

# VoIP PCB Board User Manual

<b>Doc. Version</b>	<b>Firmware Version</b>	<b>Update Description</b>	<b>Modification Date</b>
V1.0	20220127	First released	202202
V1.5	20220912	Update Web GUI	202209
V1.6	20221123	Optimize MIC volume	202211
V1.7	20221220	Add alarm status page in Web GUI	202212

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## 1 Login

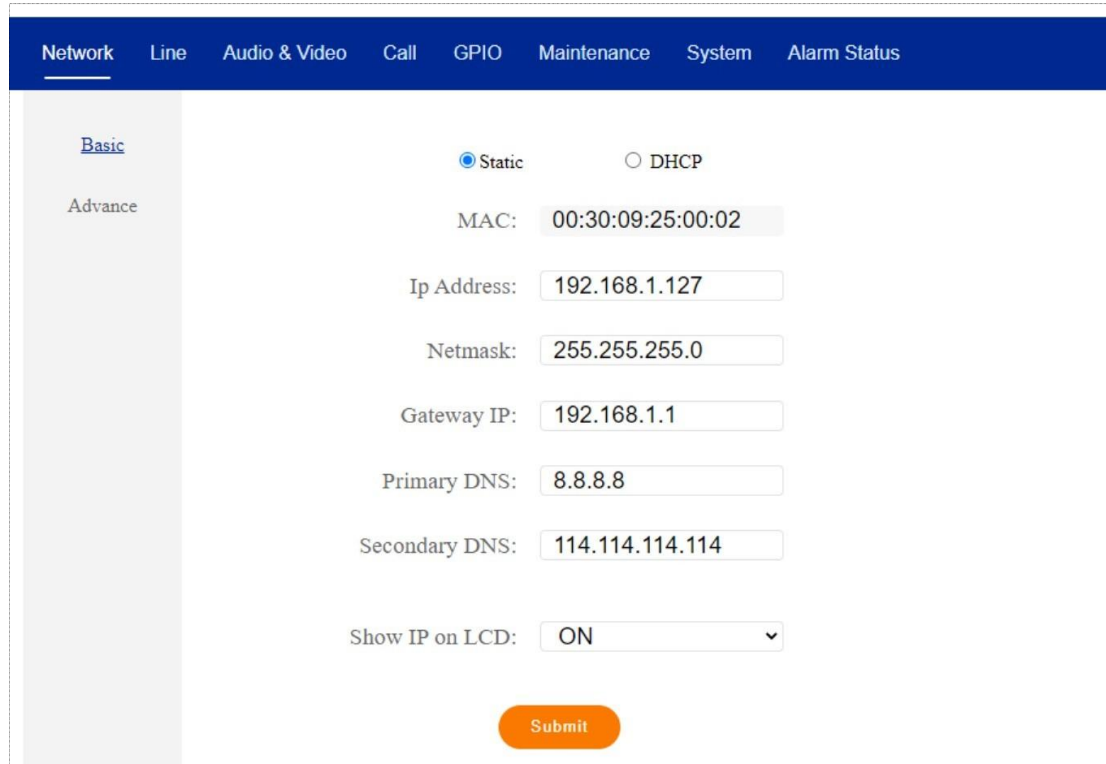
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When the PCB board and computer are connected to the network successfully, enter the IP address of the PCB board in the browser (Default IP address is 192.168.1.127) and you will see the login web page.

The username and password should be filled into the login form. The default username and password are all **'admin'**.

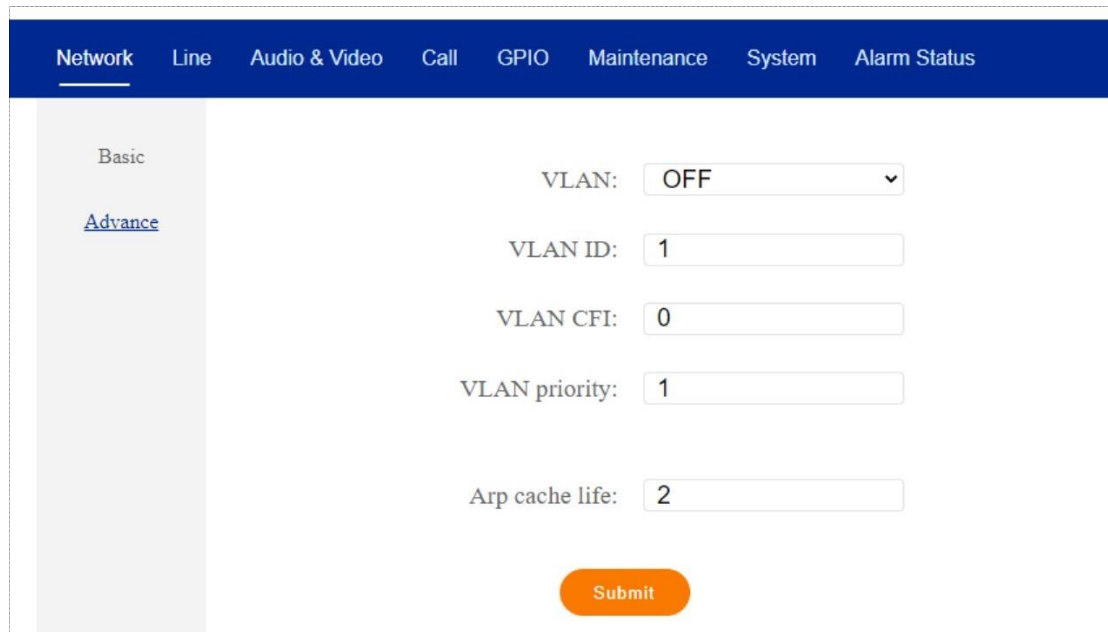
## 2 Network Settings

### 2.1 Basic settings



Static DHCP	Static DHCP network mode selection
MAC	Local MAC address
Ip Address:	Static IP address of the local network
Netmask:	Local sub-net mask
Gateway IP:	Gateway IP address
Primary DNS:	Primary DNS server address
Secondary DNS:	Secondary DNS server address
Show IP on LCD:	Enable or disable IP address display on LCD

## 2.2 Advance Settings



The screenshot shows a web interface with a top navigation bar containing the following tabs: Network, Line, Audio & Video, Call, GPIO, Maintenance, System, and Alarm Status. The 'Network' tab is selected. On the left side, there is a sidebar with two options: 'Basic' and 'Advance'. The 'Advance' option is selected and underlined. The main content area displays the following settings:

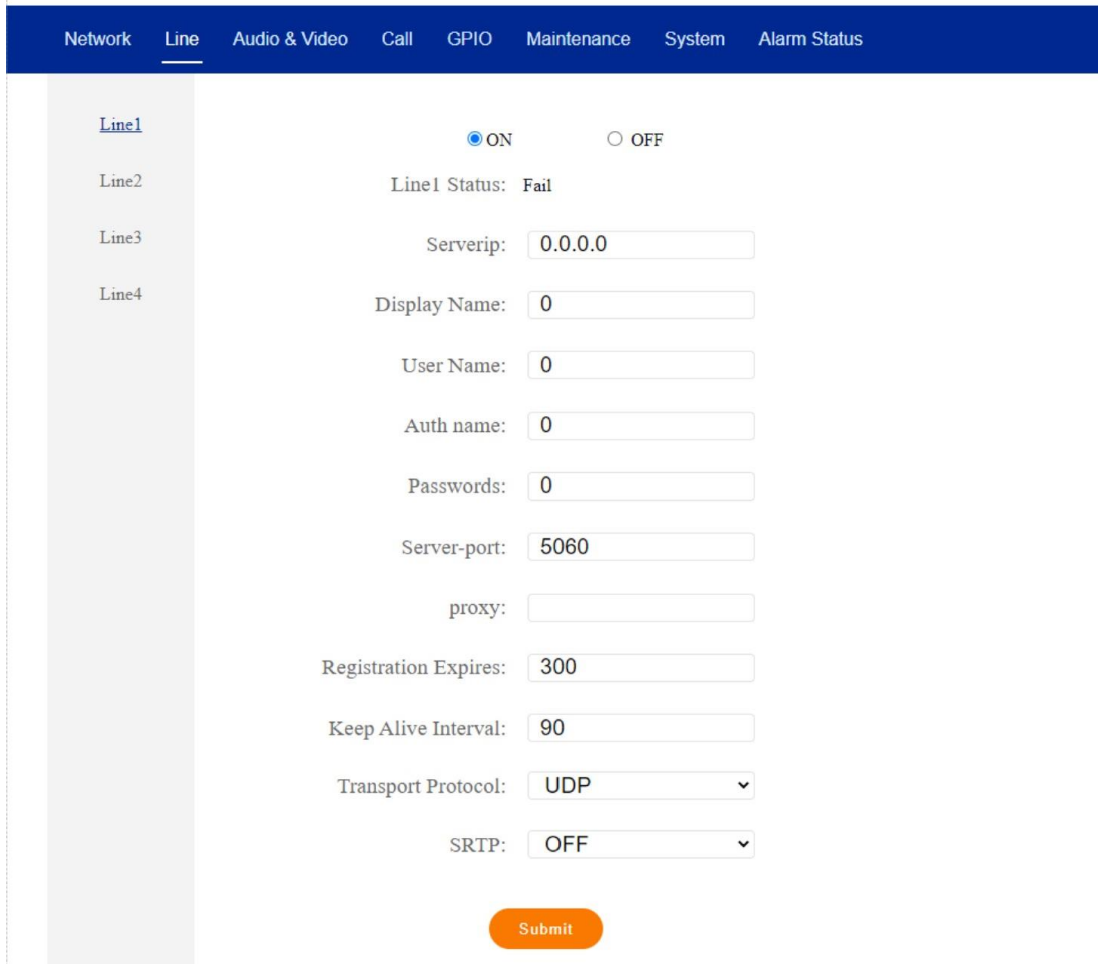
- VLAN: OFF (dropdown menu)
- VLAN ID: 1 (text input)
- VLAN CFI: 0 (text input)
- VLAN priority: 1 (text input)
- Arp cache life: 2 (text input)

At the bottom of the settings area, there is an orange 'Submit' button.

VLAN:	Enable or disable VLAN
VLAN ID:	VLAN ID
VLAN CFI:	VLAN CFI
VLAN priority:	VLAN priority
Arp cache life:	Arp cache life

### 3 Line Settings

The SIP line configuration should be set via the WEB configuration page by entering the correct information such as phone number, authentication name/password, SIP server address, server port, etc. which are provided by the SIP server administrator. There are four lines supported.



Line ON/OFF	Enable or disable the Line
Line Status:	SIP server connection status Fail / Registered / Not Enabled
Serverip:	SIP server address
Display Name:	The name display at the other party
User Name:	SIP account user name
Auth name:	SIP account authenticated name
Passwords:	SIP account password
Server-port:	SIP server port
proxy:	Proxy server address
Registration Expires:	Register Expires is the parameter that controls how often your client contacts the SIP server to remind it that the client is alive and confirming its current location (public IP address and listening SIP port).

Keep Alive Interval:	Heartbeat packet cycle (second)
Transport Protocol:	SIP transport protocol UDP or TCP
SRTP:	Enable or disable SRTP



## 4 Audio & Video Settings

### 4.1 Audio Settings

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
<div style="display: flex;"> <div style="width: 20%; padding-right: 10px;"> <p><a href="#">Audio</a></p> <p>Video</p> </div> <div> <p>First Codec: <input type="text" value="G711A"/></p> <p>Second Codec: <input type="text" value="G711U"/></p> <p>Third Codec: <input type="text" value="G722"/></p> <p>Fourth Codec: <input type="text" value="G729"/></p> <p>Ring Type: <input type="text" value="Type 1"/></p> <p>Mic Volume: <input type="range" value="5"/></p> <p>Speaker Volume: <input type="range" value="5"/></p> <p>Tone Volume: <input type="range" value="5"/></p> <p>Ring Volume: <input type="range" value="5"/></p> <p>Mic HW Gain: <input type="range" value="5"/></p> <p>Speaker HW Gain: <input type="range" value="5"/></p> <p>Echo-Cancel-Tail: <input type="text" value="160"/></p> <p>DTMF Mode: <input type="text" value="RFC2833"/></p> <p>ILBC Mode: <input type="text" value="20ms"/></p> <p>VAD: <input type="text" value="ON"/></p> <p style="text-align: center;"><input type="button" value="Submit"/></p> </div> </div>							

First Codec:	First priority speech encoding
Second Codec:	Second priority speech encoding
Third Codec:	Third priority speech encoding
Fourth Codec:	Fourth priority speech encoding
Ring Type:	Ringtones choice
Mic Volume:	Send volume settings (0-9)
Speaker volume:	Receive volume settings (0-9)
Tone Volume:	Prompt tone volume settings (0-9)
Ring Volume:	Ringtone volume settings (0-9)
Mic HW Gain	Adjust the gain of mic input (0-9)
Speaker HW Gain	Adjust the gain of speaker output (0-9)

Echo-Cancel-Tail(ms):	Echo cancel time set
DTMF Mode:	DTMF mode selection
VAD:	Enable VAD

## 4.2 Video Settings

Network
Line
Audio & Video
Call
GPIO
Maintenance
System
Alarm Status

Audio

Video

Ipcam Ip addr:

Load Type:

Port:

User Name:

Passwords:

Video Stream:

Brand:

Enable Camera:

Submit

IPCam IP Addr:	Camera IP Address
Load Type:	Multimedia Load Types
Port:	Camera port
User Name:	User Name of Camera
Passwords:	Passwords of Camera
Video Stream:	Main stream or sub stream
Brand:	Brand of camera
Enable Camera:	Enable or disable camera

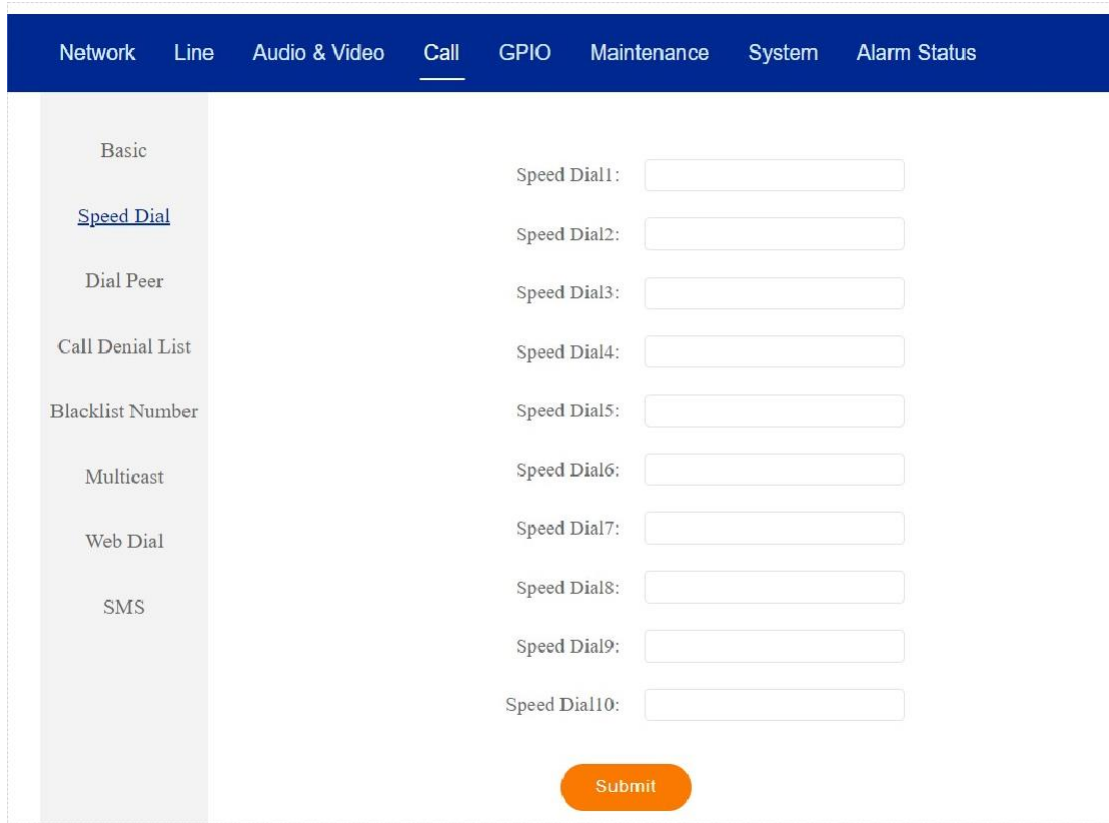
## 5 Call Settings

### 5.1 Basic Settings

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
<div style="display: flex;"> <div style="width: 20%; background-color: #f0f0f0; padding: 5px;"> <p><u>Basic</u></p> <p>Speed Dial</p> <p>Dial Peer</p> <p>Call Denial List</p> <p>Blacklist Number</p> <p>Multicast</p> <p>Web Dial</p> <p>SMS</p> </div> <div style="width: 80%; padding: 10px;"> <p>Hotline: <input type="text"/></p> <p>Send Length: <input type="text" value="12"/></p> <p>Auto Answer Time: <input type="text" value="5"/></p> <p>Session Duration Limit: <input type="text" value="0"/></p> <p>Dont_disturb: <input type="text" value="OFF"/></p> <p>HandDownWith"#": <input type="text" value="OFF"/></p> <p>Auto Answer: <input type="text" value="OFF"/></p> <p>Disable Call Cancel: <input type="text" value="OFF"/></p> <p>Dial Fixed Length to Send: <input type="text" value="OFF"/></p> <p>Disable HOOK: <input type="text" value="ON"/></p> <p style="text-align: center;"><input type="button" value="Submit"/></p> </div> </div>							

Hotline:	Hotline number, when you pick up handset. (You can call from an IP address like 192.168.1.100:5060)
Send Length:	Fixed number length
Auto Answer Time(s):	How many seconds after an incoming call is automatically answered.
Session duration limit:	Talk time limit (second, 0 for OFF)
Dont_disturb	Enable or disable disturb during calling
HandDownWith"#":	Press # Hang up
Auto Answer:	Enable Automatic call answering
Disable Call Cancel	Enable or disable call cancel
Dial Fixed Length to Send:	Enable fixed number length number collection
Disable HOOK:	Disable HOOK(No Handset)

## 5.2 Speed Dial Settings



The screenshot shows a web interface for configuring speed dial settings. At the top, there is a navigation bar with tabs: Network, Line, Audio & Video, Call (selected), GPIO, Maintenance, System, and Alarm Status. On the left side, there is a sidebar menu with options: Basic, Speed Dial (highlighted), Dial Peer, Call Denial List, Blacklist Number, Multicast, Web Dial, and SMS. The main content area displays ten speed dial entries, each with a label (Speed Dial1 through Speed Dial10) and an adjacent empty text input field. At the bottom center of the form is an orange 'Submit' button.

There are 10 groups of speed dial numbers supported, which can be a IP address (To support IP direct dial).

### 5.3 Dail Peer Settings

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
Basic							
Speed Dial							
<u>Dial Peer</u>							
Call Denial List							
Blacklist Number							
Multicast							
Web Dial							
SMS							
				Dial Peer1:	<input type="text"/>		
				Dial Peer2:	<input type="text"/>		
				Dial Peer3:	<input type="text"/>		
				Dial Peer4:	<input type="text"/>		
				Dial Peer5:	<input type="text"/>		
				Dial Peer6:	<input type="text"/>		
				Dial Peer7:	<input type="text"/>		
				Dial Peer8:	<input type="text"/>		
				Dial Peer9:	<input type="text"/>		
				Dial Peer10:	<input type="text"/>		
<input type="button" value="Submit"/>							

There are 10 dial number rules. The rules are listed as below:

X: Any number from 0 to 9.

D: Delete the prefix, followed by the delete length.

A: Add the prefix, followed by the add numbers.

For example, if the rule 0755XXXXXXXXXD4A9 is set, the number 075512345678 is changed to 912345678.

## 5.4 Call Denial List Settings

Network	Line	Audio & Video	<u>Call</u>	GPIO	Maintenance	System	Alarm Status
Basic			Restricted call number1: <input type="text"/>				
Speed Dial			Restricted call number2: <input type="text"/>				
Dial Peer			Restricted call number3: <input type="text"/>				
<u>Call Denial List</u>			Restricted call number4: <input type="text"/>				
Blacklist Number			Restricted call number5: <input type="text"/>				
Multicast			Restricted call number6: <input type="text"/>				
Web Dial			Restricted call number7: <input type="text"/>				
SMS			Restricted call number8: <input type="text"/>				
			Restricted call number9: <input type="text"/>				
			Restricted call number10: <input type="text"/>				
				<input type="button" value="Submit"/>			

The specified number cannot be dialed out.

## 5.5 Blacklist Number Settings

Network	Line	Audio & Video	<u>Call</u>	GPIO	Maintenance	System	Alarm Status
Basic							
Speed Dial							
Dial Peer							
Call Denial List							
<u>Blacklist Number</u>							
Multicast							
Web Dial							
SMS							

Blacklist Number1:	<input type="text"/>
Blacklist Number2:	<input type="text"/>
Blacklist Number3:	<input type="text"/>
Blacklist Number4:	<input type="text"/>
Blacklist Number5:	<input type="text"/>
Blacklist Number6:	<input type="text"/>
Blacklist Number7:	<input type="text"/>
Blacklist Number8:	<input type="text"/>
Blacklist Number9:	<input type="text"/>
Blacklist Number10:	<input type="text"/>

Blacklist number. The specified number incoming call will be reject.

## 5.6 Multicast Settings

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
Basic			Multicast1: <input type="text"/> Port: <input type="text"/>				
Speed Dial			Multicast2: <input type="text"/> Port: <input type="text"/>				
Dial Peer			Multicast3: <input type="text"/> Port: <input type="text"/>				
Call Denial List			Multicast4: <input type="text"/> Port: <input type="text"/>				
Blacklist Number			Multicast5: <input type="text"/> Port: <input type="text"/>				
<u>Multicast</u>			Multicast6: <input type="text"/> Port: <input type="text"/>				
Web Dial			Multicast7: <input type="text"/> Port: <input type="text"/>				
SMS			Multicast8: <input type="text"/> Port: <input type="text"/>				
			Multicast9: <input type="text"/> Port: <input type="text"/>				
			Multicast10: <input type="text"/> Port: <input type="text"/>				
<input type="button" value="Submit"/>							

Multicast listening address and port. Note that the G722 speech coding is used by default.

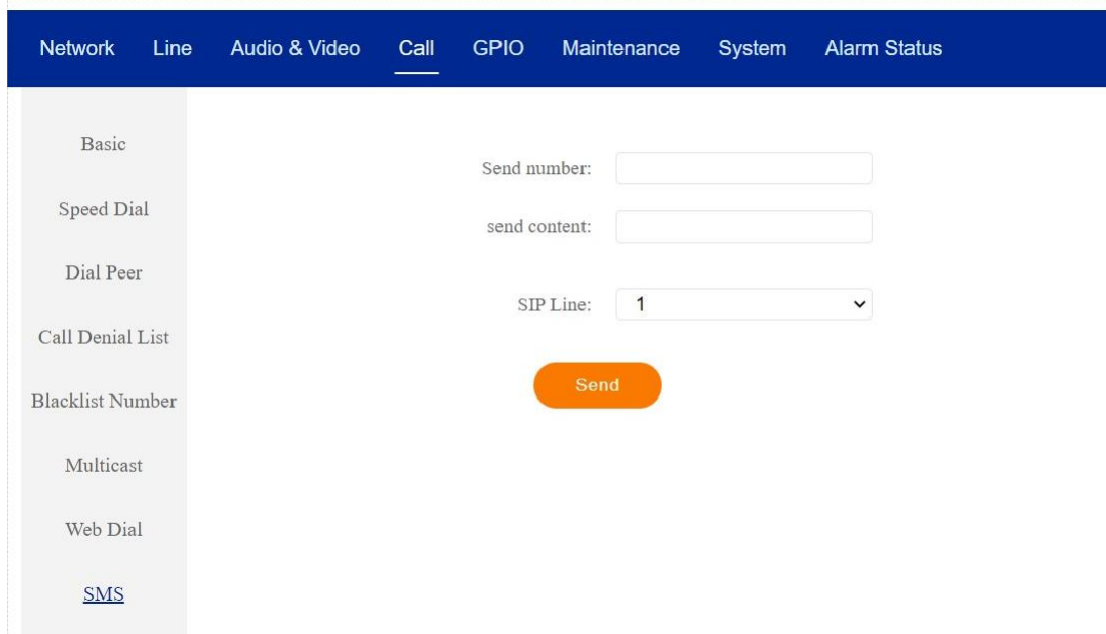
## 5.7 Web Dial Setting

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
Basic			Dial number: <input type="text"/> <input type="button" value="Call"/>				
Speed Dial							
Dial Peer			Hang up: <input type="button" value="Hang up"/>				
Call Denial List							
Blacklist Number							
Multicast							
<u>Web Dial</u>							
SMS							



Make or hang up the call through WEB.

## 5.8 SMS Settings



The screenshot shows a web interface for SMS settings. At the top, there is a navigation bar with tabs: Network, Line, Audio & Video, Call (selected), GPIO, Maintenance, System, and Alarm Status. On the left side, there is a sidebar menu with options: Basic, Speed Dial, Dial Peer, Call Denial List, Blacklist Number, Multicast, Web Dial, and SMS (highlighted). The main content area contains three input fields: 'Send number:' with an empty text box, 'send content:' with an empty text box, and 'SIP Line:' with a dropdown menu showing '1'. Below these fields is an orange 'Send' button.

Sending or receiving SMS, limited to 127 characters.

## 6 GPIO Settings

### 6.1 GPIO Settings

Network	Line	Audio & Video	Call	<u>GPIO</u>	Maintenance	System	Alarm Status
<u>GPIO</u>							
LED							
				GPIO1 ctrl:	OFF		
				normal state:	Low level		
				trigger time:	2		
				Dtmf Ctrl:	OFF		
				Dtmf Password:	1234		
				Call State Ctrl:	OFF		
				Call State :	Call		
				GPIO2 ctrl:	OFF		
				normal state:	Low level		
				trigger time:	2		
				Dtmf Ctrl:	OFF		
				Dtmf Password:	1234		
				Call State Ctrl:	OFF		
				Call State :	Call		
GPIO Input1:							
				Triggers a speeddial call:	OFF		
				Speed Dial:			
				Triggers Output:	OFF		
				Output Port:			
GPIO Input2:							
				Triggers a speeddial call:	OFF		
				Speed Dial:			
				Triggers Output:	OFF		
				Output Port:			
<input type="button" value="Submit"/>							

GPIO Ctrl:	Enable or disable relay GPIO output control
Normal state:	Relay GPIO output default status

Trigger Time:	Relay GPIO output controls the trigger duration
Dtmf Ctrl:	Enable DTMF to control the GPIO output port
Dtmf Password:	DTMF control password
Call State Ctrl:	Enable or disable call status control GPIO
Call state Ctrl Type:	Call status type
Triggers a speeddial call:	Enable or disable, speed dial is triggered if the input port detects a level change from high to low
Speed Dial:	Number of speed dials triggered
Triggers Output:	Enable or disable, if the input port detects a level change from high to low, the input port triggers
Output Port:	Which number of outlets to trigger

## 6.2 Led setup page

Network
Line
Audio & Video
Call
GPIO
Maintenance
System
Alarm Status

**GPIO**

[LED](#)

LED1 time set:(Unit 100 ms)

normal state:  ON  OFF

Registered:  ON  OFF

ring:  ON  OFF

Call:  ON  OFF

answer:  ON  OFF

call end:  ON  OFF

LED2 time set:(Unit 100 ms)

normal state:  ON  OFF

Registered:  ON  OFF

ring:  ON  OFF

Call:  ON  OFF

answer:  ON  OFF

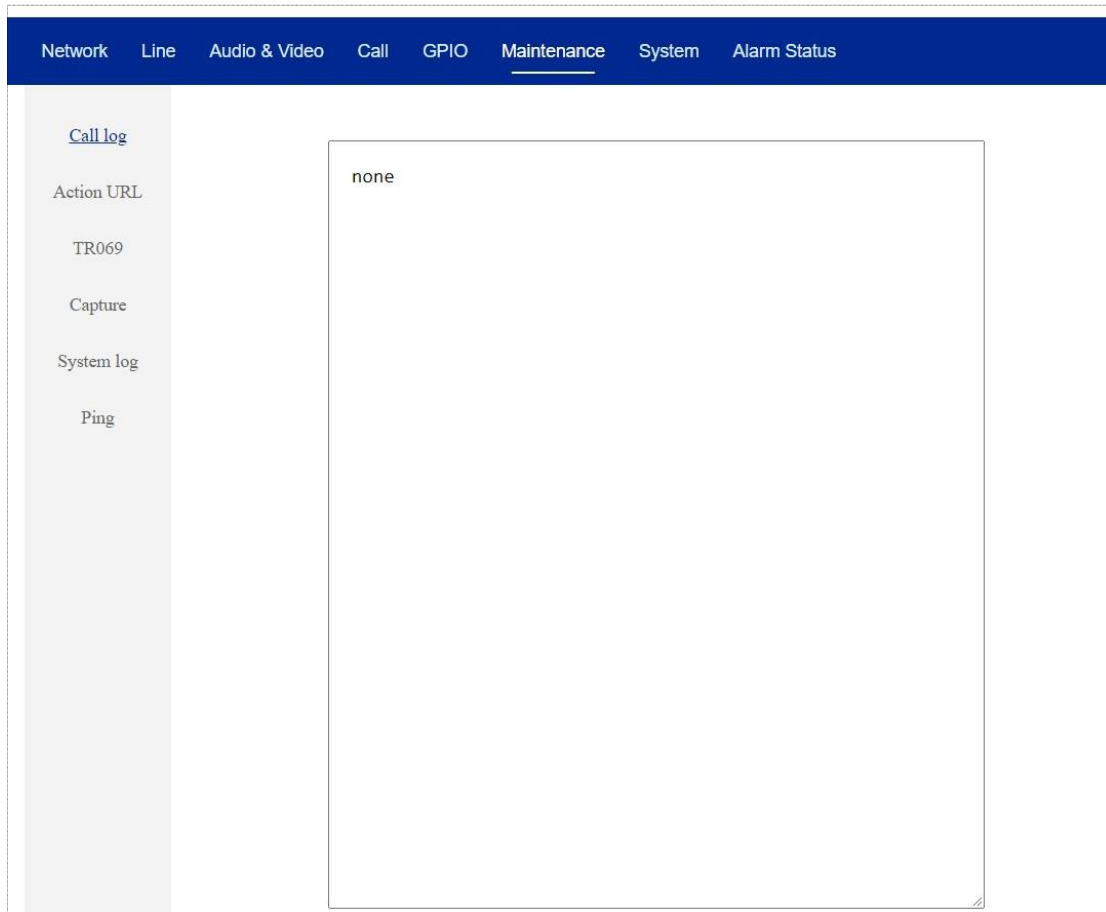
call end:  ON  OFF

After the corresponding event occurs, the LED state will be lit or off according to the set time of the command.

## 7 Maintenance settings

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### 7.1 Call Log



A maximum of 100 records can be displayed.

## 7.2 Action url

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
Call log					Power on: <input type="text"/>		
<u>Action URL</u>					Registered: <input type="text"/>		
TR069					Fail: <input type="text"/>		
Capture					hook on: <input type="text"/>		
System log					hook off: <input type="text"/>		
Ping					ring: <input type="text"/>		
					Call: <input type="text"/>		
					Established: <input type="text"/>		
					call end: <input type="text"/>		
					Dont_disturb ON: <input type="text"/>		
					Dont_disturb OFF: <input type="text"/>		
					Mute ON: <input type="text"/>		
					Mute OFF: <input type="text"/>		
					IP Changed OFF: <input type="text"/>		
<input type="button" value="Submit"/>							

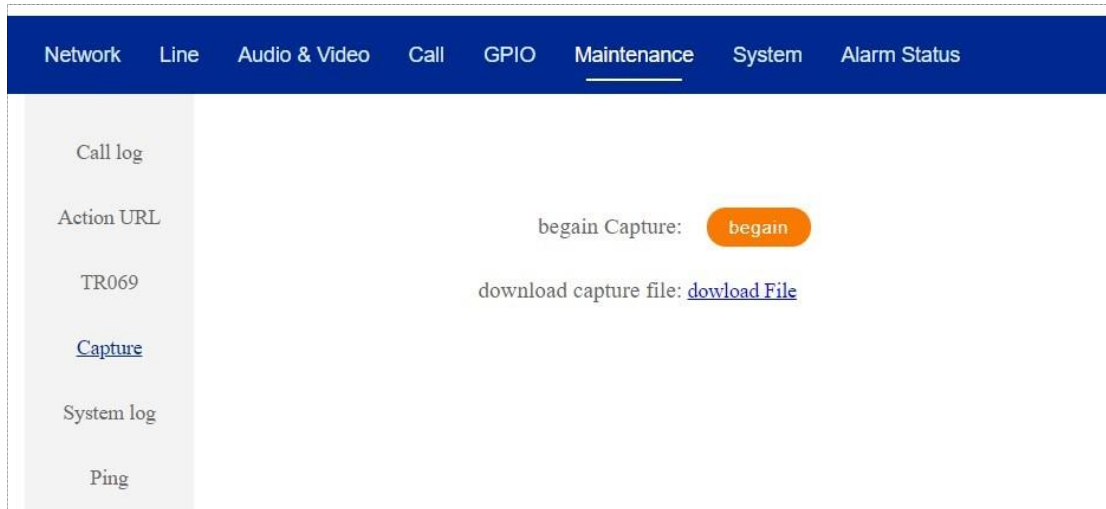
When the corresponding event occurs, an HTTP message for the instruction is sent to the specified address.

### 7.3 TR069

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
Call log					TR069		
Action URL					ACSServerip: <input type="text" value="http://192.168.1.10:80/a"/>		
<a href="#">TR069</a>					ACSUser Name: <input type="text" value="admin"/>		
Capture					ACSPasswords: <input type="text" value="admin"/>		
System log					Periodic Inform time: <input type="text" value="50"/>		
Ping					CPEUser Name: <input type="text" value="admin"/>		
					CPEPasswords: <input type="text" value="admin"/>		
					TR069: <input type="text" value="OFF"/>		
					Periodic Inform timeON: <input type="text" value="OFF"/>		
<input type="button" value="Submit"/>							

ACS Serverip:	ACS server address
ACS User Name:	The ACS server authenticates the user name
ACS Passwords:	The ACS server authenticates the password
Periodic Inform time:	Periodic packet sending time
CPE User Name:	CPE authentication user name
CPE Passwords:	CPE authentication password
TR069:	Enable or disable TR069
Periodic Inform time ON	Enable or disable Periodic packet sending

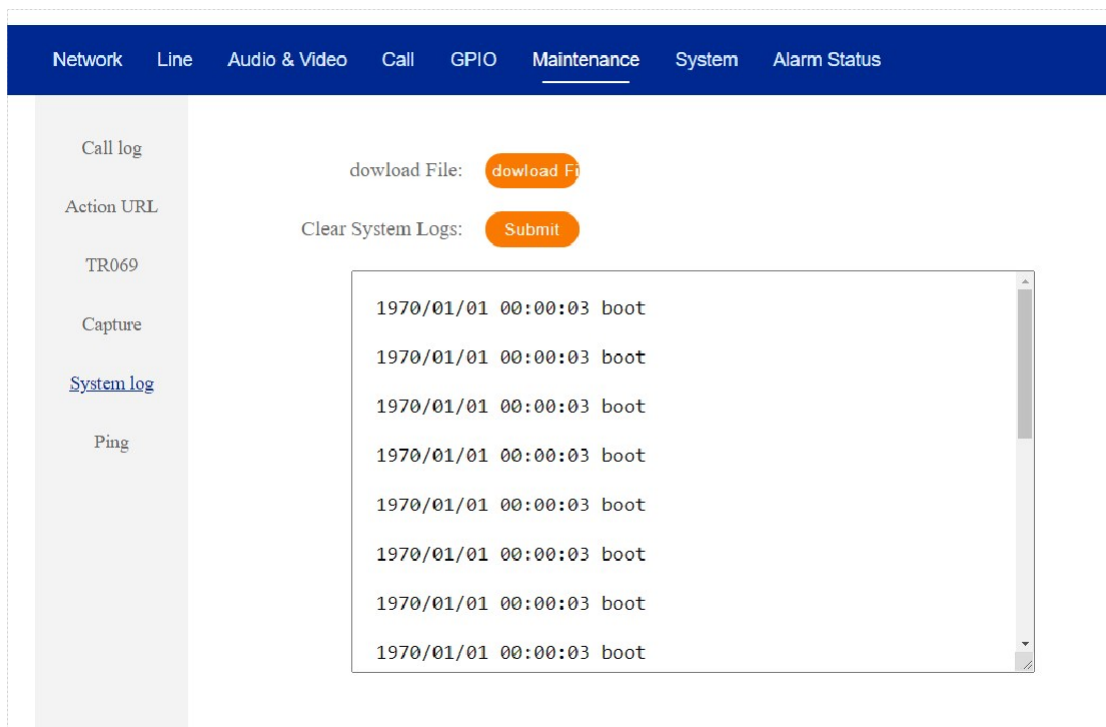
## 7.4 Capture



Analyze network packet capture.

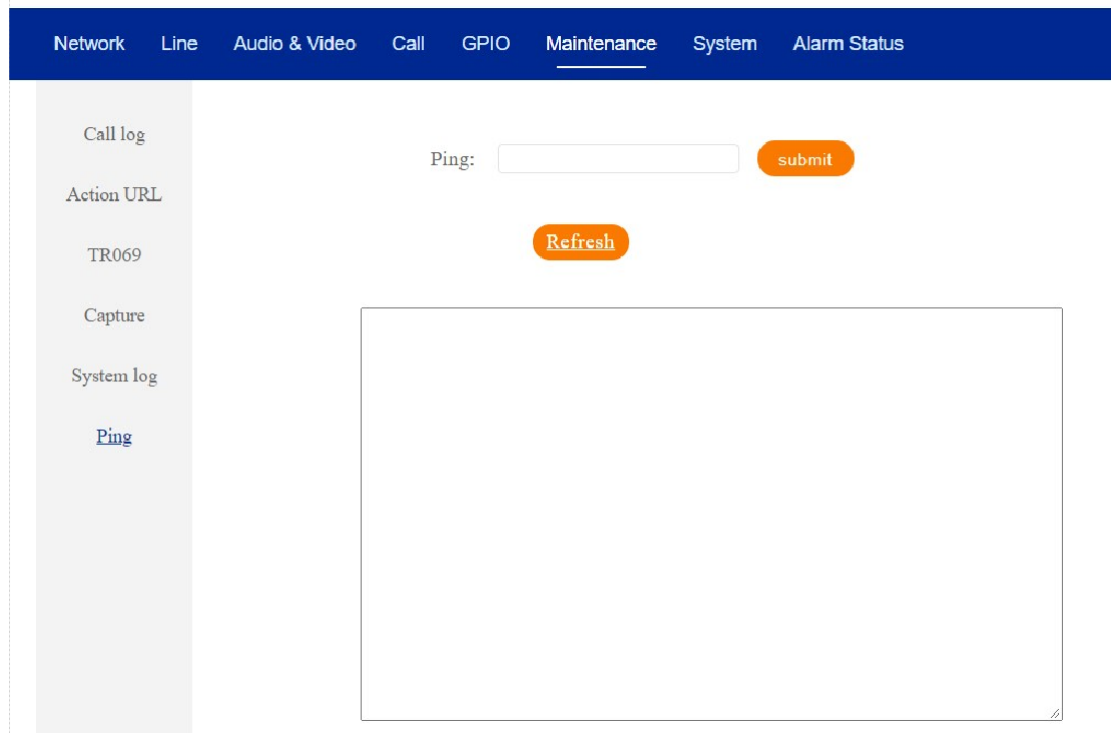
Click the Begin button to start capturing packets, click the stop button to end capturing packets, and click Download file to download the packets to the computer for analysis.

## 7.5 System Log



WEB debugging is used to analyze problems.

## 7.6 Ping



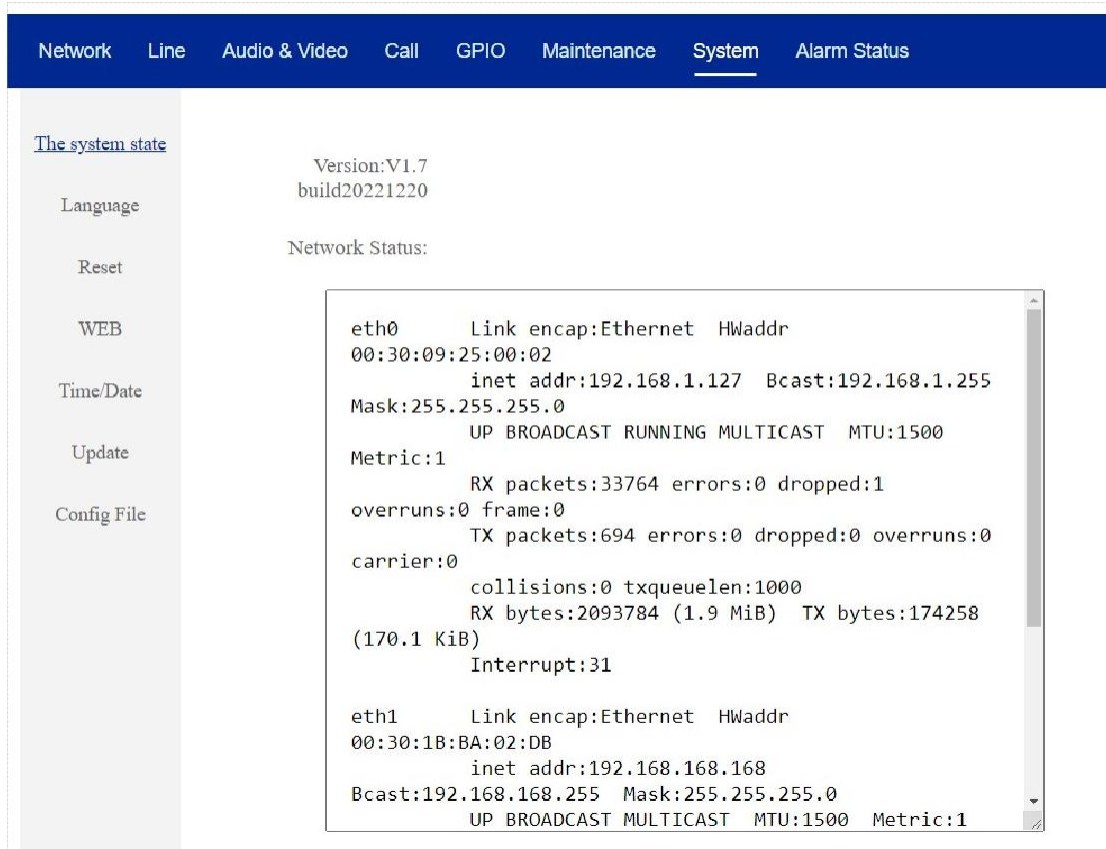
The screenshot shows a web interface with a dark blue header containing navigation tabs: Network, Line, Audio & Video, Call, GPIO, Maintenance (selected), System, and Alarm Status. On the left, a sidebar lists menu items: Call log, Action URL, TR069, Capture, System log, and Ping (highlighted). The main content area features a 'Ping:' label, an input field, and an orange 'submit' button. Below the input field is an orange 'Refresh' button. A large empty rectangular box is positioned below the 'Refresh' button, intended for displaying the ping results.

Assist in analyzing network problems.



## 8 System Settings

### 8.1 System State

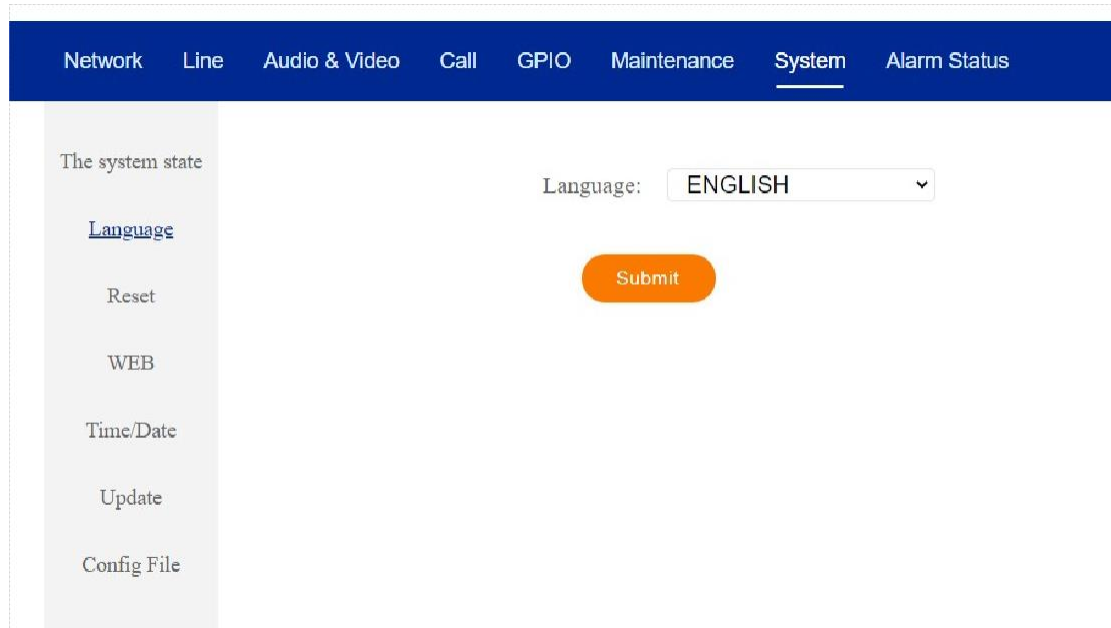


The screenshot shows the 'System' tab selected in the top navigation bar. On the left, a sidebar contains menu items: 'The system state' (selected), 'Language', 'Reset', 'WEB', 'Time/Date', 'Update', and 'Config File'. The main content area displays system information:

- Version: V1.7  
build20221220
- Network Status:

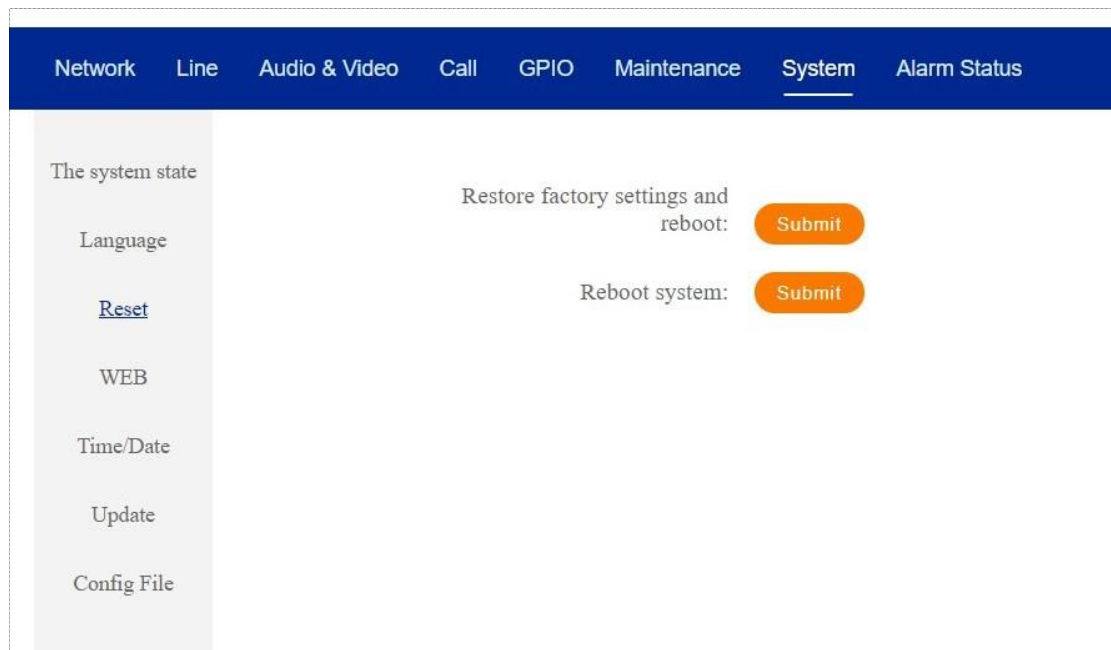
```
eth0      Link encap:Ethernet  HWaddr  
00:30:09:25:00:02  
          inet addr:192.168.1.127  Bcast:192.168.1.255  
Mask:255.255.255.0  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  
Metric:1  
          RX packets:33764 errors:0 dropped:1  
overruns:0 frame:0  
          TX packets:694 errors:0 dropped:0 overruns:0  
carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:2093784 (1.9 MiB)  TX bytes:174258  
(170.1 KiB)  
          Interrupt:31  
  
eth1      Link encap:Ethernet  HWaddr  
00:30:1B:BA:02:DB  
          inet addr:192.168.168.168  
Bcast:192.168.168.255  Mask:255.255.255.0  
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
```

## 8.2 Language Settings



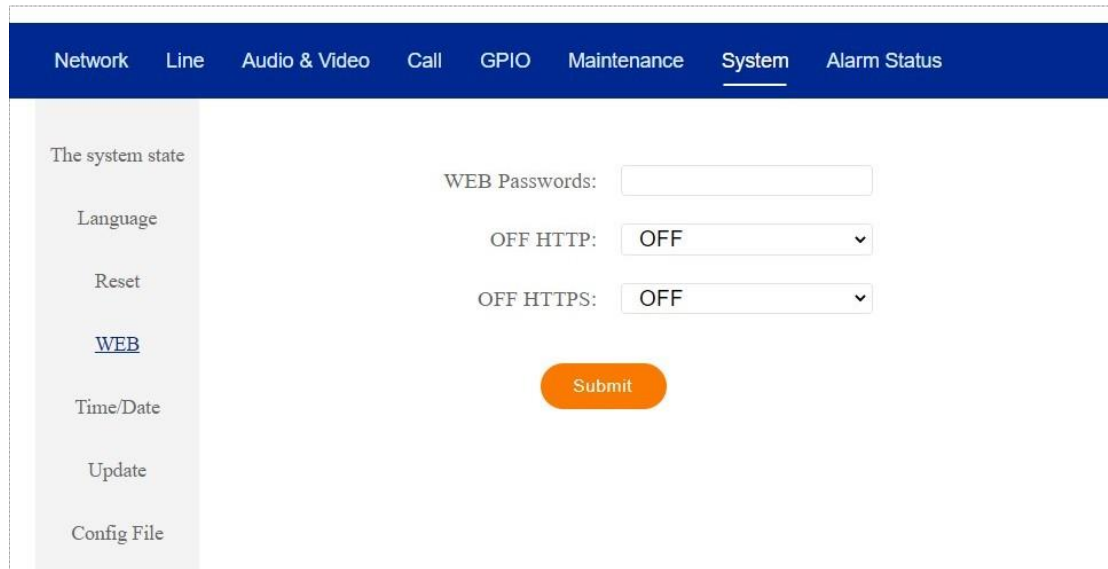
The screenshot shows the 'System' configuration page. The top navigation bar includes 'Network', 'Line', 'Audio & Video', 'Call', 'GPIO', 'Maintenance', 'System' (selected), and 'Alarm Status'. On the left, a sidebar lists 'The system state', 'Language' (selected), 'Reset', 'WEB', 'Time/Date', 'Update', and 'Config File'. The main content area displays 'Language: ENGLISH' with a dropdown arrow and a 'Submit' button.

## 8.3 Reset Settings



The screenshot shows the 'Reset' configuration page. The top navigation bar is identical to the previous page. The left sidebar has 'Reset' selected. The main content area contains two options: 'Restore factory settings and reboot:' with a 'Submit' button, and 'Reboot system:' with a 'Submit' button.

## 8.4 Web Settings

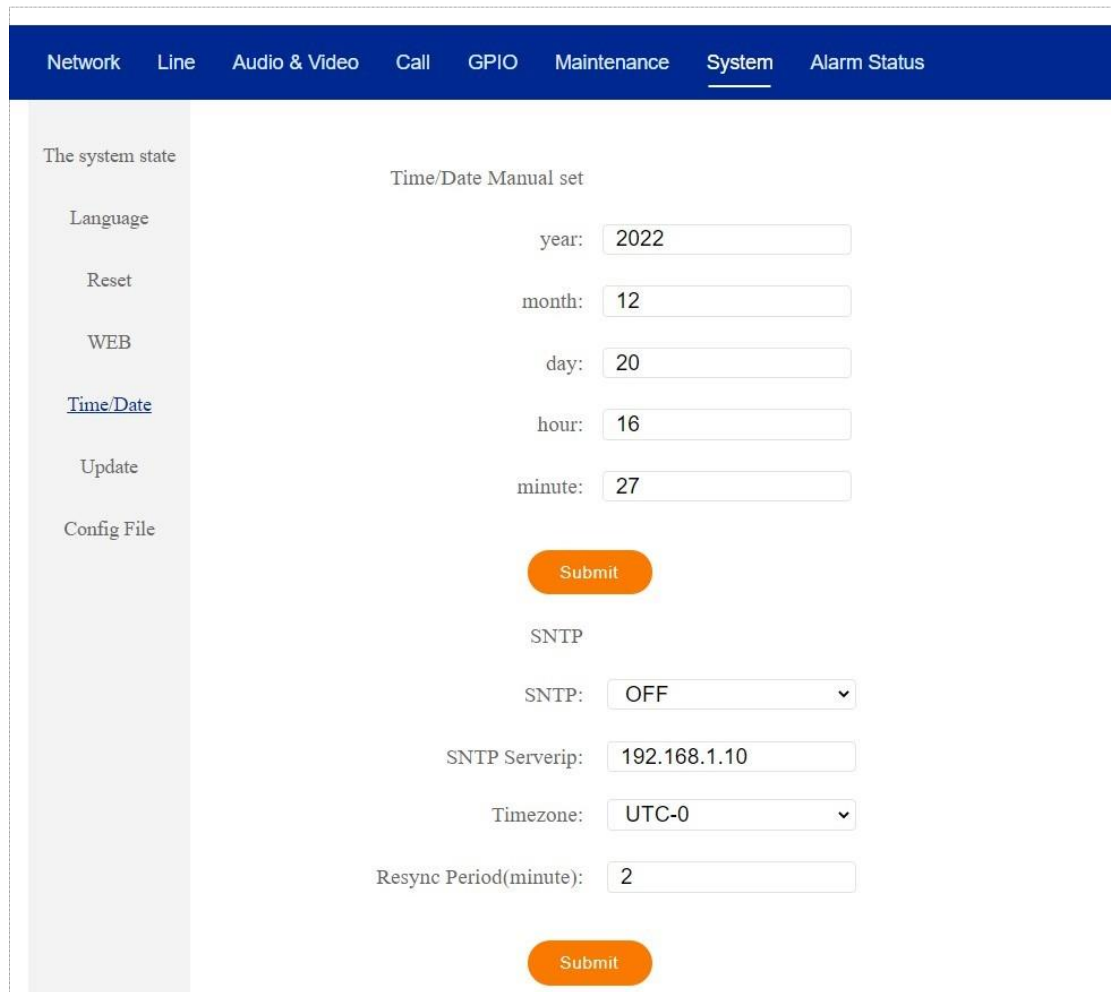


WEB login password. The default password is “admin”.

Enabled or disabled the HTTP or HTTPS service.

**Warning:** If you close them all, you will not be able to access the WEB Settings page.(In this case, to restore the HTTP or HTTPS function, perform the following operations: Press \* to power on the device.)

## 8.5 Time/Date Settings



The system state

Language

Reset

WEB

Time/Date

Update

Config File

Time/Date Manual set

year:

month:

day:

hour:

minute:

SNTP

SNTP:

SNTP Serverip:

Timezone:

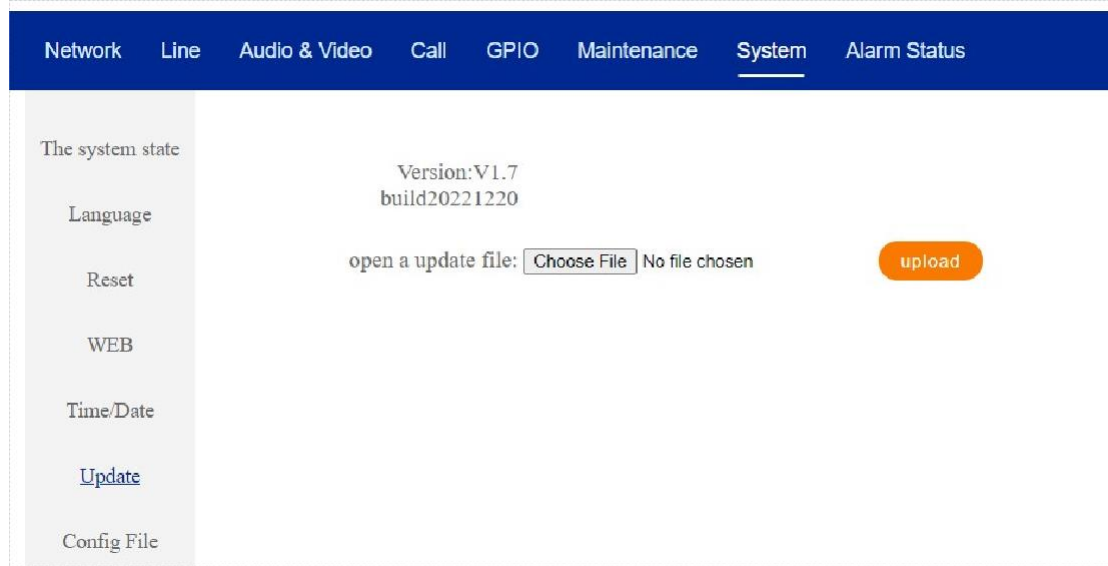
Resync Period(minute):

You can manually set the date and time on this page.

SNTP:	Enable or disable SNTP
SNTP Serverip:	IP address of the SNTP server
Timezone:	Time zone
Resync Period(minute):	Time correction period

Automatically obtain network time on SNTP server.

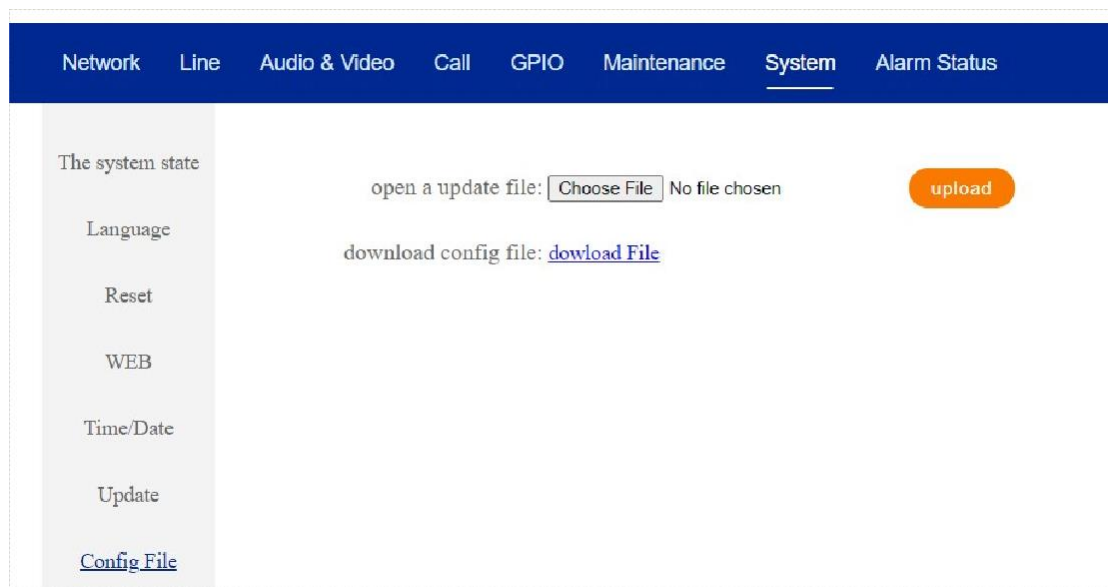
## 8.6 Upgrade



This is where you can load the firmware you want to upload. The upgrade takes about 1 minute and will restart automatically after the upgrade is complete.

**Note** that the name of the firmware upgrade must be “voipfirmware.bin”. Otherwise, the system will not be upgraded.

## 8.7 Config File



You can download the current configuration file and upload the updated configuration file after modification.

## 9 Alarm Status

Network	Line	Audio & Video	Call	GPIO	Maintenance	System	Alarm Status
							<p><u>Basic</u></p> <p>IO Port Status</p> <p>IO Port 1: OPEN</p> <p>IO Port 2: OPEN</p> <p>IO Port 3: OPEN</p>