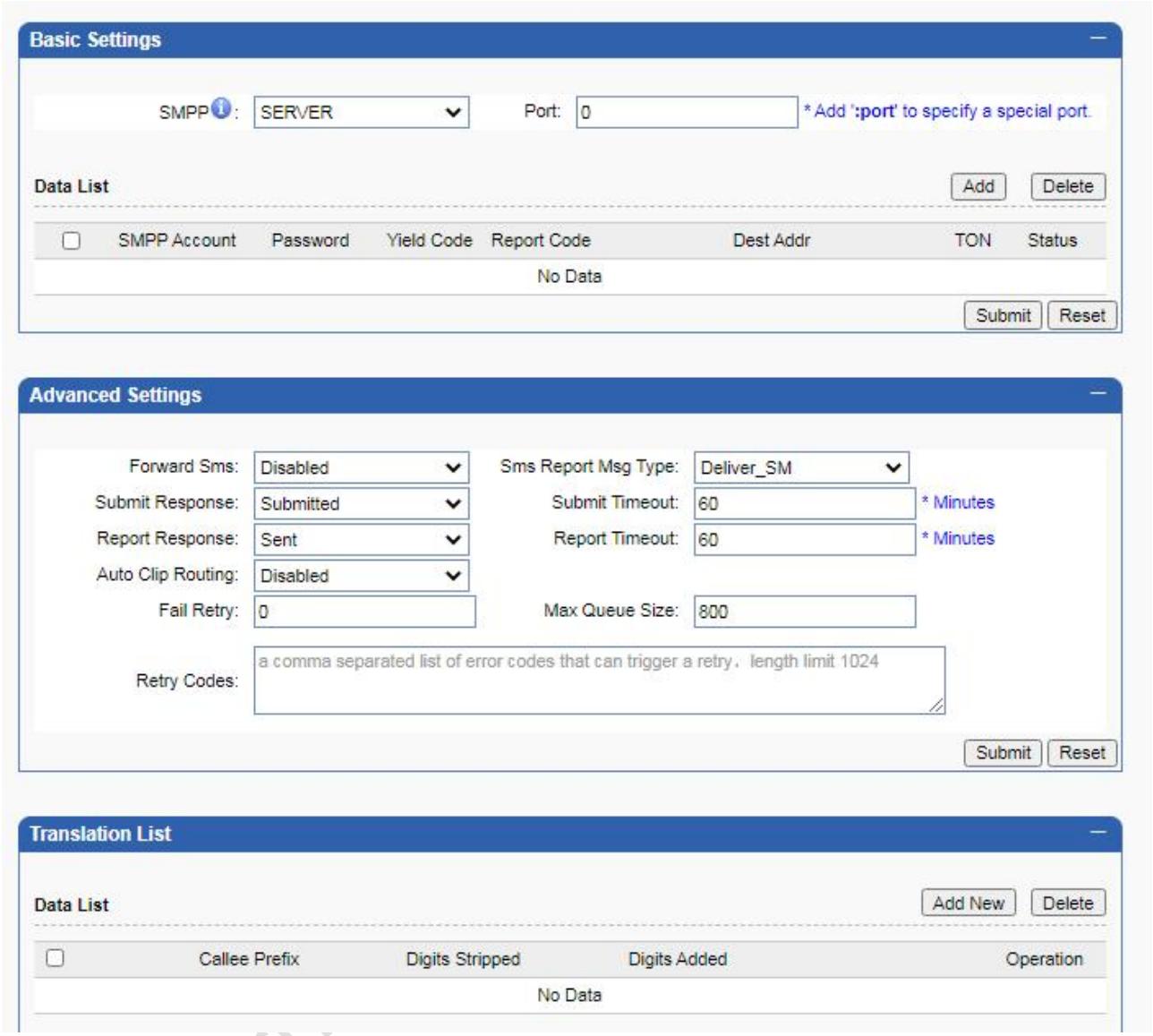
- Multiple Port:Set by every ports.
- Sender: Email account (The device will log in to this mailbox, and then send an email containing SMS content to the specified email address through this mailbox.).
- Password: Email password.
- Recipient: Receive SMS content email address
- Global Subject: Email Subject.

8.4 SMS Ctrl Setting



Switch SIM: When the sent SMS reached the maximum. It will switch to next SIM card
Set by Each Port: Using variable limitation for each port. When this setting is enabled, set each port separately, If set is ”0”, this is not enabled
Max SMS: The maximum total number of sent (Need to set the time server, and read the local time correctly)
Max SMS / Day: One day the maximum total number of sent
Max SMS / Month: One Month the maximum total number of sent
SMS Statistics: Here will be Statistics all ports to send SMS data situation(Reset button to reset the sending status of this card) **This data will be stored in the sim card**

8.5 SMPP Setting



SMPP Protocol version 3.4, TOP: This option will be added to provide the user to report on this parameter

CLIENT:Please set the “account” “password” “IP” and “port number” from the SMPP server ,

Sms Report: If you need sms report, please enable this setting, generally please keep it enabled

If the registration is successful, the status will prompt green “transceiver”

SERVER(This mode depends on the public IP, This mode can be used to connect to the SMPP platform, and the device will send the SMS from the SMPP platform through the SIM card):

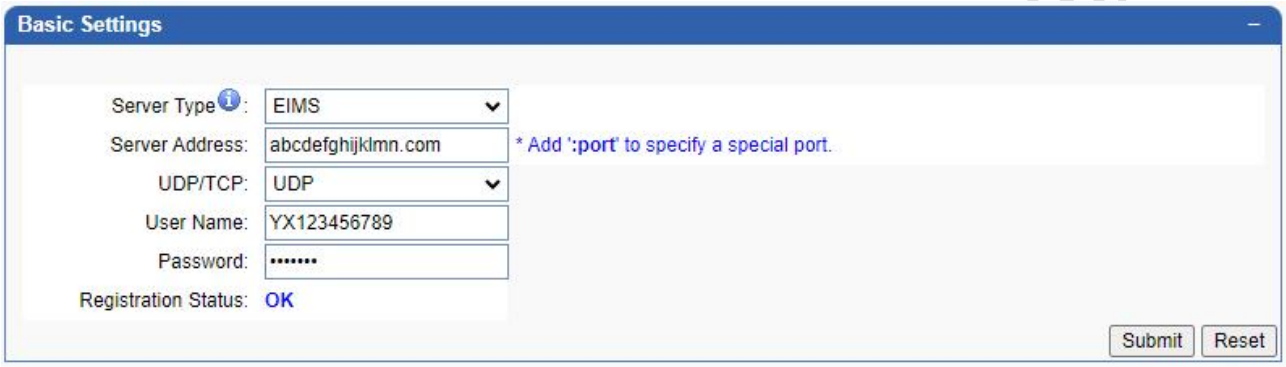
Please set the “account” “password” and “port number” and let the client settings same and registration to GP

Sms Report: If you need sms report, please enable this setting, generally please keep it enabled

If the registration is successful, the status will prompt green “transceiver”

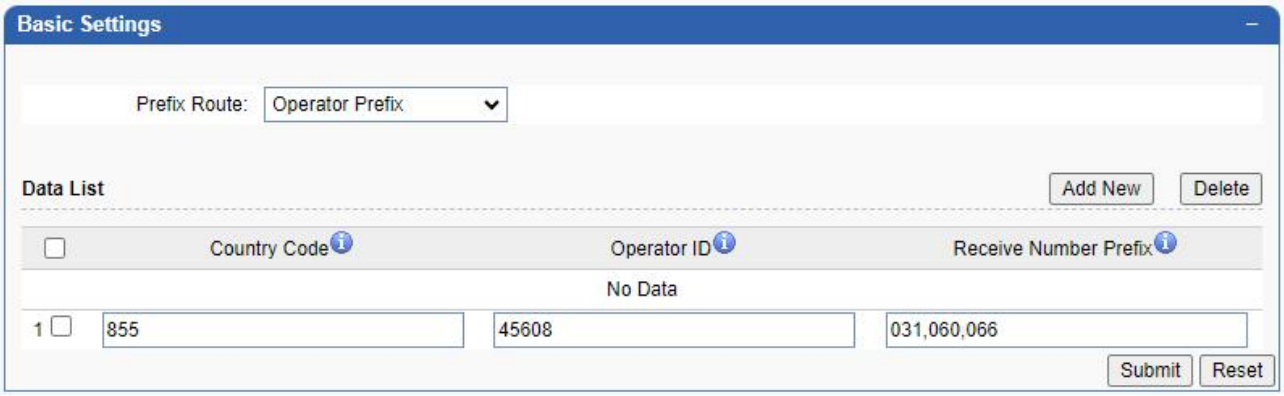
8.6 EIMS Setting(SMS Server Registration)

This setting can be used to running the network SMS business, which needs to be connected to the SMS Server IMFS or EIMS system. you can also contact your account manager and provide us with an SMS route. We will run the network SMS business together.
Please provide the device's MAC to the SMS partner company.
Server Type: Please select EIMS to run SMS Business.
Server Address: IMFS/EIMS SMS Server IP (Please get it from your SMS business partner company)
User Name: Register account (Please get it from your SMS business partner company)
Password: Register password (Please get it from your SMS business partner company)
Registration Status: When it displays OK, it is register success



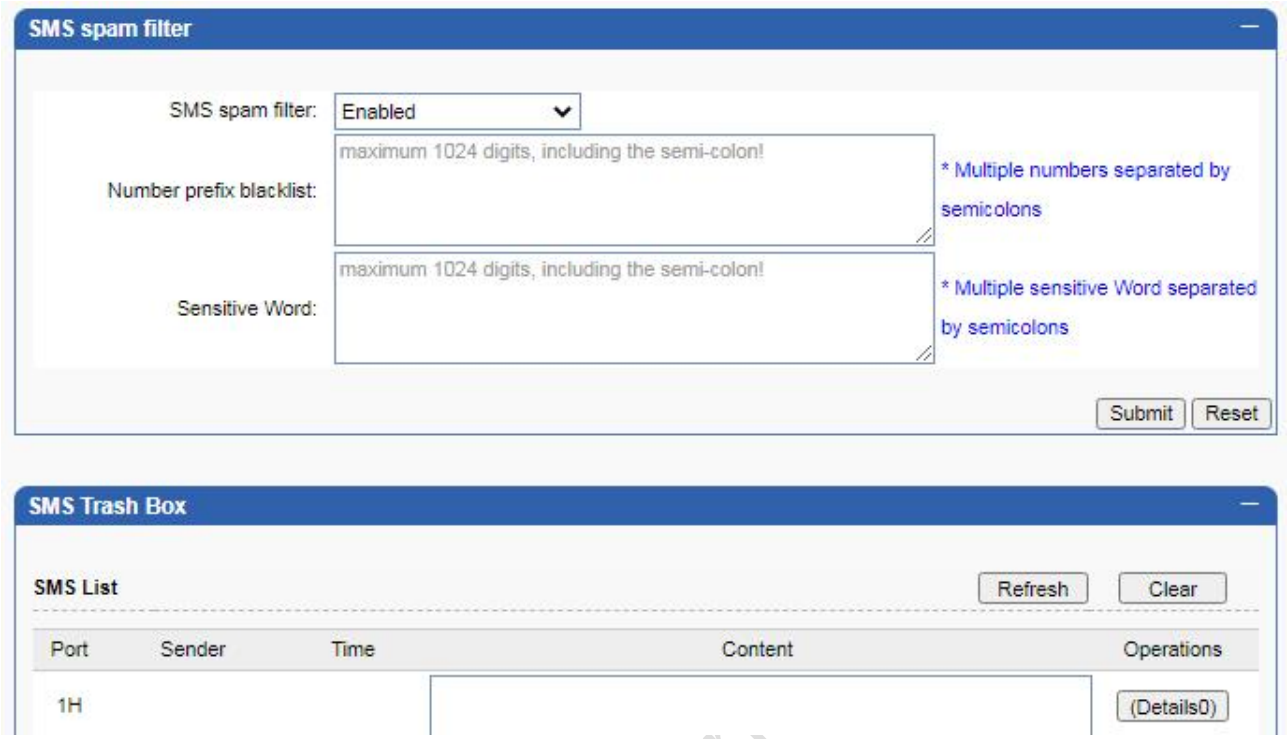
8.7 SMS Prefix Route

This setting is used to limit the prefix of the number when running the network SMS business to ensure that the number number conforms to the sending rule of the SIM card.



This setting only support SMPP connect , This setting is used to limit the prefix of the number when running the network SMS business to ensure that the number number conforms to the sending rule of the SIM card.

8.8 SMS Filter

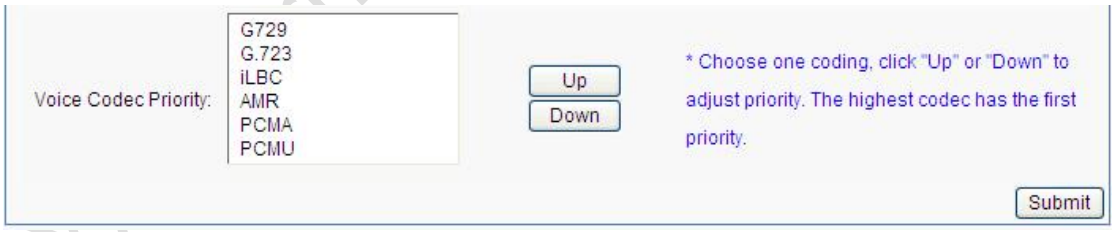


This function is used to filter the received spam text messages, and the filtered text messages will not appear in the inbox

❖9 System Setting

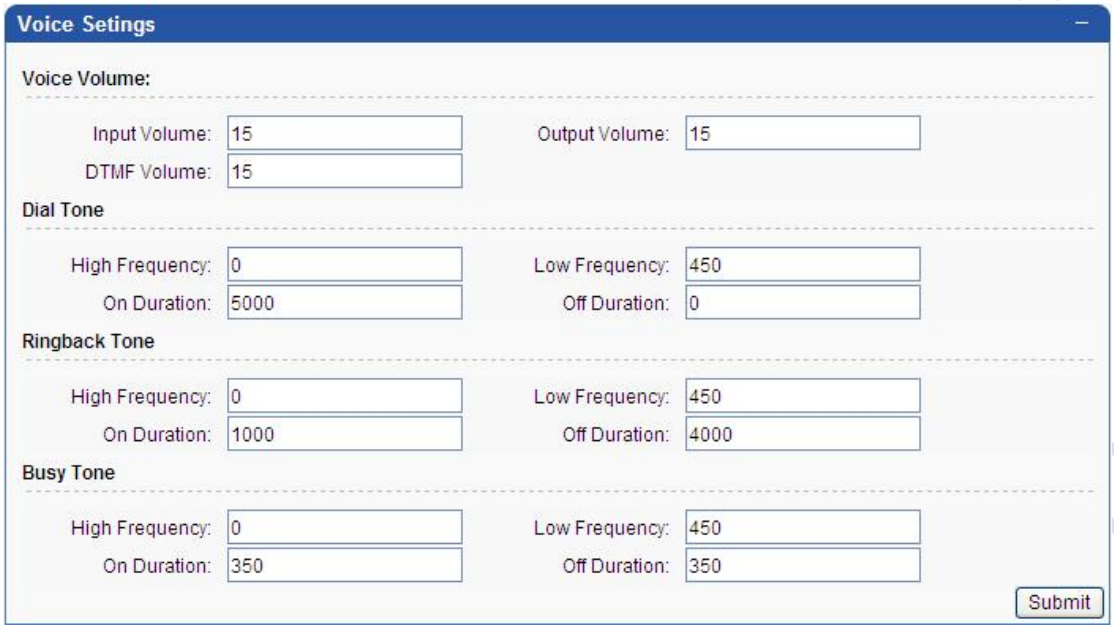
9.1 Voice and Codec

The screenshot below shows the operation mode to set codec priority.



Three codec types are provided to adjust GP Gateway to different network environment. It support G729a/b/e,G723.1,G711A/U law,iLBC,AMR auto- selecting.

The screenshot below shows the operation mode to set voice settings.



Voice Volume is used to specify the input voice volume, output voice volume andDTMF tone volume. The acceptable value for volume is an integer no less than 10 and no greater than 40.

The Dial Tone is sent to a customer or operator to indicate that the receiving end is ready to receive dial pulses or DTMF signals. It is used in all types of dial offices when the customer's or operator's dials produce dial pulses.

A Ring Back tone (or ringing tone) is an audible indication that is heard on the telephone line by the caller while the phone they are calling is being rung. It is normally a repeated tone, designed to assure the calling party that the called party's line is ringing.

The Busy Tone indicates that the called customer's line has been reached but that it is busy, being wrong, or on permanent signal. W hen an operator applies a busy signal, it is sometimes called a busy-back tone. Line Busy Tone is a Low Tone that is on and off every 0.5 second.

The settings of Dial Tone, Ring Back Tone and Busy Tone depend on area. The default settings for Asia are shown in the screenshot above for reference.

9.2 Network Debug

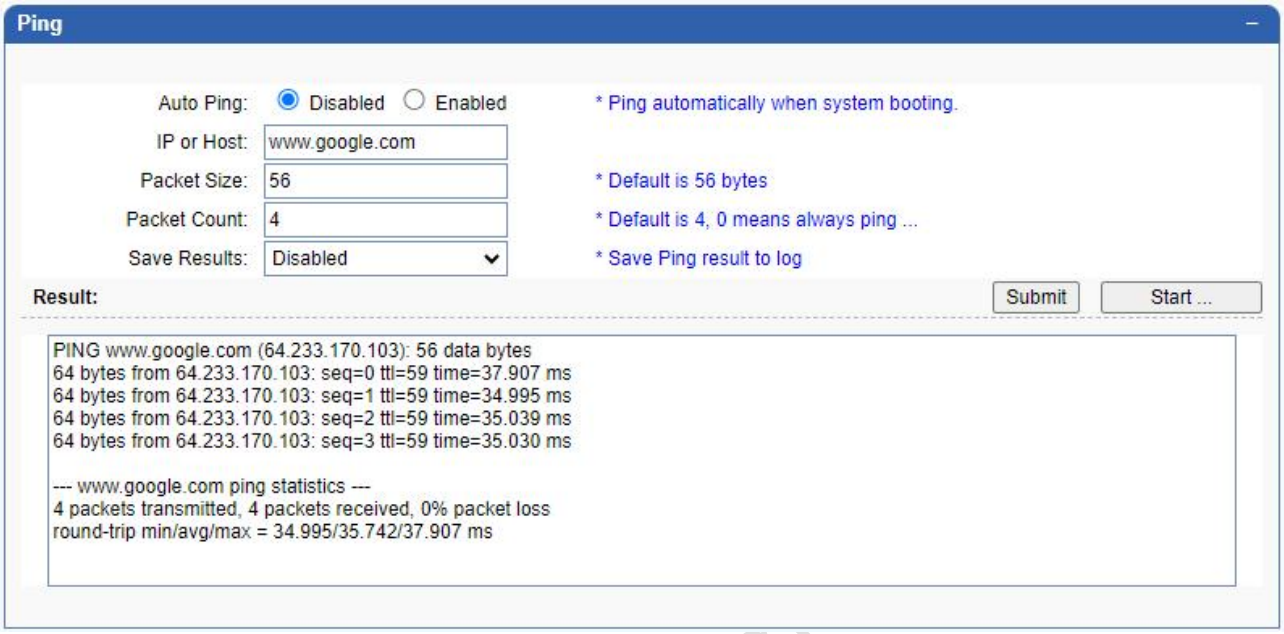
The screenshot below shows the auto ping settings

Fields are specified as following:

- Auto Ping: Specify whether enable auto ping, when the device power on to runing.
- IP Address: Specify the ip address.
- Packet Size: Specify the packet size.

- Last Time: Specify the ping duration.
- Package Loss Rate: Specify the package loss rate.

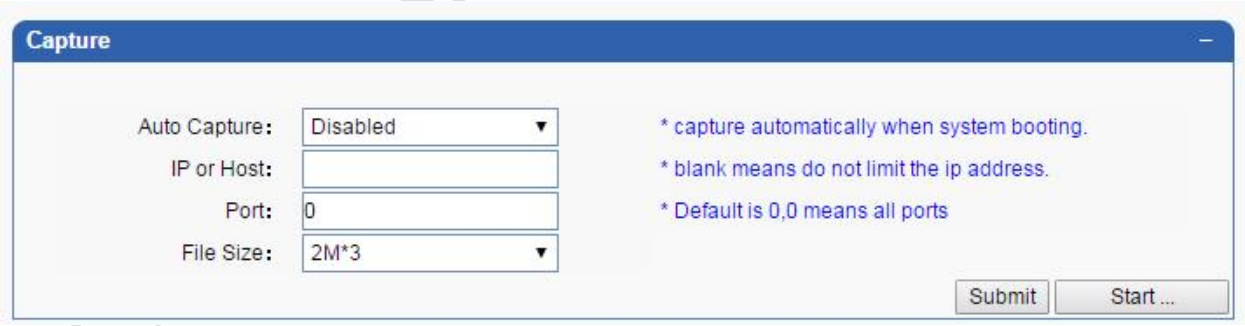
The screenshot below shows the manual ping settings



Fields are specified as following:

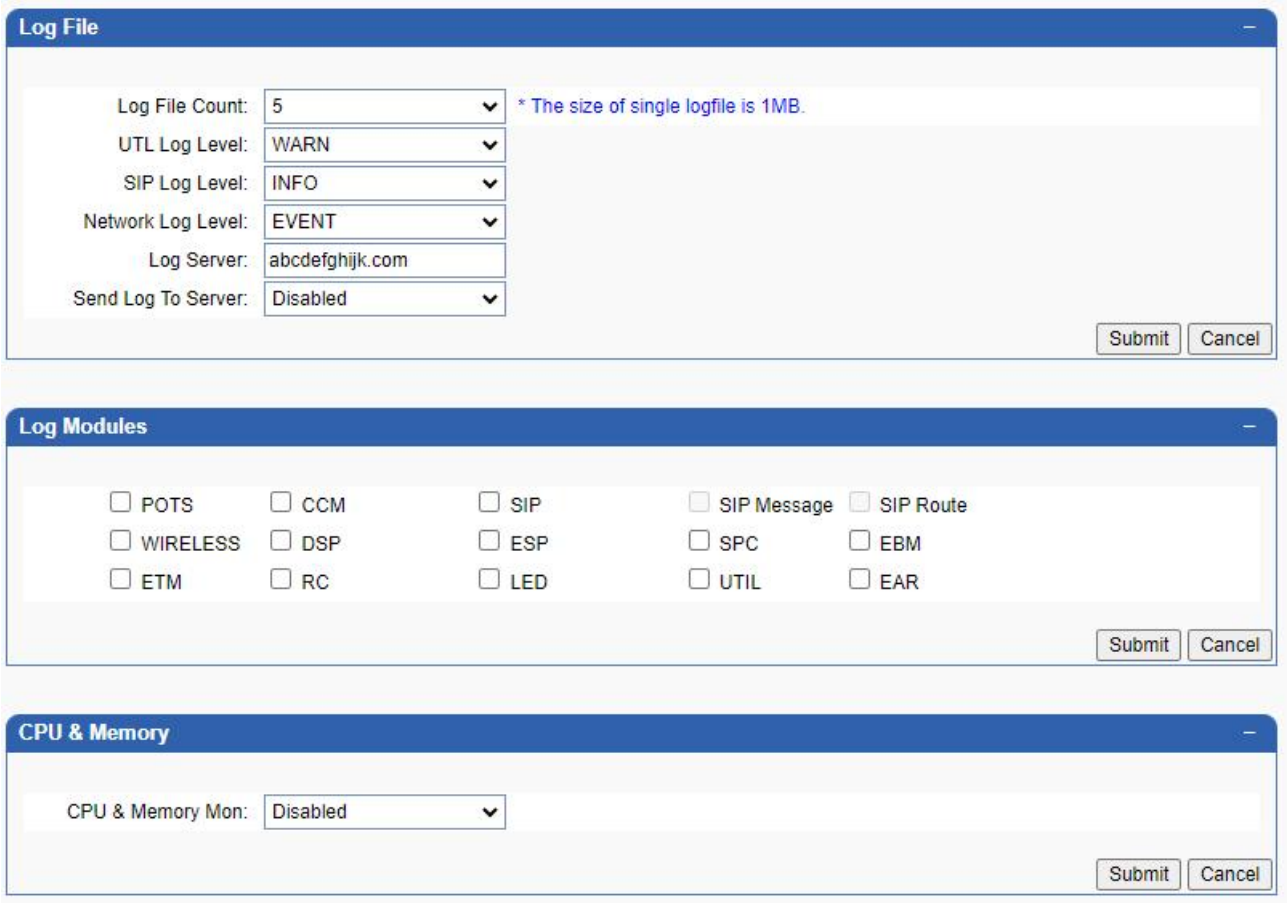
- IP Address: Specify the ip address or domain name.
- Packet Size: Specify the packet size.
- Packet Count: Specify the packet count.

The ping tool is easy to check the gateway network status. Especially when calls can't connect but every SIP parameters are correct, this tool will be helpful to find out problems.
The following is used to capture packets, non-professionals, please do not operate



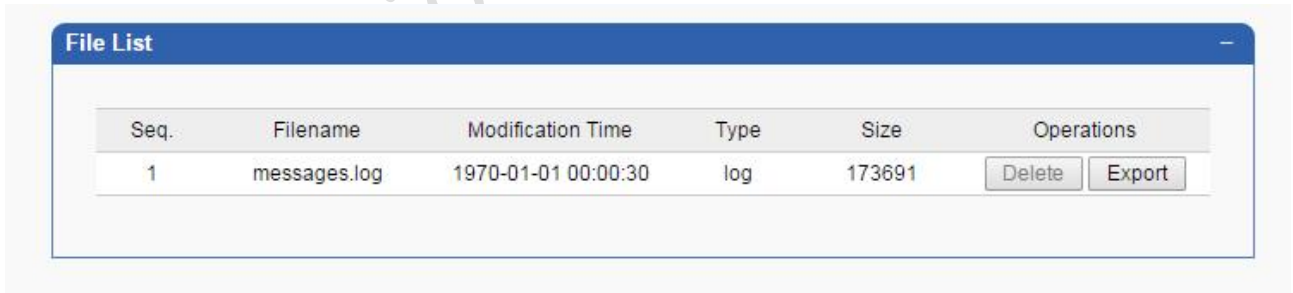
9.3 Log Settings

This item is used to set the device needs to record the log and save the relevant information can be used for engineering personnel to maintain and check the equipment status, please ignore in the normal use.



9.4 File Management

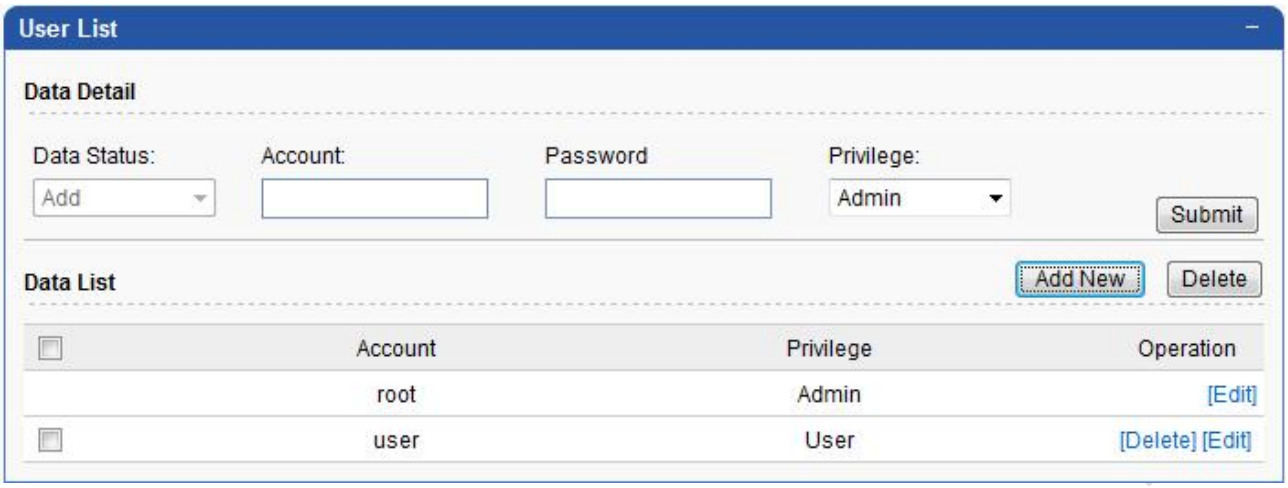
This is used to export and view log files, please ignore in the normal use



9.5 User & Device

9.5.1 User

The screenshot below shows the operation mode to manage system user.



Default User

The default system user account is root. This account can't be deleted and only Password and Privilege can be modified for this account.

Add User

Click button Add New to expand the data input area to add new data. Fields are specified as following:

- Data status: Mark the status of current data record. Option values are Add/Edit. Value Add means the data is new while value Edit means the data is old.
- Account: The user account used to login web system. The account value can not be modified after save.
- Password: The password used to login web system.
- Privilege: The privilege of user. Option values are Admin/User.

Click button Submit on the right to save the new data record.

Edit User

All the user records are displayed in list. Two operations are provided on the right of each record.

Click Edit to expand the current data record to Data Detail Area which is above the Data List.

Click button Submit on the right to save the old data record.

Delete User

Click Delete on the right of each record to delete the current record. A message box will be popped for delete confirmation.

Another shortcut button is also provided on the top right of Data List to delete multiple selected records in batch. A message box will be popped for confirmation of batch delete.

9.5.2 Device Settings

The screenshot below shows the operation mode to set Device settings.

Fields are specified as following:

- Device Alias: Specify the device alias.
- Auto Reboot: Specify the auto reboot time.
- Scheduled Reboot: Specify the scheduled reboot time.

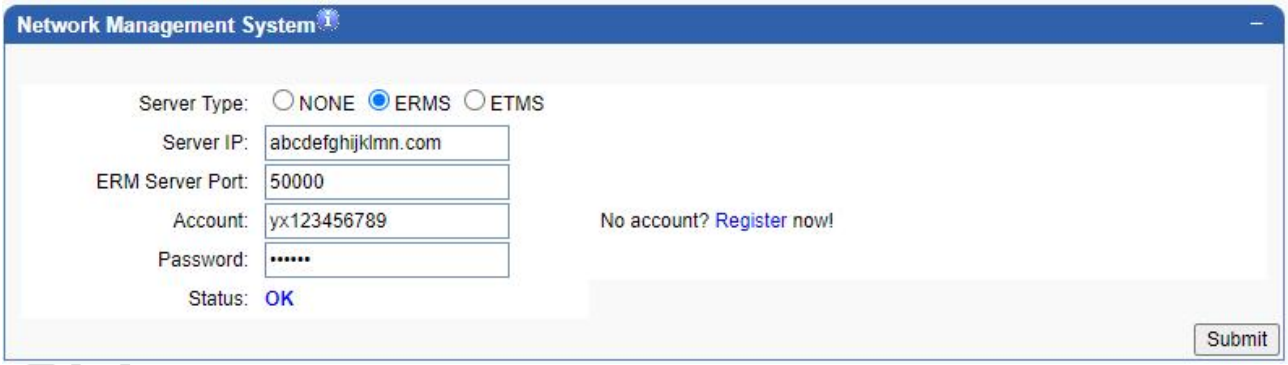
9.5.3 Date And Time

The screenshot below shows the operation of date and time settings.

The default time zone is UTC+8, you can change the time zone as your country. For example, Bangladesh is UTC+6, and change as +6. If your device is not touch with the internet and want to get accurate time, the time server will help.

9.5.4 Remote Mangement

The screenshot below shows the operation mode for remote management.

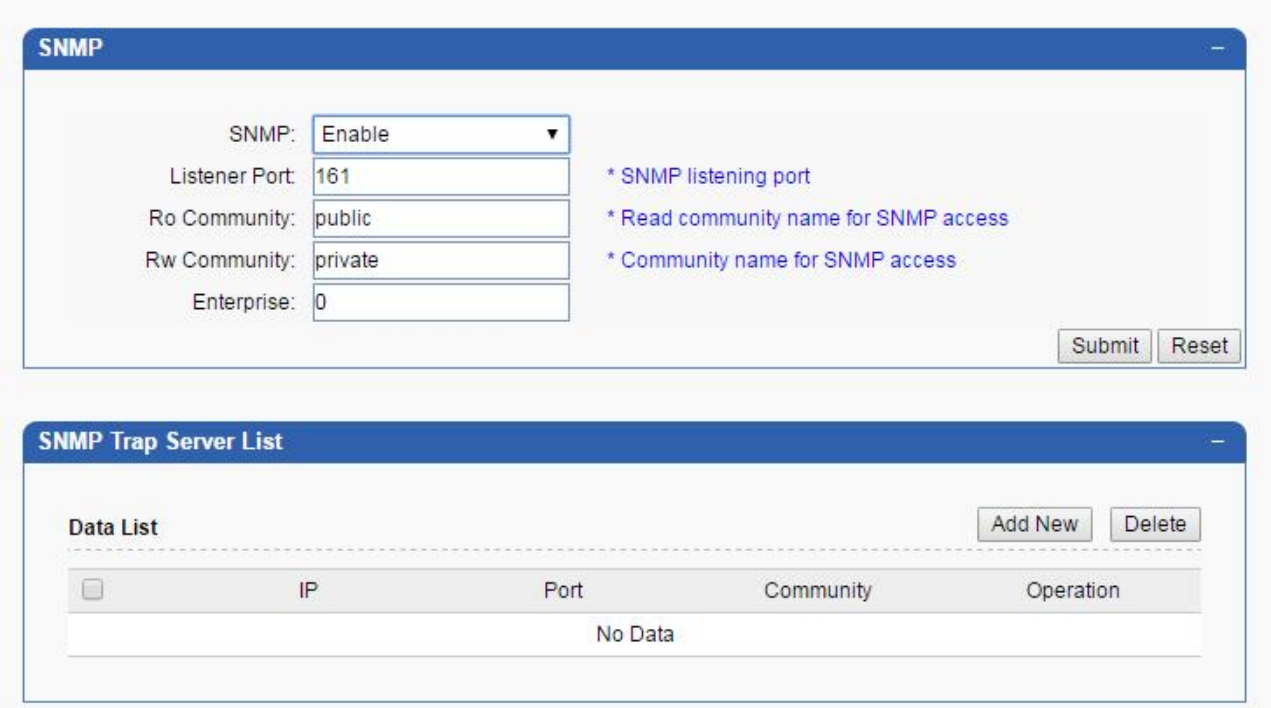


Remote Management is used to manage the GP Gateways located in other physical locations. Network must be available for the gateway to communicate with ERMS or ETMS Server, When the registration is complete, you can access your device from the ERMS/ETMS server at any time/address.

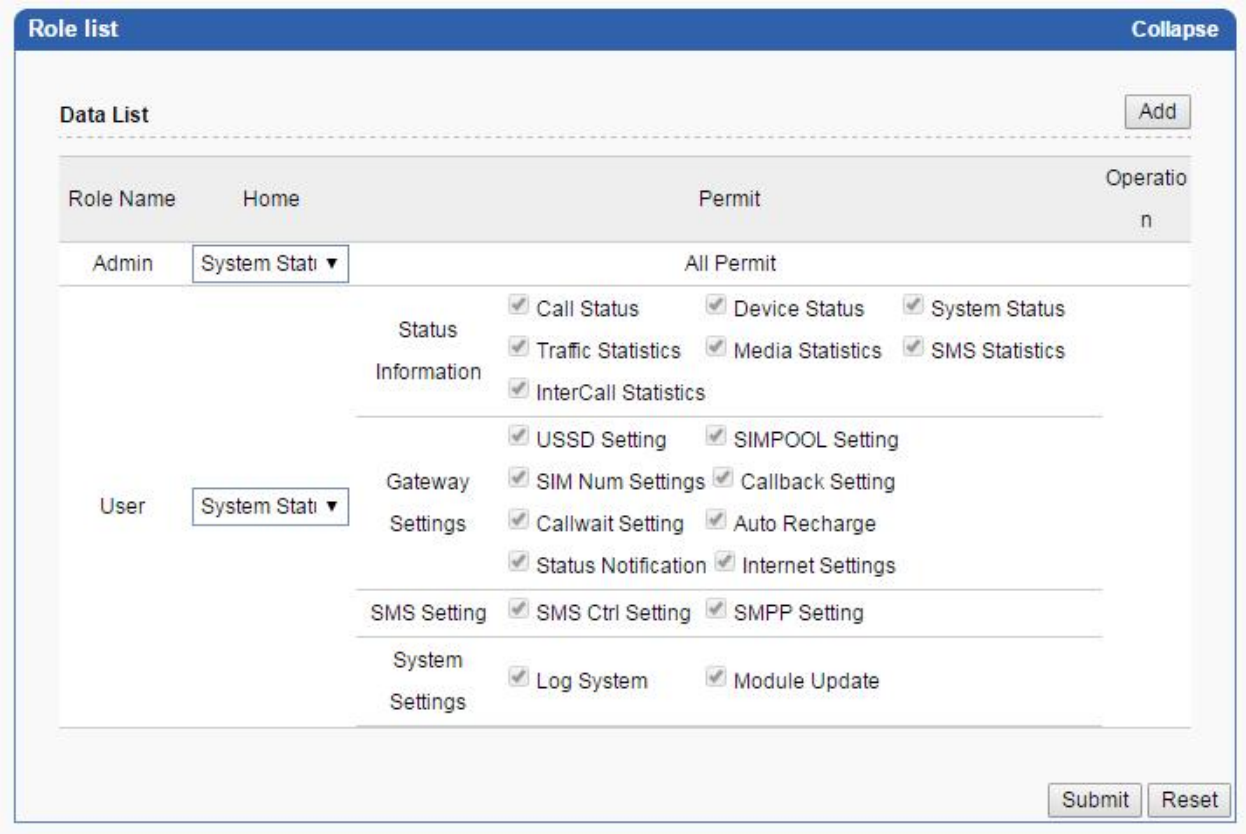
(If you need an ERMS/ETMS server for remote device management, you can contact us for free installation services)

9.5.5 SNMP

This is the connection configuration for the SNMP protocol, which you can configure if you have an SNMP server



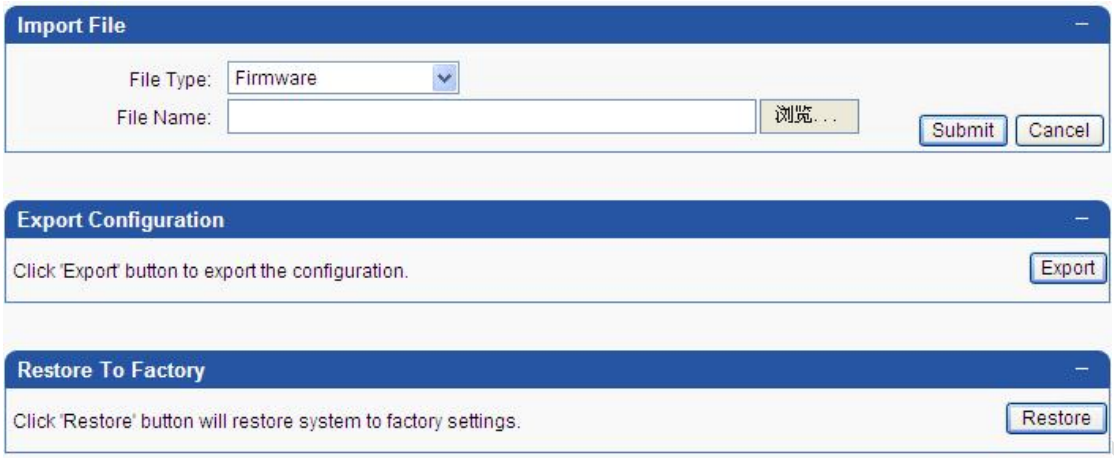
9.6 Role Management



Add: You can add and configure permissions, which can be assigned to the corresponding user when completed.
Role Name: The default is Admin and User, If you need to configure related permissions, you need to add a Role
Home: The default home page is displayed
Permit: The list of permissions this role can use

9.7 Update/ backup & Restore

The screenshot below shows the operation mode for system update/restore.



System Update

The content for system update includes:

- firmware
- configuration
- ramfs
- kernel
- uboot
- debug tools
- voice prompt
- voice cfg
- mac file
- lic file
- customized

The configuration fields are specified as following:

- File Type: Specify the content to update. Option values are listed above.
- File Name: Specify the content file name. Click button Browser and then select the target file from the popped file selection window.

Export Configuration

Click ‘Export’ button to export the configuration

Restore To Factory

System restore is used to restore the system to default settings. A message box will be popped for the confirmation of restore.

Firmware Version :

Please contact your account manager to get it!

9.8 Save & Reboot

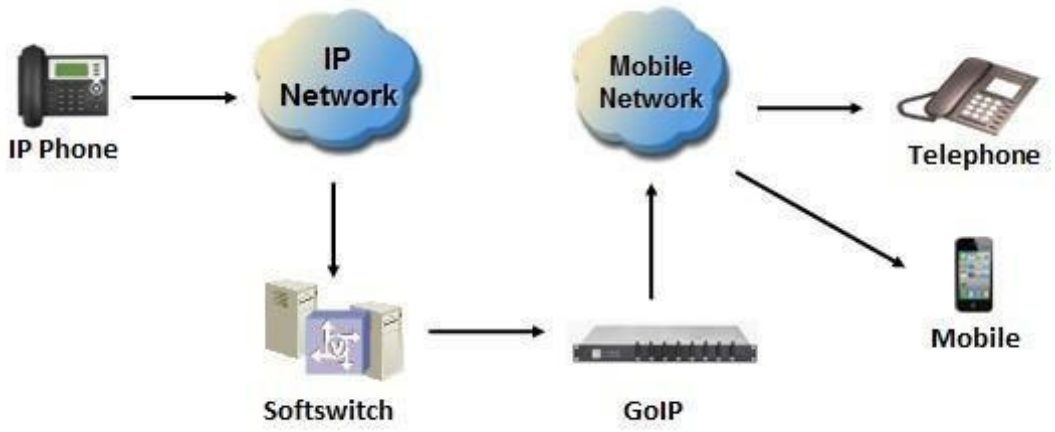
Generally, any modification should require the reboot of GP Gateway to bring the modification into effect. However, single Save without Reboot is also frequently used to save the modifications which will be effective on next reboot of GP Gateway.

The screenshot above shows the operation buttons. Button Save is used to save all the modifications while button reboot is used to save modifications first and then reboot device immediately.

❖10 Typical Used Scenario

This chapter presents some typical used scenarios for reference.

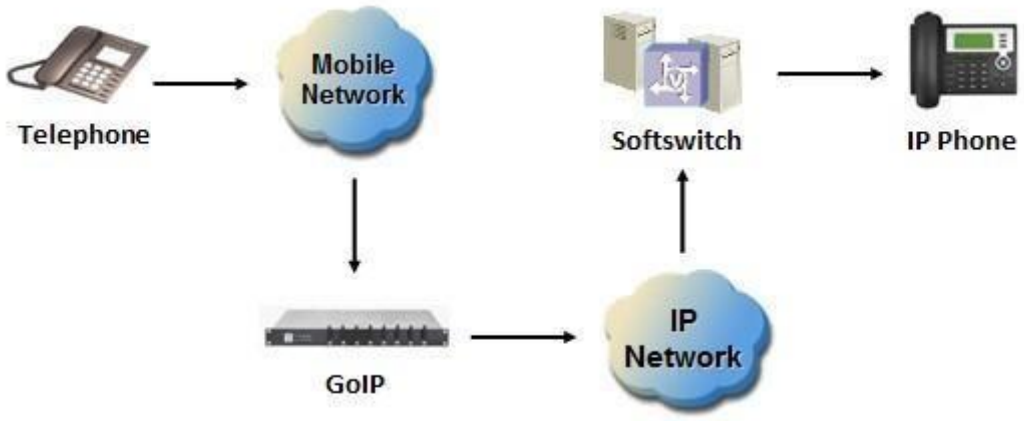
10.1 Landing from IP to Mobile Network



GP Gateway is now used more and more for telephone carriers to land their IP calls to mobile network. It plays the role of converting IP telephone signal to GSM telephone signal, relaying the media stream between IP network and Mobile network.

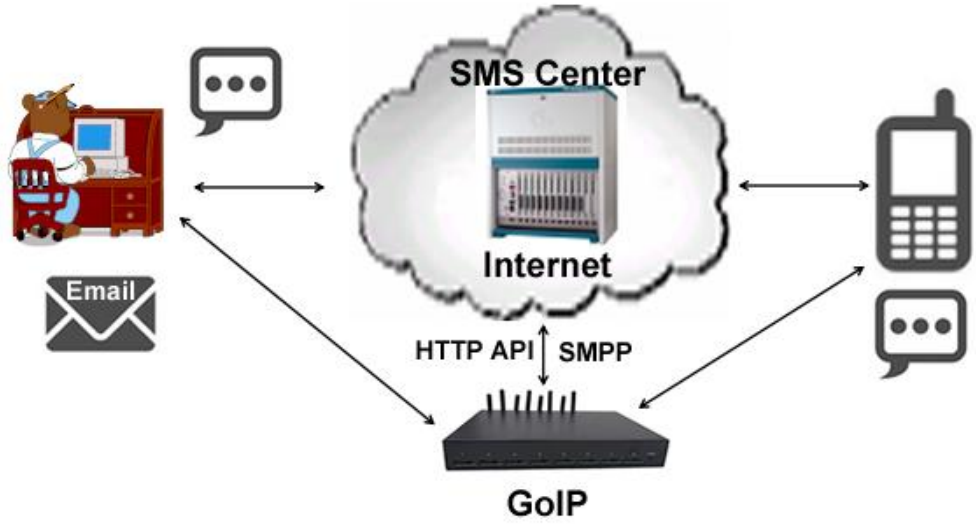
GP Gateway can be placed either in the LAN of Softswitch server or in public network environment which can be accessed by Softswitch server through public IP in different physical location.

10.2 Calls Access from Mobile Network to IP



GP Gateway can be used as the access from mobile network to IP. Any call made to the mobile card inserted into GP Gateway will be routed to IP network and connected to Softswitch server. The Softswitch server can redirect the caller to final destination user.

10.3 SMS/MMS & Email Access from Mobile Network to IP



GP Gateway can be used as the access from mobile network to IP, can send and receive SMS/MMS & Email. Any Send SMS made to the mobile card inserted into GP Gateway will be routed to IP network and connected to SMS platform server. The SMS platform server can redirect the Send SMS to final destination user.

❖11 HTTP API

11.1 Send SMS

11.1.1 GET HTTP

URL format is like this :
http://host:port/GP_send_sms.html?port= device port&username= device login username&password= device login password&charset=utf8&recipients= recipient number&sms= SMS content
host:port： Gateway IP address and Port(if do not fill in the default 80)
port: specify which port send the sms out，if don't have this option, it will random choose 1 idle port.
username: device login username
password: device login password
charset: the SMS content code。utf8, gb2312 available，default is utf8
recipients: the SMS receiver，separate with ";" if send multiple receiver
sms: the SMS contents.
for example:
http://1.1.1.1:8080/GP_send_sms.html?port=16&username=root&password=root&charset=utf8&recipients=10010&sms=cxye

11.1.2 POST HTTP

URL format is like this :
http://host:port/GP_post_sms.html?username= device login username&password= device login password
username: device login username
password: device login password
Parameter Content-Type in HTTP head should set to ‘application/json;charset=utf-8’
POST data: {“type”:”send-sms”, “task_num”:n, “tasks”:[{“tid”:tid_1, “to”:PhoneNumber, “sms”:content},… ,{“tid”:tid_n, “to”:Receiver Number, “sms”:content},]}
n:Total number of tasks for this API;
tid_1/tid_n:Task sequence number: any number can be filled in;
PhoneNumber:Receiver Phone Number;
Content:SMS message content;
Send Success Back: for example:
{"code":200,"reason":"OK","type":"task-status","status":[{"tid":98,"status":"0 OK"}]}

11.2 Receive SMS

HTTP URL format is like this :http://host:port/GP_get_sms.html?username= device login username&password=device login password &sms_id=xxx&sms_num=xxx
host:port： Gateway IP address and Port(if do not fill in the default 80)
sms_id：From which SMS began to receive（default 1，it mean Device receive the first SMS start）
sms_num：receive SMS amount (default 0 ,it mean receive all SMS ）

Received All SMS:
http://host:port/GP_get_sms.html?username=device login username&password=device login password
For received SMS:
To report: "code SCTS," code of 0 indicates success arrived, utf-8
Ordinary message: utf-8 BASE64 encoding

11.3 USSD

11.3.1 HTTP Send URL

http://host:port/GP_send_ussd.html?username=root&password=root&port=1&ussd=*123%23
(Click on the link above or fill in this url in the browser, or send through the java program
host:port: GP ip address, if have set port ,please add it(default 80)
username: device username
password: device password
port: specify which port send the sms out，if don't have this option, it will random choose 1 port.
ussd: the ussd contents (if your ussd have #,please use %23 instead)

11.3.2 HTTP back：

Demo:
{code:0,reason:”OK”,resp:”your balance is 100.00$”}
code: back code
reason: ussd send status
resp: ussd contents.