

CNI121 IP Phone User Manual

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1. CNI121 Features

1.1 Appearance



1.2 Interface



Power: Output Power, 5VDC, 1A.

WAN: RJ45, 10/100M port.

LAN: RJ45, 10/100M port.

1.3 Software

- Support three SIP accounts at the same time.
- Support NAT

- DHCP client and server
- Support PPPoE
- Upgrade firmware through FTP,TFTP or HTTP.
- Support major G7.xxx CODEC.
- VAD,CNG.
- G.165 compliant 16ms echo cancellation
- Tone generation and Local DTMF regeneration according with ITU-T
- E.164 dial plan and customized dial rules
- Support inband audio, RFC2833, SIP info and so on for DTMF transfers mode.
- Hotline
- Call forward, Call Transfer, 3-way conference calls
- Caller ID display
- DND(Do Not Disturb), Black List, Limit List
- Web management.
- Telnet remote management
- Adjustable username,userpassword and super password

1.4 Standard and Protocols

- IEEE 802.3 /802.3 u 10 Base T / 100Base TX
- PPPoE: PPP Protocol over Ethernet
- DHCP Client and Server: Dynamic Host Configuration Protocol
- Support G.711a/u,G729A/B, G723.1 audio codec
- SIP RFC3261、RFC3262、RFC3666、RFC2543
- TCP/IP: Internet transfer and control protocol
- RTP: Real-time Transport Protocol
- RTCP: Real-time Control Protocol
- Telnet: Internet's remote login protocol
- DNS: Domain Name Server
- TFTP: Trivial File Transfer Protocol
- HTTP: Hyper Text Transfer protocol
- FTP: File Transfer protocol

1.5 Operating requirement

- Operation temperature: 0 to 40° C (32° to 104° F)
- Storage temperature: -30° to 65° C (-22° to 149° F)
- Humidity: 10 to 90% no dew

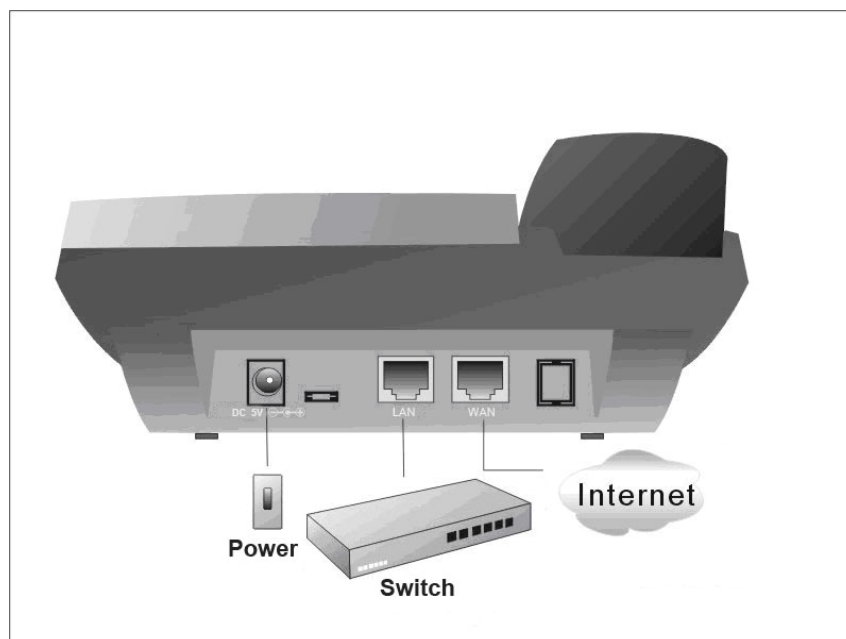
1.6 Package

- Size: 338x220x85mm
- Packing List
 - ✓ CNI121 IP Phone X 1
 - ✓ One Power adaptor
 - ✓ One CD

1.7 Installation

Use ethernet cable to connect CNI121's LAN port and your computer. Set your computer's ip to the network 192.168.10.x or using dynamic obtain IP. Open your web browser and key in 192.168.10.1. Then you will see the logon page of CNI121, the default username and password is [admin/admin](#) for administrator.

Set up page for VoIP use only:



2. Web Configuration

2.1 Status Display

This page show CNI121's running state.

Network: Shows the WAN and LAN port connecting state and current settings.

VoIP: Show the working state of SIP, you can see whether CNI121 has registered the SIP server.

Phone Number: Show the SIP phone number

Network		
WAN		
MAC address:	00:a1:5a:00:45:01	
IP address:	192.168.1.176	Static
Netmask:	255.255.255.0	
Gateway:	192.168.1.31	
LAN		
IP address:		
DHCP Server:	Off	

VoIP	
SIP	
Register Server Addr:	
Proxy Server Addr:	
Register Server:	No
State:	Unregister
SIP STUN:	Off
Phone Number	
Public SIP:	

2.2 Network Config

2.2.1 WAN Config

The screenshot shows the 'WAN Configuration' page with the following fields and values:

Field	Value
IP assign:	Static
PPPoE Username:	
PPPoE Password:	
IP address:	192.168.1.176
Netmask:	255.255.255.0
Gateway:	192.168.1.31
DNS Domain:	zycoo.com
DNS Server:	
Spare DNS:	
MAC address:	00:a1:5a:00:45:01

An 'Apply' button is located at the bottom left of the configuration area.

WAN port network setting page.

Support Static IP, Dynamic obtain IP and PPPoE.

➤ **Configure Static IP:**

----Select Static;

----Set CNI121's IP address in the *IP Address*;

----Set netmask in the *Netmask* field;

----Set router IP address in the *Gateway*;

----**DNS Domain:**

----Set local DNS server in the Preferred *DNS* and the *Spare DNS*

➤ **Configure to dynamic obtain IP:**

---- Select DHCP;

If there is DHCP server in your local network, CNI121 will automatically obtain WAN port network information from your DHCP server.

➤ **Configure PPPoE:**

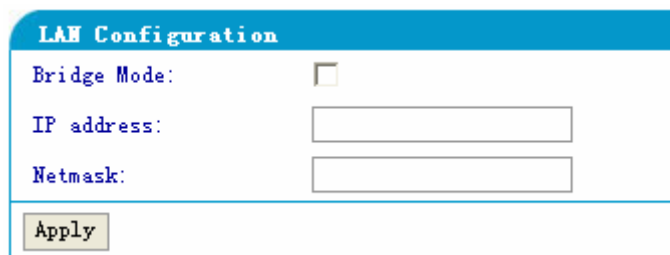
---- Select PPPoE

---- Enter PPPoE username and password in the *PPPoE username* and *PPPoE password*.

CNI121 will automatically obtain WAN port network information if PPPoE setting and the setup are correct.

Notice: If user accesses the IP phone through WAN port. He/She should use the new IP address to access the IP phone when the WAN port address was changed.

2.2.2 LAN Config



LAN Configuration

Bridge Mode:

IP address:

Netmask:

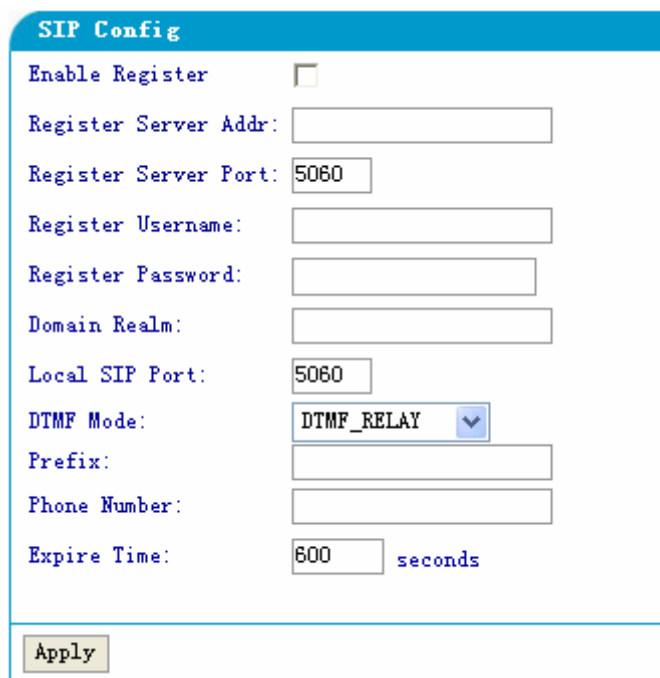
Apply

Bridge Mode: Enable this option to switch to bridge mode. IP phone won't assign IP for its LAN Port in bridge mode and its LAN and WAN port will be in the same network. **(This setting won't take effect unless you save the configuration and reboot the device)**

IP address, Netmask: Set the IP and Netmask for the LAN

2.3 Protocol Config

2.3.1 SIP Service Config



SIP Config

Enable Register

Register Server Addr:

Register Server Port:

Register Username:

Register Password:

Domain Realm:

Local SIP Port:

DTMF Mode:

Prefix:

Phone Number:

Expire Time: seconds

Apply

Setting page of SIP server:

Enable Register: Enable/Disable SIP register. CNI121 won't sent REGISTER info to SIP server if disable register.

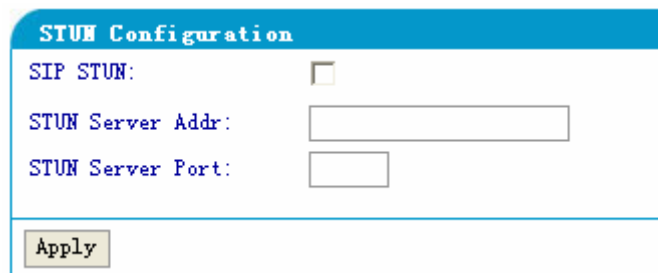
Register Server Addr: Register address of SIP server

Register Server Port: Register port of SIP server

Register Username: Username of your SIP account (Always the same as the phone number)

- Register Password:** Password of your SIP account
- Domain Realm:** SIP domain, enter the sip domain if any, otherwise CNI121 will use the proxy server address as sip domain.
- DTMF Mode:** Select DTMF Mode, Support RELAY, RFC2388, SIP info.
- Prefix:** Select all of phone number prefix.
- Local SIP port:** Local SIP register port, default 5060
- Phone Number:** Phone number of your SIP account
- Expire Time:** register expire time, default is 600 seconds. CNI121 will auto configure this expire time to the server recommended setting if it is different from the SIP server.

2.3.2 STUN Config



STUN Configuration

SIP STUN:

STUN Server Addr:

STUN Server Port:

Apply

Setting page of STUN.

- SIP STUN:** Enable/Disable SIP STUN service
- STUN Server Addr:** Configure STUN server address
- STUN Server Port:** Configure STUN port, default 3478

2.4 Call Service

2.4.1 Call Service Config

Call Service

Hot Line:

Call Forward: Off Always Busy No Answer

Forward Number:

Forward IP Address:

Forward Port:

No Answer Time: seconds

No Disturb:

Ban Outgoing:

Enable Call Transfer:

Enable Call Waiting:

Enable Three Way Call:

User configure the call service such as hotline, call forward, call transfer, 3-way conference call, etc in this page.

- Hotline:** Configure hotline number.
- Call Forward:** Configure call forward function(default Off)
- Off : Disable the call forward
- Always: Any one call this phone will be forward to the destination number.
- Busy : If some one calls you when you having a call, the caller will be forwarded to the destination number.
- No answer: If some one calls you and no one answer the caller during the No answer time, the call will be forward to the destination number.
- Forward IP Address:** Forward destination address.
- Forward Port:** Forward destination port.
- No Answer Time:** No answer call forward time setting
- Forward Number:** Configure Forward number
- No Disturb:** Do not disturb, enable this option to refuse any calls
- Ban Outgoing:** Enable/Disable this to ban outgoing calls.
- Enable Call Transfer:** Enable/Disable Transfer function.
- Enable Call Waiting:** Enable/Disable Call Waiting function.
- Enable Three Way Call:** Enable/Disable three way conference call.

2.4.2 Black List and Limit List

In the page, you can config Black List and Limit List.

- Black List:** Incoming call in these phone numbers will be refused
Limit List: Outgoing calls with these phone numbers will be refused

2.5 Advance

2.5.1 DHCP Service

DHCP server manage page.

User may setting and modify DHCP server information in this page.

- DHCP Server:** Enable/Disable DHCP Server
Start IP Address: Start IP of lease table.
End IP Address: End IP of lease table. Network device connecting to the CNI121

LAN port can dynamicly obtain the IP in the range between start IP and end IP.

- Lease Time:** DHCP server lease time.
Netmask: Netmask of lease table.
Gateway: Default gateway of lease table.
DNS Server: Default DNS server of lease table.

Notice: This setting won't take effect unless you save the config and reboot the device.

2.5.2 NAT Service

NAT Service	
NAT Server:	<input type="checkbox"/>
<input type="button" value="Apply"/>	

NAT Configuration	
Transfer Type:	TCP <input type="button" value="v"/>
Inside IP:	<input type="text"/>
Inside Port:	<input type="text"/>
Outside Port:	<input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Delete"/>	

NAT Config Table			
Inside IP	Transfer Type	Inside Port	Outside Port

In this page, you can set NAT server and see NAT information.

NAT Server: Enable/Disable NAT service (default Off)

Transfer Type: Transfer type using port mapping

Inside IP: LAN device IP for port mapping

Inside Port: LAN device port for port mapping

Outside Port: WAN port for port mapping

2.5.3 SIP Config

Setting page of SIP1 spare server:

Enable Register: Enable/Disable SIP1 register.

Register Server Addr: Register address of SIP server

Register Server Port: Register port of SIP server

Register Username: Username of your SIP account (Always the same as the phone number)

Register Password: Password of your SIP account

Local SIP port: Local SIP register port, default 5060

Phone Number: Phone number of your SIP account

Expire Time: register expire time, default is 600 seconds.CNI121 will automatically configure this expire time to the server recommended setting if it is different from the SIP server.

Setting page of SIP2 spare server:

Enable Register: Enable/Disable SIP2 register.

Register Server Addr: Register address of SIP server

Register Server Port: Register port of SIP server

Register Username: Username of your SIP account (Always the same as the phone number)

Register Password: Password of your SIP account

Local SIP port: Local SIP register port, default 5060

Phone Number: Phone number of your SIP account

Expire Time: register expire time, default is 600 seconds. CNI121 will automatically configure this expire time to the server recommended setting if it is different from the SIP server.

2.5.4 MMI Filter

The screenshot displays the MMI Filter configuration interface. At the top, there is a section titled "MMI Filter" with a checkbox and an "Apply" button. Below this is the "MMI Filter table" section, which includes input fields for "Start IP", "End IP", and "Start IP to be deleted", along with "Add" and "Delete" buttons. At the bottom, a table shows columns for "Start IP" and "End IP".

MMI filter is used to make access limit to CNI121IP Phone.

When MMI filter is enable. Only IP address within the Start IP and end IP can access CNI121 IP Phone.

2.5.5 DSP Config

The screenshot displays the DSP Config interface. It includes the following settings: "Prior Coding Rule" set to "g711Ulaw64k", "G729 Payload Length" set to "20ms", "volume" set to "0" (with a range of 0-7), and "Silence Compress" with an unchecked checkbox. An "Apply" button is located at the bottom left.

Prior Coding Rule: Select the prefer CODEC; Support G.711a/u, G.723, G.729A/B

G.729 Payload Length: G.729 payload length

Volume: Select volume

Silence Compress: Enable/Disable Silence Compress.

2.5.6 Digital Map

Digital Map is a set of rules to determine when the user has finished dialing.

Digital Map is based on some rules to judge when user end their dialing and send the number to the server. CNI121 support following digital map:

Time Out: Specify the timeout of the last dial digit. The call will be sent after timeout.

End With "#": Use # as the end of dialing.

Fixed Length: When the length of the dialing match, the call will be sent.

User-defined Rule: If the Prefix and Length match, the call will be sent.

2.5.7 Dial-Peer

Dial-Peer						
Phone Number	Destination	Port	Prefix	Suffix	Replace	Replace-Len
4444	192.168.1.179	5060				
2T		5060				1
123		5060			8675583018	
0T		5060			86	1

CNI121 provide flexible dial rule, with different dial-rule configure, user can easily implement the following function:

----Replace, delete or add prefix of the dial number.

----Make direct IP to IP call

----Place the call to different servers according the prefix.

You can click "Add" to add a new dial rule. Below is the detail setting of the dial-rule:

Add Dial-Peer

Phone Number:	
Destination:	
Port:	
Prefix:	
Suffix:	
Replace:	
Replace-Len:	

Phone Number: The Number suit for this dial rule, you can use the number as full match or prefix match. Full match means that if the number use dials is the completely same as this number, the call will use this dial-rule. Prefix match means that if prefix of the number that the user dials is the same as the prefix, the call will use this dial-rule, to distinguish from the full match case, you need to add "T" after the prefix number in the phone number setting.

Destination(optional): call destination, can be IP or domain. Default is none, in this case the call will be routed to the SIP server.

Port(optional): Configure the port of the destination, default is 5060.

Prefix(optional): Configure prefix, show no prefix if not set.

Suffix(optional): Configure Suffix, show no suffix if not set.

Replace(optional): Replace the first N number. N is set in the Replace-Len.If the N is 0, the number will be replace by all.

Replace-Len(optional):Configure to Replaced length of the number.

Instance:

Dial-Peer						
Phone Number	Destination	Port	Prefix	Suffix	Replace	Replace-Len
4444	192.168.1.179	5060				
2T		5060				1
123		5060			8675583018	
0T		5060			86	1

4444 rule: when you dial 4444 , the call with send to 192.168.1.179, suit for LAN application without set up a sip server.

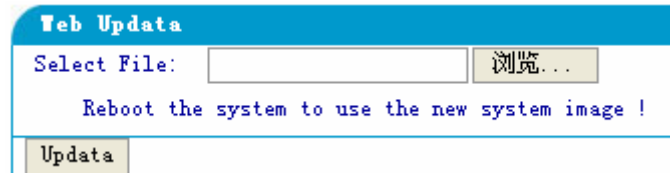
2T rule: If the call starts with 2, the first 2 will be deleted, and the rest number will be sent to private SIP server.

123 rule: Dial 123 and will send 8675583018 to your server. Used as speed dial function.

0T rule: If the calls begins with 0, the first 0 will be replace by 86. Means that if you dial 075583018049 and CNI121 will send 8675583018049 to your server.

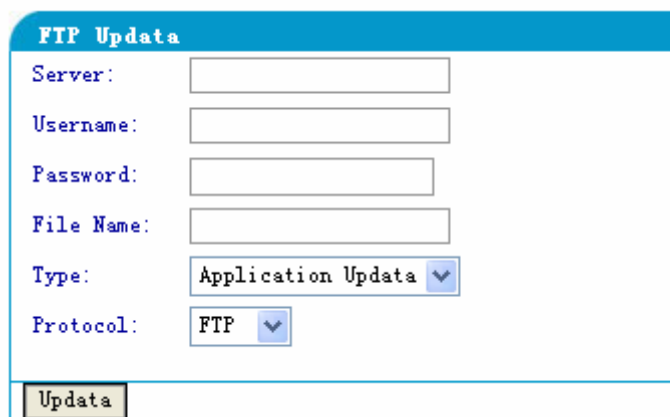
2.6 System Management

2.6.1 Update



The 'Web Update' interface features a blue header with the text 'Web Update'. Below the header, there is a 'Select File:' label followed by a text input field and a '浏览...' (Browse...) button. A message 'Reboot the system to use the new system image !' is displayed in the center. At the bottom, there is an 'Update' button.

Web Update: Update firmware. Firmware file is .bin extension



The 'FTP Update' interface features a blue header with the text 'FTP Update'. Below the header, there are several input fields: 'Server:', 'Username:', 'Password:', and 'File Name:'. There are also two dropdown menus: 'Type:' with 'Application Update' selected, and 'Protocol:' with 'FTP' selected. At the bottom, there is an 'Update' button.

TFTP/FTP Update: upload/download the configure file with FTP or TFTP server, or download firmware from FTP or TFTP server.

2.6.2 Time Set

Through the page, user can use SNTP to get system time or set time manually.

Select SNTP: Set enable/disable SNTP service, default enable
SNTP Server: Set SNTP server
Timezone: Set timezone
Time out: SNTP time out

Manual Time Set: Set time manually

2.6.3 Change Password

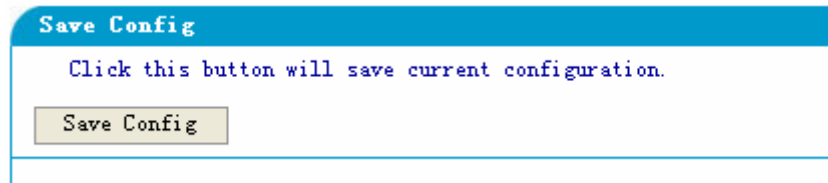
Set web access account.(default username and userpassword is admin/admin)



The screenshot shows a web interface titled "Super Password". It contains a label "Super Password:" followed by a text input field with four black dots. Below the input field is a button labeled "Apply".

Set keypad password. (default password is 123)

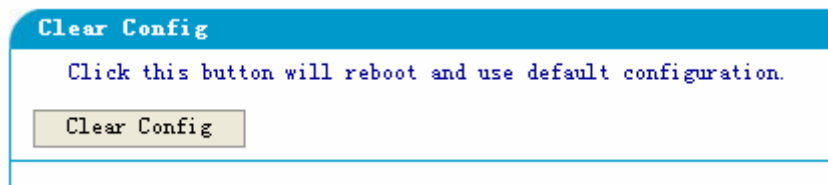
2.6.4 Save Config



The screenshot shows a web interface titled "Save Config". It contains a text instruction: "Click this button will save current configuration." Below the instruction is a button labeled "Save Config".

User can save current configuration in this page.

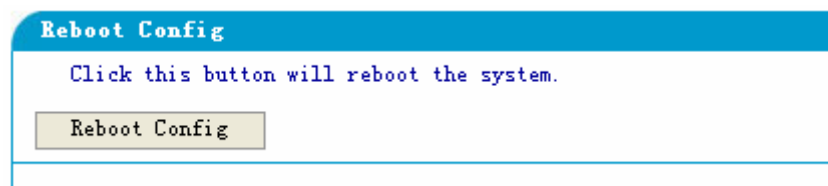
2.6.5 Clear Config



The screenshot shows a web interface titled "Clear Config". It contains a text instruction: "Click this button will reboot and use default configuration." Below the instruction is a button labeled "Clear Config".

The operation will reboot and use default configuration.

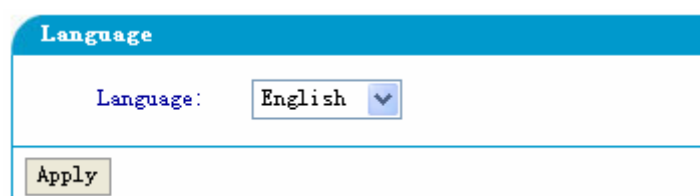
2.6.6 Reboot



The screenshot shows a web interface titled "Reboot Config". It contains a text instruction: "Click this button will reboot the system." Below the instruction is a button labeled "Reboot Config".

Reboot CNI121. Please always save config before reboot, otherwise the setting will return to previous setting.

2.7 Language



The screenshot shows a web interface titled "Language". It contains a label "Language:" followed by a dropdown menu showing "English" with a downward arrow. Below the dropdown is a button labeled "Apply".

User can select language in this page. The web will refresh when you select a language and apply it.

2.8 Phone Book

Phone Book			
Index	Name	Phone Number	address
1	x-lite	28088886665	
2	bei	4444	

User can add and show phone book in this page.

You can click “Add” to add a new item. Below is the detail setting of the phone book:

Name:

Phone Number:

address:

Name: User Name
Phone Number: User Phone Number
Address: User Address

3. Use keypad to configure CNI121

3.1 Keypad function

User can configure CNI121 through its keypad. List below is the keypad function.

Keypad	Mode	Function/Display
Idle mode	----	Show current time
EXIT	Config mode	Back to previous level
MENU	Idle mode	Enter config mode,default password 5186
UP	Calling mode	Volume up (Max:8)
	Config mode	up
DOWN	Calling mode	Volume down (Min:1)
	Config mode	down
OK	Config mode	Confirm or enter sub-menu
R. CALLS	Idle mode	Display Outgoing call, incoming call, missed call
MUTE/DEL	Calling mode	Mute
	Dialling mode	delete digits
	Config mode	Delete digits
REDIAL	Calling mode	Redial key
SPEAKER	Calling mode	Handfree
P. BOOK	Idle mode	Enter Phone book
TRANSFER	Calling mode	Trasfer, detail refer FAQ
CONFERENCE	Calling mode	3-way conference call. Detail refer FAQ
HOLD	Calling mode	Call hold
0—9	Calling mode	Digits 0~9
	Config mode	Hit quickly to switch between numeric or alphabetic
"##" #	Config mode	Use as end key of dialing or the dial number

3.2 Keypad Menu

User may use **MENU**, **OK**, **EXIT**, **UP**, **DOWN** to config CNI121 detail setting.

Press **MENU** to enter config mode, and the default password is 123.

Below list the keypad menu of CNI121

CNI121 Keypad Menu			
Level 1	Level 2	Level 3	Level 4
Network	WAN	Net Mode	Static IP
			DHCP
			PPPoE
		Static Setting	IP Address
			Netask
			Gateway

			DNS0	
			DNS1	
		PPPoE	Account	
			Password	
SIP	Register	OFF		
		ON		
	Registrar Setting	Registrar address		
		Registrar port		
		Username		
		Password		
	Phone number			
	Proxy server	Proxy address		
		Proxy port		
		username		
		password		
Signal Port				
STUN	Enable			
	Server			
	Port			
Call Service	Hotline			
	Call forward	Condition		
		Forward number		
		Forward address		
		Forward port		
		No answer time		
	Call transfer			
	Call waiting			
	No Disturb			
	Ban outgoing			
	Three call			
Limit list				
Black list				
System settings	Super password			
	SNTP	SNTP enable		
		SNTP Server		
Save settings				
Default settings				
Reboot				

Phonebook settings

4. FAQ

4.1 How many servers may it register simultaneously?

CNI121 is able to register two SIP servers simultaneously, and redundancy servers. User can configure the dial peer to route calls between these servers.

4.2 Why the settings vanish after reboot?

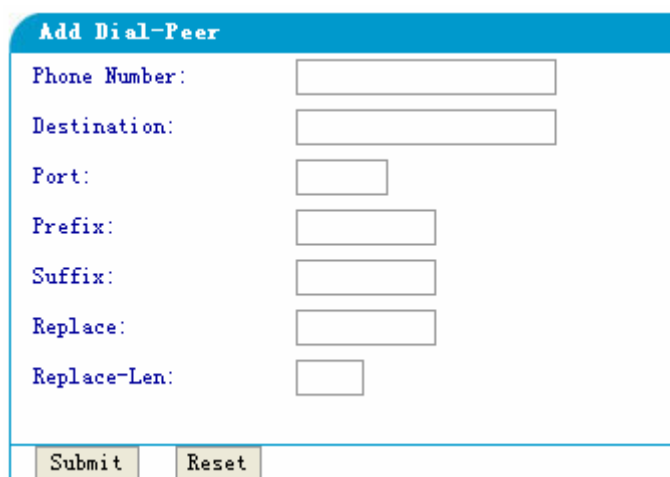
Please go to System Manage->Save Config to save your setting always.

4.3 How to use the dial-peer?

CNI121 provide flexible dial rule, with different dial-rule configure, user can easily implement the following function:

- Replace, delete or add prefix of the dial number.
- Make direct IP to IP call
- Place the call to different servers according the prefix.

You can click "Add" to add a new dial rule. Below is the detail setting of the dial-rule:



Add Dial-Peer	
Phone Number:	<input type="text"/>
Destination:	<input type="text"/>
Port:	<input type="text"/>
Prefix:	<input type="text"/>
Suffix:	<input type="text"/>
Replace:	<input type="text"/>
Replace-Len:	<input type="text"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

Phone Number: The Number suit for this dial rule, you can use the number as full match or prefix match. Full match means that if the number use dials is the completely same as this number, the call will use this dial-rule. Prefix match means that if prefix of the number that the user dials is the same as the prefix, the call will use this dial-rule, to distinguish from the full match case, you need to add "T" after the prefix number in the phone number setting.

Destination(optional): call destination, can be IP or domain. Default is none, in this

case the call will be routed to the SIP server.

Port(optional): Configure the port of the destination, default is 5060.

Prefix(optional): Configure prefix, show no prefix if not set.

Suffix(optional): Configure Suffix, show no suffix if not set.

Replace(optional): Replace the first N number. N is set in the Replace-Len.If the N is 0, the number will be replace by all.

Replave-Len(optional):Configure to Replaced length of the number.

Instance:

Dial-Peer						
Phone Number	Destination	Port	Prefix	Suffix	Replace	Replace-Len
4444	192.168.1.179	5060				
2T		5060				1
123		5060			8675583018	
0T		5060			86	1

4444 rule: when you dial 4444 , the call with send to 192.168.1.179, suit for LAN application without set up a sip server.

2T rule: If the call starts with 2, the first 2 will be deleted, and the rest number will be sent to private SIP server.

123 rule: Dial 123 and will send 8675583018 to your server. Used as speed dial function.

0T rule: If the calls begins with 0, the first 0 will be replace by 86. Means that if you dial 075583018049 and CNI121 will send 8675583018049 to your server.

4.4 How to configure digital map?

Digital Map is based on some rules to judge when user end their dialing and send the number to the server. CNI121 support following digital map:

Time Out: Specify the timeout of the last dial digit. The call will be sent after timeout.

End With "#": Use # as the end of dialing.

Fixed Length: When the length of the dialing match, the call will be sent.

User-defined Rule: If the Prefix and Length match, the call will be sent.

4.5 How to use Call Forward, Call Transfer and three Conference calls?

Call Forward

---- **Forward Always:** Select *Always* in the Call Forward Field, and Key in the destination phone number in the Forward Number. Then any one call this gateway will be forward to the destination number.

---- **Forward when busy:** Select *Busy* in the Call Forward Field, and Key in the destination phone number in the Forward Number. If some one calls you when you having a call, the caller will be forwarded to the destination number.

---- **Forward no answer:** Select *No Answer* in the Call Forward Field, and Key in the destination phone number in the Forward Number, fill the time in the No Answer Time. If some one calls you and no one answer the caller during the No Answer Time, the call will be forward to the destination number

Call Transfer

Check the **Enable Call Transfer**

If A is the CNI121 user, and B calls and talking with A through VoIP. A can press

TRANSFER button to hold the call with B, and then enter C's number. B will be transferred to C and can talk with C.

Three Way Conference Call

Check the **Enable Three Way Call**

Assume A is the CNI121 user, and B calls and talking with A through VoIP. A can press **CONFERENCE** button and enter C's number. Then they are make three way conference calls.