



OpenVox Communication Co., Ltd



Simbank User Manual

Version 1.0





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Revision History

Version	Date	Detail
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1. Overview

1.1 Introduction

OpenVox Simbank is an equipment that can achieve the centralized management and flexible adjustment of a large quantity of sim cards. It equipped with 64, 128 and 320 card slots, which can match up with our wireless gateways perfectly. After having registered on the Simbank, the wireless gateways are capable to connect with sim cards remotely via TCP/IP without inserting sim cards in the gateways' slots. It features simple operation too. The machine can adapt perfectly to 2G/3G/4G frequency band. Besides, it is compatible with 2G, 3G and 4G sim cards, supporting dynamic allocation and hot plug of sim cards.

1.1.1 Specifications

Table 1-1-1 Simbank Specifications

SIMBANK			
Product Name	simbank-64	simbank-128	Simbank-320
	Interface		
SIM Card Slots	64	128	320
Lan		1	
USB		1	
Ph	Physical Information		
Weight	2004g 2260g 7000g		
Dimension(W/D/H)	262*248*55mm 440*355*62mr		440*355*62mm
Power Consumption	13W 16W 25W		25W
Power Supply	12V DC/1.5A 100-240V AG		100-240V AC
SIM card Voltage	1.8V/3V		
Operation Temperature Range		0℃ ~40℃	
Operation Humidity Range	10%	~ 90% non-co	ondensing



Storage Temperature Range	-20℃ ~70℃
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1.1.2 LED Display Instructions

Table 1-1-2 LED Display Instructions

State	Description
Green	sim card has not been assigned
Red	sim card is not available
Green and Flash	sim card has been assigned
Red and Flash	sim card is out of call time
Blind	No card inserted or fail to report information

1.1.3 Front Panel Indicators

The PWR indicator will be light after power-on. The RUN indicator flashes after the system starts up normally. When the network is disconnected, it stops flashing. After pressing and holding the RST button for more than 5 seconds, the device will be restored to the factory settings and the indicator flashes faster.

1.1.4 Key Feature

SIM

- Compatible with 2G/3G/4G SIM cards
- Provides up to 320 SIM Slots
- Dynamic Allocation of SIM Cards
- Hot Swap of SIM Cards with No Service Interruption
- Support call restriction of SIM Cards individually
- Support SIM Card Switchover by Max Call Time
- Support SIM Card Switchover by Max Call Count
- Support SIM Card Switchover by Work Time



- Lock SIM card by Call Time
- Lock SIM card by Call Count
- Lock SIM card by Call Receive Count
- Support SIM card Group
- Support one-to-one allocation of gateways and card group
- Support inquiry mobile bill/number via SMS
- Support SIM card information batch export

Network Feature

- Network Method: Static IP
- Ping & tracerouteIPv4, UDP/TCP, ARP, NTP, DNS, HTTP/ HTTPS, SSH
- OPlink, NAT traverse
- Network Toolkit

Management & Maintenance

- Support cluster expansion
- Friendly GUI and easy configuration
- Support NTP time synchronization & Client time synchronization
- Firmware Update by HTTP
- Multiple Detailed LOG Output
- Support Chinese/English interface



1.2 Compatible Terminals

SWG Series Wireless Gateway

Notice: Simbank don't support sim card with pin.



1.3 Build Running Environment

The network environment of simbank is built as shown in the figure. The network connection with the gateway should be guaranteed when in use. The minimum uplink and downlink bandwidth is required to be above 4 Mbps, and the delay of connecting with gateway is not more than 400ms. Otherwise, the sim card cannot be sure work normally. During the call, the voice data does not transmitted via simbank.

Notice: You'd better insert the sim card into simbank before use it. For fear that insert sim card after power-on leads to loosen card slots and the simbank could not read sim card data correctly.

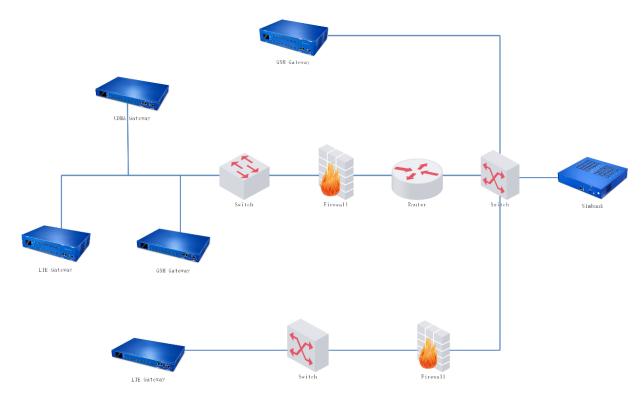


Figure 1-3-1 Network Configuration

1.4 Access Device

Step 1

Use a network cable to connect the device to the LAN or directly to the computer.

Step 2

The default IP address of device is 172.16.100.1. Modify the IP address of the local computer



to ensure that the computer and the device are in the same network segment.

Step 3

Input the IP address of device (172.16.100.1) in the browser's address bar and open the login page.

Step 4

Enter the username and password to log in to the device. The default username and password are both admin.



1.5 Quick Start

1.5.1 Simbank Settings

Step 1

Click "NETWORK" to enter the network settings page, select "Static" for Type, fill in the Address, Netmask, Default Gateway and DNS Server, save changes and apply.

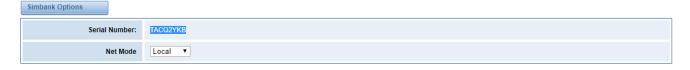
Figure 1-5-1 Network Configuration



Step 2

Navigate to **SYSTEM -> General**, the **Serial Number** in **Simbank Options** is serial number of this device, copy it, set **Net Mode** to Local and save.

Figure 1-5-2 Simbank Option

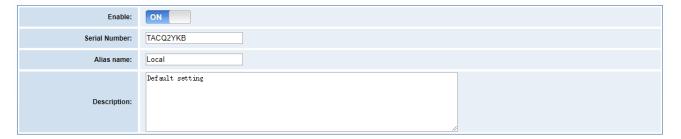


Step 3

Select **REGISTER** -> **Simbank**, click "**Add New Simbank Info**". Turn on the **Enable** switch (Be on by default). As shown in the figure, the Serial Number is filled with the simbank serial number copied in step 2.



Figure 1-5-3 Add New Simbank Info



Step 4

Select **REGISTER** -> **Gateway**, click "Add New Gateway Info", and register as shown.

Note: The serial number of wireless gateway needs to be obtained on the gateway. The serial number of each device is unique. If the **Enable** switch is off (it turns on by default when registered), neither simbank nor gateway can be registered. It is recommended to fill in the number of gateway channels in the **Gateway Line Number**. If the **Gateway Line Number** exceeds the number of channels, sim cards will be allocated according to the actual number of channels.

Figure 1-5-4 Create Gateway Info



The sim group must be checked when registering the gateway. The default sim group "ALL_SIM" containing all sim card members in simbank.

Step 5

After completing all the above step, enter the **REGISTER** -> **Gateway / Simbank** page, you can see the gateway information and simbank information you just added, the gateway / simbank's state will become online after successful registration.



1.5.2 Wireless Gateway Settings

Access to the Wireless Gateway and set parameters in **Module -> Simbank** page. As shown in the figure, the Simemusvr switch is **on**, the serial number is automatically generated for registration of the gateway. Select **Normal** network mode, and click "Save" to save settings.

Figure 1-5-5 Simbank Options



Figure 1-5-1 Simbank Options Description

Options	Description
Simemusvr Switch	When the switch is on, the local sim card will be not avaibale
Serial Number	The serial number generated for registratio, unique
Net Mode	Normal for local connection, OPlink for external network

Follow the above guide, you will register the gateway and simbank successfully, simbank will assign sim card for this wireless gateway remotely.



2 Function Settings

2.1 SYSTEM

2.1.1 Sim Status

The status of each sim card is displayed in the **Sim Status** page. The color and description of the corresponding indicator for each status are listed in the following table. When the mouse is hovering over the specific sim indicator, the location of this sim card and the remaining call time are displayed.

Color **Status** Description No card or card is not available Grey **Empty** Yellow Ready The sim card is ready to be assigned to the gateway Sleep In sleep, it takes a while to use Orange Blue Registering Already assigned, in registering Already assigned and registered successfully Green Assigned Red The SIM card is on a call **Talking** Orange(with notch) Locked The set call time has run out and cannot be assigned

Table 2-1-1 Page Indicator Instruction







Table	2-1-2	SIM	Card	Status	Description
Iabic	Z-T-C	JIIVI	Calu	Jiaius	DESCRIPTION

Option	Description
SimBank Index	Simbank serial number
SimBank ID & SimBank No	The position of SIM card on simbank
Gateway Index	Wireless gateway serial number
Gateway Sim No &	The port number assigned to the Sim card
Gateway Port No	on the wireless gateway
Phone No	Sim card mobile number
Sim Balance	Sim card balance
Sim Rest Time	The remaining call time of Sim card

2.1.2 Sim Info

The **Sim Info** page displays the information of each SIM card, including the port number assigned to the Sim card on the wireless gateway, the sim card mobile number, balance, and the information update time. These data can be exported to a txt format file.

Figure 2-1-2 SIM Card Info



Export Clean Up

2.1.3 Login Settings

This page allows you to modify the Web Login Settings and SSH Login Settings. You can also



specify the web server port number. Normally, the default login mode is "http and https". For security, you can change to "only https" mode.

Figure 2-1-3 Login Settings

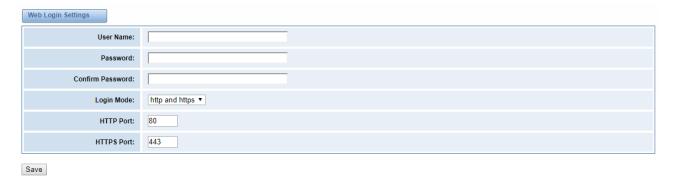


Figure 2-1-3 Login Settings Description

Option	Description		
Licar Nama	User Name: Allowed characters "+.<>&0-9a-zA-Z"		
User Name	Length: 1-32 characters		
Dassword	Allowed character must be any of [+.<>&0-9a-zA-Z]		
Password	Length: 4 - 32 characters		
Confirm	Diago input the came password as Dessword above		
Password	Please input the same password as 'Password' above.		
	Select the mode of login.		
	http and https: You can access gateway via link:		
Login Mode	http://simbankIP or https://simbankIP		
	https: You can only access gateway via link:		
	https://simbankIP		
Port	Specify the web server port number		

NOTES: Your gateway doesn't have administration role. All you can do here is defining the username and password to manage your gateway. And it has all privileges to operate your gateway.



2.1.4 General

2.1.4.1 Language Settings

You can choose different languages for your system. If you want to change the language, switch "Advanced" to "on" and "Download" your current language package. After that, you can modify it to the language required. Then upload the modified packages: "Choose File" and "Add". Setting as shown below:

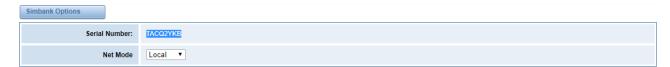
Figure 2-1-4 Language Settings



2.1.4.2 Simbank Options

The simbank serial number is the serial number generated automatically by the device, which is required when registering. Simbank supports cluster expansion. When the **Net Mode** is **Local**, simbank is registered to local device. Otherwise, it is registered to the remote end and user should fills in the SimProxy Server IP.

Figure 2-1-5 Simbank Options



2.1.5 System Time

In the **SYSTEM** -> **System Time** page, you can synchronize your Simbank time (**Sync from NTP** or **Sync from Client**) by different buttons.



Figure 2-1-6 Time Settings

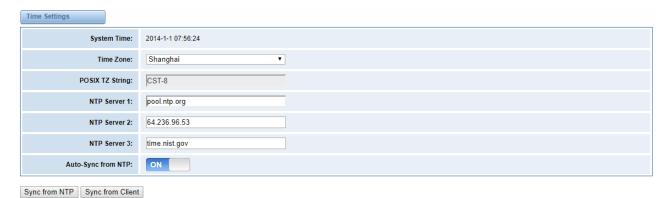


Table 2-1-4 System Time Description

Option	Description
System Time	Simbank system time
Time Zone	The world time zone. Please select the one
Time Zone	which is the same or the closest as your city
POSIX TZ String	Posix time zone strings.
NITD Company 1	Time server domain or hostname.
NTP Server 1	For example, [time.asia.apple.com].
NITD Company	The first reserved NTP server.
NTP Server 2	For example, [time.windows.com].
NTP Server 3	The second reserved NTP server.
NTP Server 3	For example, [time.nist.gov].
Auto-Sysc from	Whether to enable automatic synchronization
NTP	time from NTP server, On (enabled), OFF (off)
Sync from NTP	Sync time from NTP server.
Sync from Client	Sync time from local machine.

2.1.6 Tools

2.1.6.1 Reboot Tools

Reboot system, all current calls will be dropped.



Figure 2-1-7 Reboot Tools



2.1.6.2 Update Firmware

You can upload the firmware file to update the system.

Figure 2-1-8 Update Firmware



2.1.6.3 Restore Configuration

Sometimes there is something wrong with your simbank that you don't know how to solveit, mostly you will select **Factory Reset** and then your simbank will be reset to the factory status.

Figure 2-1-9 Restore Configuration

Restore Configuration

This will cause all the configuration files to back to default factory values! And reboot your gateway once it finishes.

Factory Reset



2.1.7 Information

On the "Information" page, there shows some basic information about the simbank. You can see Simbank Serial Number, software Version, memory usage and some help information.

Figure 2-1-10 Information

Simbank Serial Number:	TACQ2YKB
Product Name:	Simbank-128
Software Version:	1.0.8
Build Time:	2018-11-29-15:08:33
Memory Usage:	27.9949 % Memory Clean
Contact Address:	10/F, Building 6-A, Baoneng Science and Technology Industrial Park, Longhua New District, Shenzhen, Guangdong, China
Tel:	+86-755-82535461
Fax:	+86-755-83823074
E-Mail:	support@openvox.cn
Web Site:	http://www.openvox.cn
System Time:	2014-1-1 07:58:23
System Uptime:	0 days 07:57:59



2.2 REGISTER

2.2.1 Gateway

The **Gateway** page is the gateway information registered to the simbank, including the serial number, alias name, product name, gateway line number, Sim group, enable sign, on-line status, the heartbeat of time, and so on. In order to confirm whether the registration information is correct, you can enter the registration interface to check the registration status.

Figure 2-2-1 Gateway Infomation

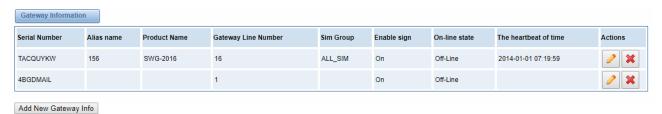


Table 2-2-1 Gateway Information Description

Option	Description
Serial Number	The serial number corresponding to the wireless gateway, unique
Alias Name	The note name of wireless gateway
Product Name	The model of wireless gateway
	Number of gateway channels, if the Gateway Line Number
Gateway Line Number	exceeds the number of channels, sim cards will be allocated
	according to the actual number of channels.
Sim Group	Choose SIM groups which allocate SIM cards to gateways
Enable Sign	The sign of enable switch which controls the registration of
Enable Sign	gateway to simbank. "1" is "enabled" and "0" is "disabled"
On-line state	Online/Offline Status
The heartbeat of time	The last time it received heartbeat package
Actions	✓ Modify,

Click "Add New Gateway Info", and register as shown. The serial number of wireless gateway needs to be obtained on the gateway.



Figure 2-2-2 Create Gateway Info



Table 2-2-2 Create Gateway Info Description

Option	Description
Enable	When it's "off" (it turns "on" by default when registered), neither
Enable	simbank nor gateway can be registered
Serial Number	The serial number corresponding to the wireless gateway, unique
Alias Name	The note name of wireless gateway
	Recommend to fill in the number of gateway channels. If the
Gateway Line Number	Gateway Line Number exceeds the number of channels, sim cards
	will be allocated according to the actual number of channels.
Sim Group	Choose SIM groups which allocate SIM cards to gateways
Description	Not mandatory

2.2.2 SimBank

The **Simbank** page is the simbank information registered to this device, including the serial number, alias name, product name, Simbank line number, enable sign, on-line status, and so on.

Figure 2-2-3 Simbank Information

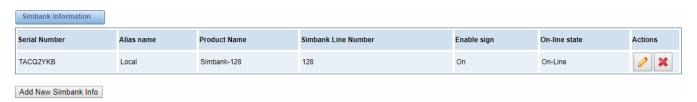




Table 2-2-3 Simbank Information Description

Option	Description
Serial Number,	The serial number of simbank
Alias Name	The note name of simbank
Product Name	The model of simbank
Simbank Line Number	Number of card slots provided by Simbank
Enable Sign	"1" is "enabled" and "0" is "disabled"
On-line State	Online/Offline Status
Actions	✓ Modify, ➤ Delete this registration information

Click "Add New Gateway Info", enter the simbank registration page. Turn on the **Enable Switch** (the default is "on"). All the options are required except for the "Description".

Figure 2-2-4 Add New Simbank Info



Table 2-2-4 Add New Simbank Info Description

Option	Description
Enable	When it's "off" (it turns "on" by default when
	registered), the simbank can't be registered
Serial Number	The serial number of simbank, unique
Alias Name	The note name of simbank
Description	Not mandatory

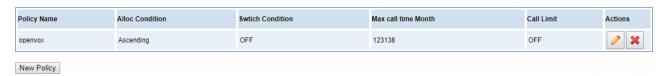


2.3 SIM POLICY

2.3.1 Policy

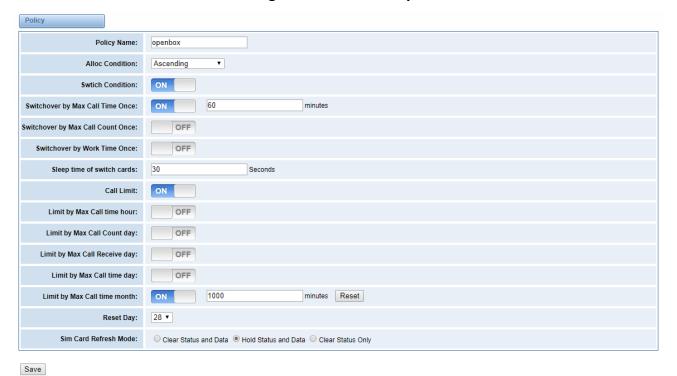
The strategy is used for switching, assigning, and disabling the sim card during the use process to cope with different plan by carriers, and prevent the sim card from being locked due to frequent use or overspending. Click the **SIM Policy** to enter the setting page.

Figure 2-3-1 Policy



Simbank supports call timing for each SIM card individually, and can limit the available time of the monthly call. Note that **this setting only works for cards inserted in this simbank**. Only when the call limit switch is turned on, the SIM card that run out of the available call time will be locked.

Figure 2-3-2 New Policy



The **Policy Name** is required and unique. The **Alloc Condition** options includes Ascending, Descending, Random, Min Call Time, and so on. The SIM card is assigned according to the selected priority order.



The **Switch Condition** is the toggle of the card switch strategy function. Once it opened, the card switch strategy parameter needs to be set. After meeting the card switch condition, the sim card will sleep for a period of time, and cannot be allocated for use during this time. There are three types of card switch strategies currently: call time, call count and work time.

When the **Switchover by Max Call Time Once** is opened, set the call duration. The allocated sim card will be switched when runs out of the time.

When the **Switchover by Max Call Count Once** is opened, set the call count. The allocated sim card will be switched when reaches the count.

When the **Switchover by Work Time Once** is opened, set the work time. The allocated sim card will be switched when reaches the time.

Sleep time of switch cards is the card sleep time after switched. The above three card switch strategies can be opened at the same time, and Simbank will switch the card according to the strategy that is first satisfied in actual use.

The **Call Limit** is the toggle of lock card function. Once it opened, the Call limit parameter needs to be set. After meeting the call limit condition, the sim card will be locked until next use period. During this time, the sim card cannot be allocated and used. **Call Limit** can be based on the call time, the call count, the call receive count, and so on.

The **Sim Card Refresh Mode** is the information processing method when the sim card reports information to the server.

Table 2-3-1 Policy Description

Option	Description
Policy Name	Unique
Alloc Condition	Priority order of assigning sim cards
	When the state of SIM card reaches one of the following
Swtich Condition	conditions, simbank will automatically put the SIM card to sleep,
	and select another ready SIM card assigning to the gateway.
Switchover by Max Call Time	When the total call time (outgoing and answered) of the SIM card
Once	reaches the set limit, the card will be switched.
Switchover by Max Call Count	When the total call count (outgoing and answered) of the SIM



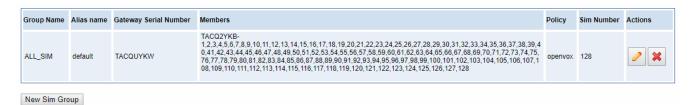
Once	card reaches the set limit, the card will be switched.
Switchover by Work Time Once	Start timing from the SIM card is assigned to the gateway. When
	the total work time reaches the set limit, the card will be
	switched.
Sleep time of switch cards	Sleep time of the switched card
	When the state of SIM card reaches one of the following
Call Limit	conditions, simbank will automatically lock the SIM card, and
	select another ready SIM card assigning to the gateway. They can
	only be assigned again after unlocked.
Limit by May Call count hour	When the call count (outgoing and answered) per hour reaches
Limit by Max Call count hour	the set value, the card will be locked until to the next whole point.
Limit by Max Call Count day	When the call count (whether or not answered) per day reaches
Littlit by Wax Call Count day	the set value, the card will be locked until to the next day.
Limit by May Call Possive day	When the call count (outgoing and answered) per day reaches the
Limit by Max Call Receive day	set value, the card will be locked until to the next day.
Limit by May Call time day	When the total call time (outgoing and answered) per day reaches
Limit by Max Call time day	the set value, the card will be locked until to the next day.
	When the total call time (outgoing and answered) per month
Limit by Max Call time month	reaches the set value, the card will be locked until to the next
	month's reset day.
Reset Day	Reset date of monthly call timing
Sim Card Refresh Mode	the refresh mode of SIM card status data

2.3.2 Sim Group

Simbank supports Sim group, which can set the specified sim card group for each gateway. The relationship between the gateway and the card group is one-to-one, and one card group can only be used by one gateway device.

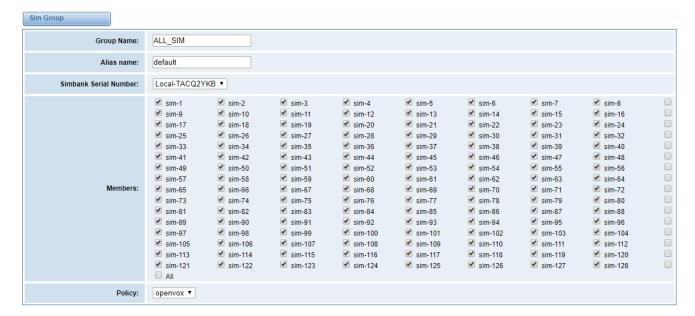


Figure 2-3-3 SIM Group



Go to SIM POLICY -> Sim Group. Create a new SIM card group and name it. In the "Simbank Serial Number", select the Simbank where the SIM card to be used is located and check off the Simbank Members, select the created Policy and click Save. Once set, the gateway will only assign the SIM card in the "ALL_SIM" group to the corresponding gateway, and the SIM card in the "ALL_SIM" group will not be assigned to other gateways.

Figure 2-3-4 New SIM Group



One SIM card can only belong to one SIM card group. If you want to modify the SIM card group to which the specified SIM card belongs, you must first delete (uncheck) the SIM card from the original SIM group and then add it to another SIM group.



2.4 SMS

Simbank can specify the SIM card to send SMS messages. This function can also be used to query the number and phone bill, which makes the management of the SIM card more convenient.

2.4.1 SMS Sender

Enter SMS——>SMS Sender page, select simbank and corresponding sim card, fill in **Destination**Number and message then click send.

Select Simbank TACQ2YKB ▼ sim-2 sim-1 sim-3 sim-4 sim-5 sim-6 sim-7 sim-8 sim-10 sim-9 ✓ sim-11 sim-12 sim-13 sim-14 sim-15 sim-16 sim-34 sim-35 sim-36 sim-37 sim-17 sim-39 sim-40 sim-41 sim-42 sim-43 sim-44 sim-45 sim-46 sim-64 sim-65 sim-66 sim-67 sim-68 sim-71 sim-72 sim-73 sim-74 sim-75 sim-76 sim-79 sim-80 sim-83 sim-84 sim-87 sim-88 sim-89 sim-90 sim-91 sim-95 sim-96 sim-97 sim-98 sim-99 sim-100 sim-101 sim-102 sim-103 sim-104 sim-105 sim-106 sim-107 sim-108 sim-109 sim-110 sim-111 sim-112 sim-113 sim-114 sim-115 sim-116 sim-117 sim-118 sim-127 sim-128 ☐ All 选择文件 未选择任何文件 Load numbers from text file: 10086 **Destination Number:** "; semicolon" , "| vertical Bar" , " , comma " , " blank " , " : colon " , " . dot " were treated as separators in Destination Number List Message: Action: Send

Figure 2-4-1 SMS Sender

2.4.2 SMS Inbox

The SMS Inbox page displays the SMS reply to the query messages sent from toolkit (simbank will



not obtain SMS messages from the gateway), and these text messages will be clean up after shutdown. Users can view and filter them.

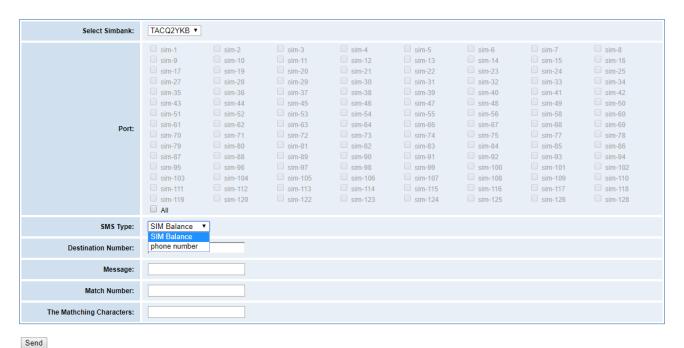
Figure 2-4-2 SMS Inbox



2.4.3 Toolkit

Use **Toolkit** sends SMS messages need to fill in five parameters: **SMS Type** (SIM Balance / phone number), **Destination Number**, **Message**, **Match Number** (the number used to receive the SMS, recommend to be the same as the number that texting message), and **The Matching Characters**. The reply SMS can be queried on the **SMS->SMS Inbox** page. (Only accept SMS sent by simbank)

Figure 2-4-3 Toolkit



Fill in **The Matching Characters** according to the received SMS. For example, user want to inquiry the phone number, and the received message is "Your phone number is xxxxxxxxxxxx...", then fill in the content "number" in **The Matching Characters**. Generally speaking, the more you fill in, the more accurate the query results is, but on the other hand, in order to avoid the matching characters too long and consume too much time in matching, it is limitted that **The Matching**



Characters filled in here does not exceed 30 characters.

Before using the Simbank toolkit for inquiry, it is best to use the gateway to send and receive text messages to determine the format of the received message and the matching content.



2.5 NETWORK

2.5.1 Ethernet Settings

Click **NETWORK** to enter the **Ethernet Settings** page. There are two optional types to set the LAN port IP: **Factory** and **Static**. Factory is the default type, and the IP is 172.16.100.1. This page is not editable when type is "**Factory**". Select the type as "**Static**", set the IP address, netmask, default gateway, DNS Servers and save it.

LAN IPv4 Interface: eth0 Static ▼ Type: MAC: A0:98:05:0E:61:41 IPv4 Settings À 172.16.6.141 Address: Netmask: 255.255.0.0 Default Gateway: 172.16.0.1 DNS Servers 172.16.0.1 DNS Server 1: 172.168.1.2 DNS Server 2: DNS Server 3: 172.168.1.3 DNS Server 4: 172.168.1.4

Figure 2-5-1 Network Settings

Table 2-5-1 Network Settings Description

Option	Description
Interface	The name of network interface.
Type	The method to get IP.
	Factory: Getting IP address by Slot Number (System
	information to check slot number).
	Static: manually set up your Simbank IP.
MAC	Physical address of your network interface.
Address	The IP address of your Simbank.
Netmask	The subnet mask of your Simbank.



	Default Gateway	Default Simbank IP address.
	DNS Server	A list of DNS IP address. Basically this info is from
		your local network service provider.

2.5.2 Oplink

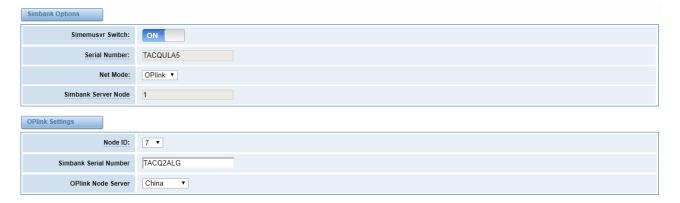
When the gateway and simbank do not belong to the same LAN, they cannot be directly accessed. In this case, we provide the OPlink function to connect the two ends. For Simbank, enter the **NETWORK** -> **OPlink** page shown in Figure 2-5-2 to configure, click Save after the configuration is complete, if the connection is successful, you can see the **connection status** below shows a green "**connected**" prompt.

Figure 2-5-2 OPlink



Correspondingly change the register settings on the wireless gateway. Set the network mode to OPlink in the MODULE——>Simbank page. In this connection mode, note that the Node ID cannot be duplicated with other gateways registered in the same simbank.

Figure 2-5-3 OPlink Settings



When using OPlink, if the network delay is too large, the remote card may not be available. Please



replace the server or optimize the network environment.

2.5.3 Toolkit

It is used to check network connectivity. Support Ping command on web GUI

Figure 2-5-4 Toolkit

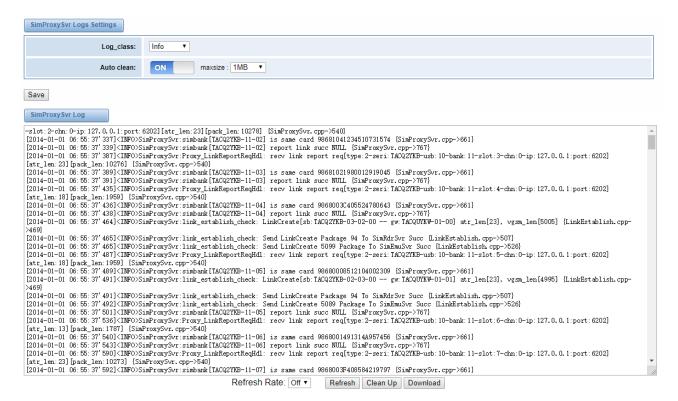




2.6 LOG

2.6.1 Server Client

Figure 2-6-1 SimProxySvr Logs





2.6.2 Client Log

Figure 2-6-2 Client Log

