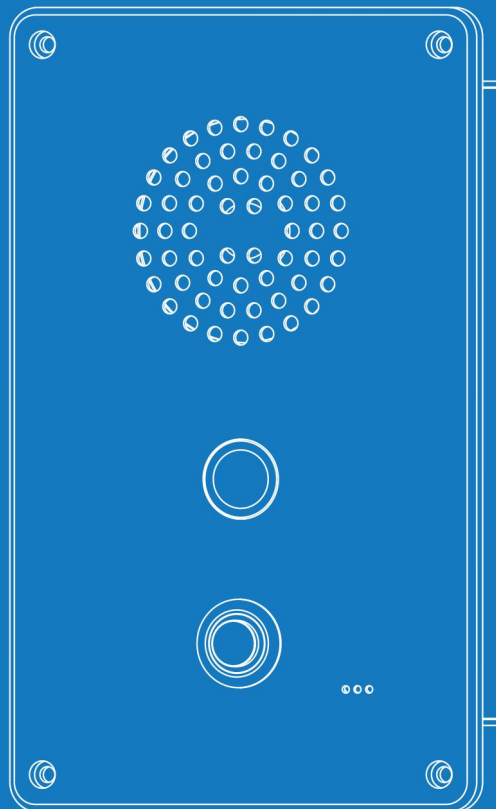


# ***SPON***

## IP VIDEO INTERCOM TERMINAL User Manual



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# 1. Important Safety Precaution

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Please read this User Manual carefully before using this product and follow all the safety precautions mentioned herein.

## During Installation:

(1) Avoid humidity:

Please do not expose the device to rainy environment or other humid environment, otherwise it may lead to fire or electric shock.

(2) Use correct power supply:

Please use the specified power adapter for the device, using high voltage power supply may lead to fire or electric shock.

(3) Protect the electric wire:

Do not scratch, cut or twist the power cord, keep the power cord away from any heating device, do not place heavy objects on top of the power cord, otherwise it may lead to fire or electric shock.

## During Use:

(1) If anything goes wrong:

During use of this device, if any of these anomalies mentioned below happens, please cut off the electricity immediately, otherwise it may lead to fire or electric shock.

- smoke or strange smell coming out of the device.
- water or other foreign object gets into the device.
- damage on the product shell.
- damage of the power cord (cable core exposed or broken).
- malfunction of the device (no network connection or no sound).

(2) Do not open the product shell:

There are high voltage parts inside of the product shell, opening the product shell without permission may lead to fire or electric shock.

(3) Do not touch the device when it thunders:

To avoid electric shock, please do not touch the device or power plugs when it thunders.

(4) Do not place liquid containers on top of the device:

If accidentally knock over the liquid container and let any liquid get into the device, it may lead to fire or electric shock.

(5) Cautions when the device is not in use:

If the device is not in use for 10 days or longer, please cut off the electricity and unplug the power plug from the power socket, otherwise it may lead to fire or electric shock.

## 2. Product Overview

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Here is what you can find in this section:

- **2.1 Basic Introduction**
- **2.2 Product Features**
- **2.3 Hardware Interface Description**
- **2.4 Wiring**

## 2.1 Basic Introduction

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IP video intercom terminal, embedded with digital network audio technology of SPON independent intellectual property rights, equipped with camera, power input interface, alarm input and output, recording output and other ports, which is specially used for monitoring, hands-free calls and broadcast receiving.



## 2.2 Product Features

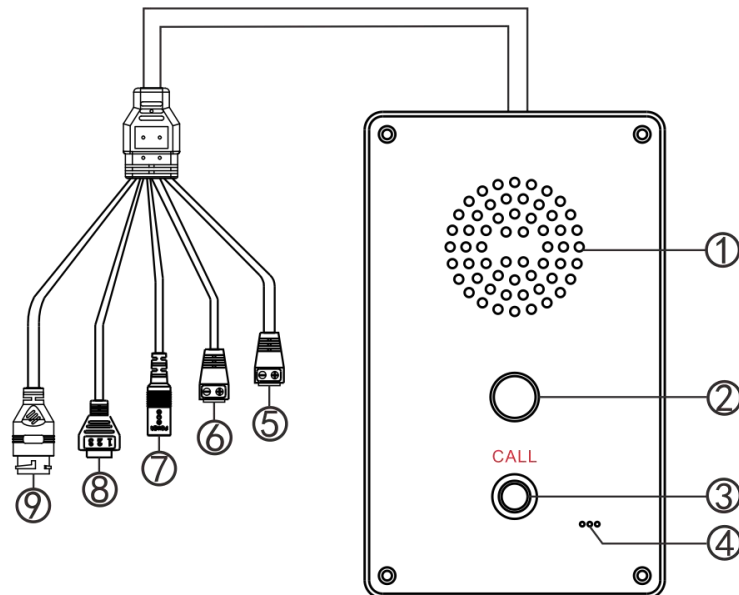
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- Full metal shell, hidden installation, safe and sturdy.
- With single calling button to realize full-duplex intercom.
- The terminal camera has functions of dynamic bandwidth, strong light suppression, and weak light compensation, can work normally under weak light and backlight conditions.
- The terminal complies with the ONVIF protocol and can directly access to storage devices such as mainstream NVR to realize audio and video synchronous recording for traceability.
- Video traceback, support large-capacity FLASH storage, store current video in real time, and when talking with the center microphone, the microphone can display the real-time video of the terminal and the video of the backtracking video
- Built-in speaker and microphone mic, hands-free calling and receiving broadcast.
- Support offline intercom (initiate and receive) without server.
- The terminal has one short circuit output to control the alarm light.
- With 1 short circuit input to connect external button.
- Accessible to the system if the Ethernet is available, cross-network segments and cross-routes.

## 2.3 Hardware Interface Description

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### Interface description

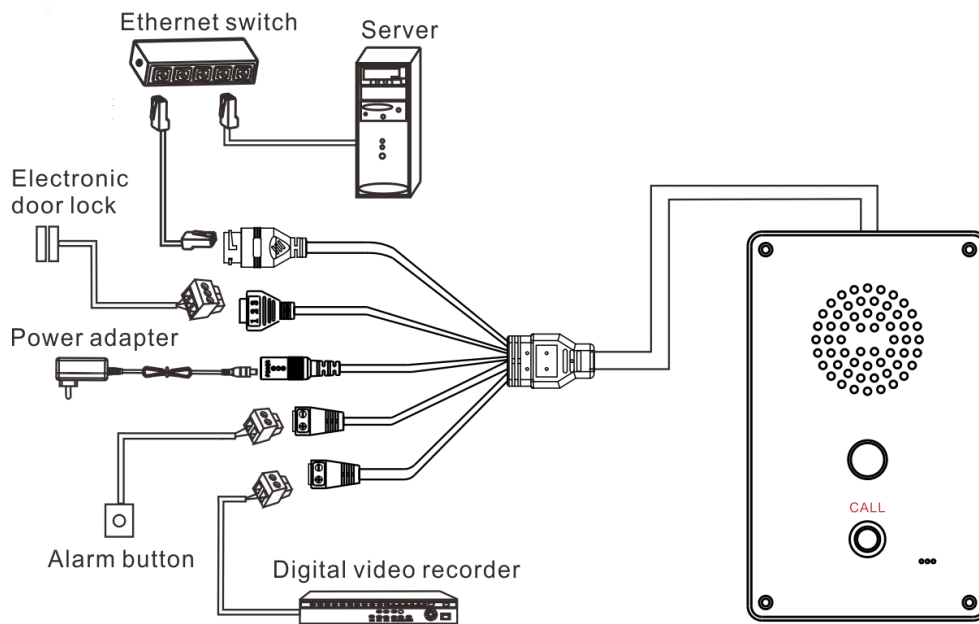


- ① Loudspeaker: amplify the remote voice.
- ② Camera: collect the local video.
- ③ Calling button: press the button to call the terminal designated by the server.
- ④ Pick-up microphone: collect the local audio.
- ⑤ Recording output interface(green)
- ⑥ Alarm input interface(black)
- ⑦ Power supply input interface
- ⑧ Alarm output interface: port 1 is alarm output public port; Port 2 is alarm output normally close port; Port 3 is alarm output normally open port.
- ⑨ Network interface: insert the cable, connect the switcher in order to the the terminal to log on the server normally. Support POE power supply.

## 2.4 Wiring

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- (1) One end of the power adapter is connected to the power interface of the IP video intercom terminal, and the other end is connected to the power socket;
- (2) One end of the Ethernet cable is connected to the cable connection of the IP video intercom terminal, and the other end is connected to the switch;
- (3) Connect other devices to the corresponding interfaces.



## 3. Quick Operation Guide

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Here is what you can find in this section:

- **3.1 Network Settings**
- **3.2 User-Defined Terminal Parameter Settings**
- **3.3 Basic Function**
- **3.4 Troubleshooting**



## 3.1 Network Settings

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### Basic Network Settings

After the terminal is successfully connected according to the "Installation Manual", turn on the power, and change the network parameters of the terminal according to the on-site application environment. There are two methods:

#### IP Device Configuration Tool

(1) Run "IP DevConfig Tool", after the tool is started, the interface will display the IP terminal that has been scanned, or you can click the "Quick scan" button to scan the terminal again.

(2) Configure the terminal's IP network information.

**Method 1:** Check the designated terminal and click "Terminal Configuration"->"Parameter Configuration" to configure IP network information for the terminal.

**Method 2:** If the scanning tool does not scan the terminal, you can click "Advanced" to perform mandatory IP configuration. This method will force all terminals in the network to be configured to the same IP address and other information, so when using this method, please ensure that only one target terminal is connected in connected to the network.

For specific operation steps, please refer to the User Manual of "IP Device Configuration Tool".

#### Remark:

1. If you use Windows 7 system to operate, please use the administrator mode to run the IP DevConfig Tool, and turn off the firewall and related software;
2. If the terminal is not scanned, the mandatory configuration method can be used. At this time, the IP DevConfig Tool can only configure the network parameters of one terminal at a time. When using this method to configure terminal network parameters, please make sure that one computer corresponds to only one target terminal.
3. If you need an IP DevConfig Tool, please contact our company's after-sales service.

### Web page mode

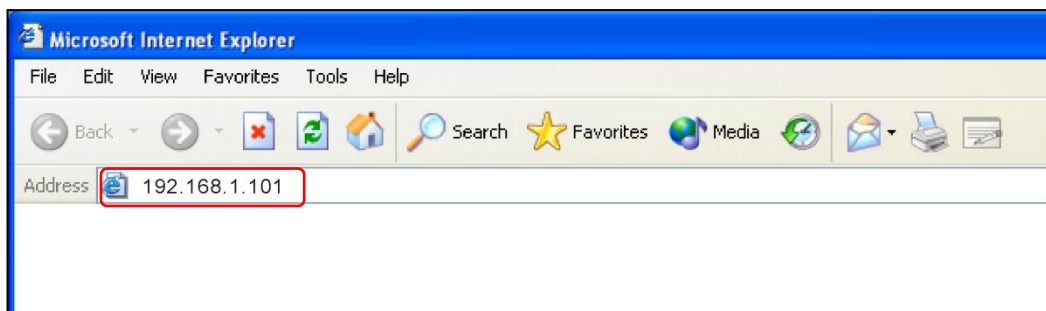
Enter the web interface of the IP video intercom terminal, modify various parameters in the network parameters according to the site environment, and click "Save" after setting. For specific operation steps, please refer to the network parameter settings in Custom Terminal Parameters.

## 3.2 User-Defined Terminal Parameter Settings

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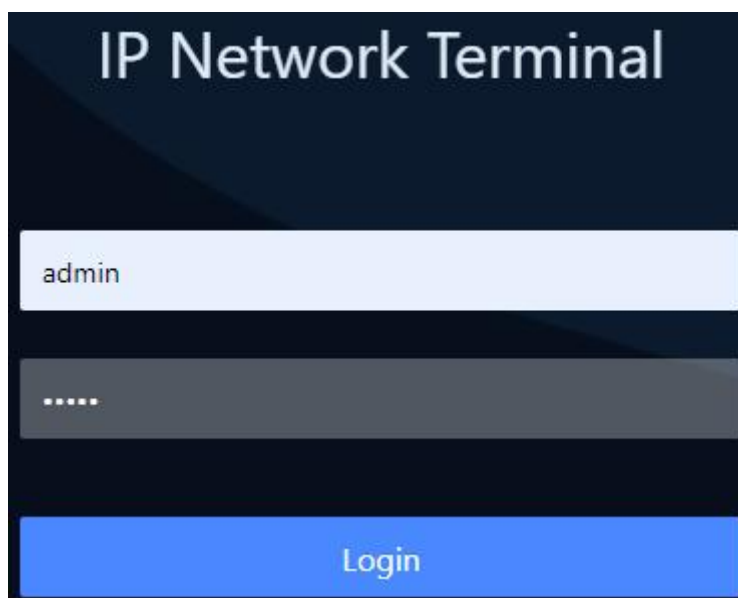
### Login web interface

(1) Enter the IP address of the IP video intercom terminal in the address bar of the browser (the default IP address is 192.168.1.101, and when the network cable is not plugged in, the terminal will automatically broadcast the IP address by pressing the call button) and then press the Enter key.



(2) Enter the username, and password on the login page.

**Note: Default username and password are both admin.**

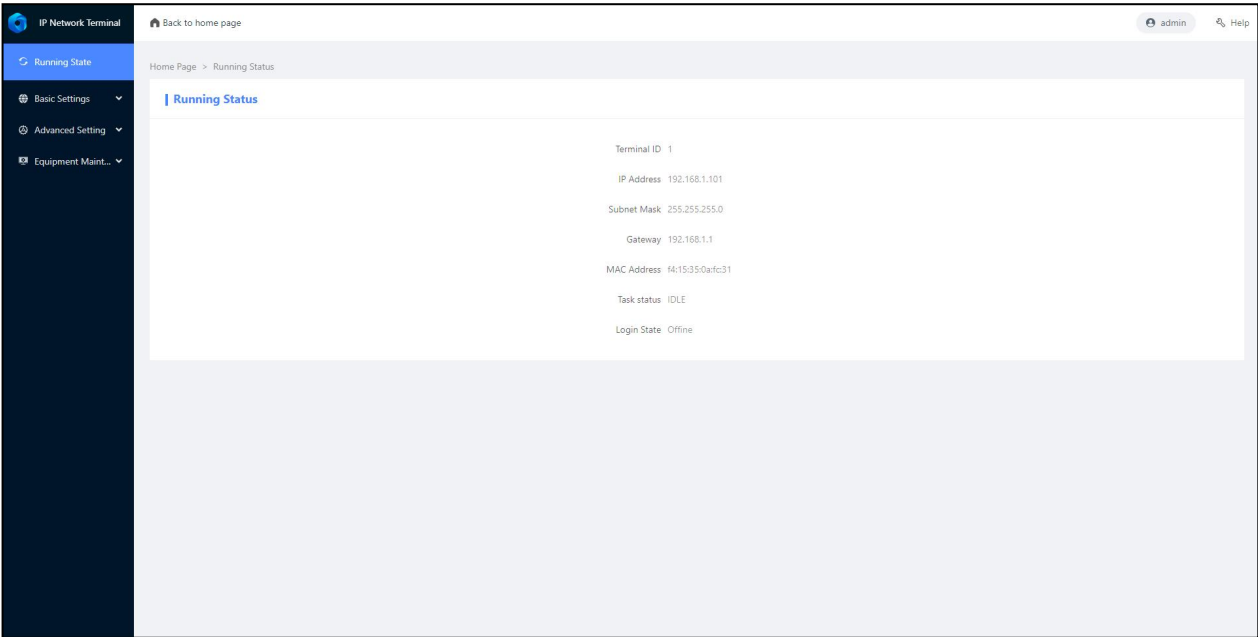


(3) Press login to enter the IP video intercom terminal web page.

**(Note: If the relevant parameter modification in the web page does not take effect after saving, please clear the cache and set them again.)**

# Running Status

When login to the web page, click on “Running Status”, it will show the information of: Terminal ID, terminal IP, default gateway, device MAC address and other information.



## Terminal Settings

Please set the terminal's network parameters according to the live environment. Click [save] after setting, the parameters will take effect after reboot.

The screenshot displays the 'IP Network Terminal' web interface. On the left is a dark sidebar with a menu containing 'Running State', 'Basic Settings', 'Terminal Settings' (highlighted), 'Protocol Settings', 'Audio Parameter', 'Intercom Parameter', 'Video Parameter', 'Alarm Parameter', 'System Parameter', 'Advanced Setting', and 'Equipment Maint...'. The main area has a breadcrumb trail: 'Home Page > Advanced Setting > Terminal Settings'. Below this is a 'Terminal Settings' section with a 'Save' button in the top right. The settings are organized into two rows. The first row contains 'IP Address' (192.168.1.101) and 'Subnet Mask' (255.255.255.0). The second row contains 'Gateway' (192.168.1.1). Below these are two optional DNS settings: 'Primary DNS(Optional)' (192.168.1.1) and 'Secondary DNS(Optional)' (192.168.1.1).

The relevant Settings of network parameters are as follows:

IP Address	The IP address of the device, the factory default IP is 192.168.1.101, which cannot be repeated with other terminals.
Subnet Mask	The subnet mask of the LAN network.
Gateway	The gateway of the network.
Primary DNS(Optional)	The IP address of the preferred DNS server (domain name resolver) for the network.
Secondary DNS(Optional)	The IP address of the alternate DNS server (domain name resolver) for the network.

## Protocol Settings

IP video intercom terminal supports SIP protocol and NAS protocol, you can choose the transport protocol according the actual server you log into.

**Note: Default protocol is SIP protocol.**

### SIP Protocol

The default is SIP protocol. If the device is going to log into a NAS (intercom) protocol server, you need to select the NAS protocol here, please refer to the NAS protocol setting introduction for specific parameter settings.

The screenshot shows the 'Protocol Settings' page of an IP Network Terminal. The left sidebar contains navigation options: Running State, Basic Settings, Terminal Settings, Protocol Settings (selected), Audio Parameter, Intercom Parameter, Video Parameter, Alarm Parameter, System Parameter, Advanced Setting, and Equipment Maint... The main content area has a breadcrumb trail: Home Page > Basic Settings > Protocol Settings. The settings are as follows:

Field	Value
Transport Protocol	SIP
ID	1
Password	1234
Server IP	192.168.1.13
Server Port	5060
Local Port	5060
Audio Port	20000 - 23999

A 'Save' button is located in the top right corner of the settings area.

The relevant Settings are as follows:

Transport Protocol	Setting the protocol for normal communication between device and sever. (Default is SIP protocol )
ID	Unique number to identify the terminal and cannot be duplicated with terminals or other hosts.
Password	Password for terminal to login to SIP server, default is 1234.
Server IP and port	IP address of the SIP server that the terminal logs into. Please enter the correct IP address of the SIP server. The port number cannot be changed except in special cases. (Default is 5060)
Local port	Configure the local port according to the actual situation, the default is 5060.
Audio Port	Configure the audio port range according to the actual situation, the default range is 20000-23999.

## NAS Protocol

The screenshot displays the 'IP Network Terminal' web interface. On the left is a dark sidebar with a menu containing 'Running State', 'Basic Settings', 'Terminal Settings', 'Protocol Settings' (highlighted), 'Audio Parameter', 'Intercom Parameter', 'Video Parameter', 'Alarm Parameter', 'System Parameter', 'Advanced Setting', and 'Equipment Maint...'. The main area has a breadcrumb trail: 'Home Page > Basic Settings > Protocol Settings'. Below this is a 'Protocol Settings' section with the following fields: 'Transport Protocol' (a dropdown menu showing 'NAS'), 'ID' (a text box with '1'), 'Server IP' (a text box with '192.168.1.13'), 'Server Port' (a text box with '2048'), 'Server Spare IP' (a text box with '192.168.1.14'), 'Server Spare Port' (a text box with '2048'), and 'Local Port' (a text box with '2046'). A green 'Save' button is located in the top right corner of the settings area.

The relevant Settings are as follows:

Transport Protocol	Setting the protocol for normal communication between device and sever. (Default is SIP protocol )
ID	Unique number to identify the terminal and cannot be duplicated with terminals or other hosts.
Server IP, port	IP address of the NAS server that the terminal logs in to. Please enter the correct IP address or domain name of the NAS server. The port number cannot be changed except in special cases (the default is 2048)
Server Spare IP, port	The IP address and port of the alternate NAS server.
Local port	Configure the local port according to the actual situation, the default is 5060.

## Audio Parameter

Set the Audio parameters of terminal, click [save] after setting, the parameters will take effect after reboot.

Parameters meanings as following:

Record	Set the terminal line (or recording) output port's function. Set to "Enable", this interface is recording output, and set to "Disable" this interface is line output.
Talk Output Channel	<p>The audio output method of the terminal during the intercom. The default is Speaker.</p> <p>Speaker: The voice output from speaker during intercom</p> <p>Line Output: The voice output from line when intercom, no voice output from terminal speaker</p> <p><b>Note: If "Enable" is selected for the recording interface, the intercom output only supports speaker output, not line output.</b></p>
Broadcast Output Device	<p>The audio output method of the terminal during the broadcast. The default is Speaker.</p> <p>Speaker: The voice output from speaker during broadcast</p> <p>Line Output: The voice output from line when broadcast, no voice output from terminal speaker</p> <p><b>Note: If "Enable" is selected for the recording interface, the broadcast output only supports speaker output, not line output.</b></p>
Talk Input Volume	The total input volume within the conversation (0~15)
Talk Output Volume	The total output volume within the conversation (0~15)
Ring Volume	The ringtone volume when receiving the call
Offline Broadcast Output Volume	<p>The output volume during the broadcasting when the terminal is offline (0~15).</p> <p>When the terminal is online, it gets broadcast output volume from</p>

	server.
Monitor Input Volume	The total input volume when the terminal is monitored (0~15)
Prompt Tone	Users can customize the prompt tones for calling, incoming call, busy line, etc. Click on " " button to select the prompt tone file, and then press "Upload" button to upload. Note: Each prompt tone file must be in WAV format.

## Intercom Parameter

Set the terminal talk parameters, click [save] after setting, the parameters will take effect after reboot.

Parameters meanings as following:

Auto answer	Setting up the method of terminal receiving intercom. When it is enabled, it will automatically answer the call. When it is disabled, you need to press the "Intercom" button to answer the call.
Allow Hangup	Setting whether allow to hang up the call.. If it is disabled, it can't be hang up. If it is enabled, it can be hang up..
Echo Cancellation	Set whether to enable echo cancellation function. If it is disabled, it will have echo during the intercom. It is enabled by default;
Offline Talk	When it's enabled, the terminal can call target terminals which are set in offline parameters when the terminal is offline. when it's disable, the terminal can call when it is offline.
Target IP, port	When offline talk is enabled, set the target terminal IP of the call button, the format is as follows: The terminal ID@IP+Port(eg.2@192.168.1.101:5060)
Play IP	Once enabled, when the terminal is not connected with network cable, press the call button of the device will broadcast the device ID, IP address, subnet mask and other network information.
Standard SIP	Set whether to enable standard sip call function.



Call

After it is enabled, set the sip call target ID, and device time zone.

## Video Parameter

Set the terminal video parameters, click [save] after setting, the parameters will take effect after reboot.

The screenshot shows the 'Video Parameter' configuration page in the IP Network Terminal interface. The page is divided into a left sidebar with navigation options and a main content area. The main content area contains several sections of settings, each with a title and a list of parameters. The parameters are organized into rows and columns, with dropdown menus for most values. A 'Save' button is located in the top right corner of the main content area.

Video Parameter			
Video Main Resolution	Main FPS	Main Bitrate(kb)	Main IFrame
720P-1280x720	20	1024	30
Video Seconde Resolution	Second Bitrate(kb)	Seconde IFrame	WDR
720p-1280x720	1024	30	Disable
Encoding Format	Vertical Rotation	Horizontal Rotation	Video Rotation
H264	Disable	Disable	Disable
OSD Overlay	Video Terminal Information Configuration	Local Terminal Info	MTU
Enable	Server Terminal Configuration	Terminal	1400
Encoding Complexity	FEC	Video RTX	Video Jitter
BP	Disable	Disable	Disable

Parameters meanings as following:

Notes	Video parameters are divided into two-channel coding, and the main code stream is used to set the quality parameters of video when NVR stream is fetched. The secondary code stream is used to set the quality parameters of video in intercom.
Video resolution	The precision of the screen image ,1080P, 720, VGA for optional
FPS	Optional range (10~30).The higher the frame rate, the smoother video
Bitrate(kb)	<p>The video code rate is the number of bits of data transmitted per unit of time during data transmission, with an optional range (128kb~10240kb).</p> <p>At the same resolution, the larger the video code stream, the smaller the compression ratio, and the better the image quality. Also, the higher CPU consumption of the terminal may lead to video card, so the code flow needs to be adjusted according to the actual network situation</p>
IFrame	<p>I frame is also called key frame. I frame is the basis of inter-frame compression. Optional range (1~29);</p> <p>The smaller the value, the more refined the quantization, the higher the image quality, and the longer the code stream generated.</p>
WDR	Once enabling WDR, the terminal can provide automatically backlight compensation or strong light suppression according to the environment to ensure high definition video.
Encoding Format	Set the video encoding format, default is H264.
Vertical rotation	Horizontal rotation: video images will be displayed in horizontal mirror mode;
Horizontal rotation	

Video Rotation	<p>Vertical rotation: video images will be displayed in vertical mirror mode;</p> <p>Video rotation: video images will be rotated 90,180, or 270 degrees clockwise;</p> <p><b>Note: (1) The above three kinds of rotation modes are disabled by default, if there's no special requirement, no need to enable them.</b></p> <p><b>(2) The above three kinds of rotation modes can't be enabled simultaneously, only one mode can be enabled, pls set the rotation angle according to the installation direction of the terminal.</b></p> <p><b>(3) If enabling vertical rotation or video rotation, then character stack will not be used.</b></p>
OSD Overlay	<p>Enable character stack, send terminal name and time information on video, not displayed when disabled.</p> <p><b>Notes: OSD character at most support for 14 characters, among which Chinese characters at most 10, when editing the terminal name of the service software, please do not exceed the specified character number.</b></p>
Video Terminal Information Configuration	<p>Server information configuration and local information configuration are optional.</p>
Local terminal info	<p>When selecting "local configuration" on video terminal information, configure the terminal information on "local terminal information".</p>
MTU	<p>Set the MTU of video, the default is 1400.</p>
Encoding complexity	<p>H.264 encoding type, BP(Baseline), MP (Main profile), HP(High profile) can be set.</p>
FEC Video RTX Video jitter	<p>When enabled, the video quality can be improved under the circumstance of poor network environment (such as network packet loss).</p> <p><b>Note: fec, video rtx , and video jitter can only be effective under SIP protocol. Once enabled, the user also need to synchronously "enable" automatic error correction and packet retransmission in the XC-9000 server software "basic setting" - "comprehensive setting" - "network adaptation".</b></p>

## Alarm Parameter

Set the terminal alarm parameters, click [save] after setting, the parameters will take effect after reboot.

The screenshot shows the 'IP Network Terminal' web interface. On the left is a dark sidebar with a menu including 'Running State', 'Basic Settings', 'Terminal Settings', 'Protocol Settings', 'Audio Parameter', 'Intercom Parameter', 'Video Parameter', 'Alarm Parameter' (highlighted), 'System Parameter', 'Advanced Setting', and 'Equipment Maint...'. The main content area has a breadcrumb trail 'Home Page > Basic Settings > Alarm Parameter' and a 'Save' button in the top right. The 'Alarm Parameters' section contains three settings: 'Board Check' set to 'Enable', 'Noise Alarm' set to 'Disable', 'Noise Alarm Volume' set to '9', and 'Noise Alarm Time(s)' set to '3'.

Parameters meanings as following:

Board Check	When it is enable, the terminal will emit a beep when it is turned on. This function can detect the working status of the MIC and speaker.
Noise alarm	When the noise alarm is enabled, the terminal will automatically alarm if the environment volume reaches a certain level and lasting for a period of time; When it`s disabled, the terminal do not alarm.
Noise alarm volume	Set the environmental noise that will makes a noise alarm.
Noise alarm time(s)	Environment lasting hubbub time, the unit is second.

## System Parameter

Set the terminal system parameters, click [save] after setting, the parameters will take effect after reboot.

The screenshot shows the 'System Parameter' configuration page in the IP Network Terminal web interface. The left sidebar contains navigation options: Running State, Basic Settings, Terminal Settings, Protocol Settings, Audio Parameter, Intercom Parameter, Video Parameter, Alarm Parameter, System Parameter (selected), Advanced Setting, and Equipment Maint... The main content area has a breadcrumb trail: Home Page > Basic Settings > System Parameter. A 'Save' button is in the top right. The 'System Parameter' section includes a 'Telnet' dropdown menu set to 'Enable' and a warning message: 'Notice: Unsafe protocol, risk exists after enabling!'. Below this is the 'ONVIF' section, which includes an 'Onvif' dropdown menu set to 'Enable', an 'Onvif Name' text field with 'admin', and an 'Onvif Password' text field with masked characters and a toggle icon.

The relevant Settings are as follows:

Telnet	Set whether to enable the Telnet remote access terminal function . It is disabled by default.
Onvif	Set whether to enable ONVIF video pulling stream function.
Onvif name, Onvif password	Set ONVIF video pulling stream username and password.

## Security Setting

You can change the password of logging into the WEB page here. After save the password changes, rebooting the web page to take effect.

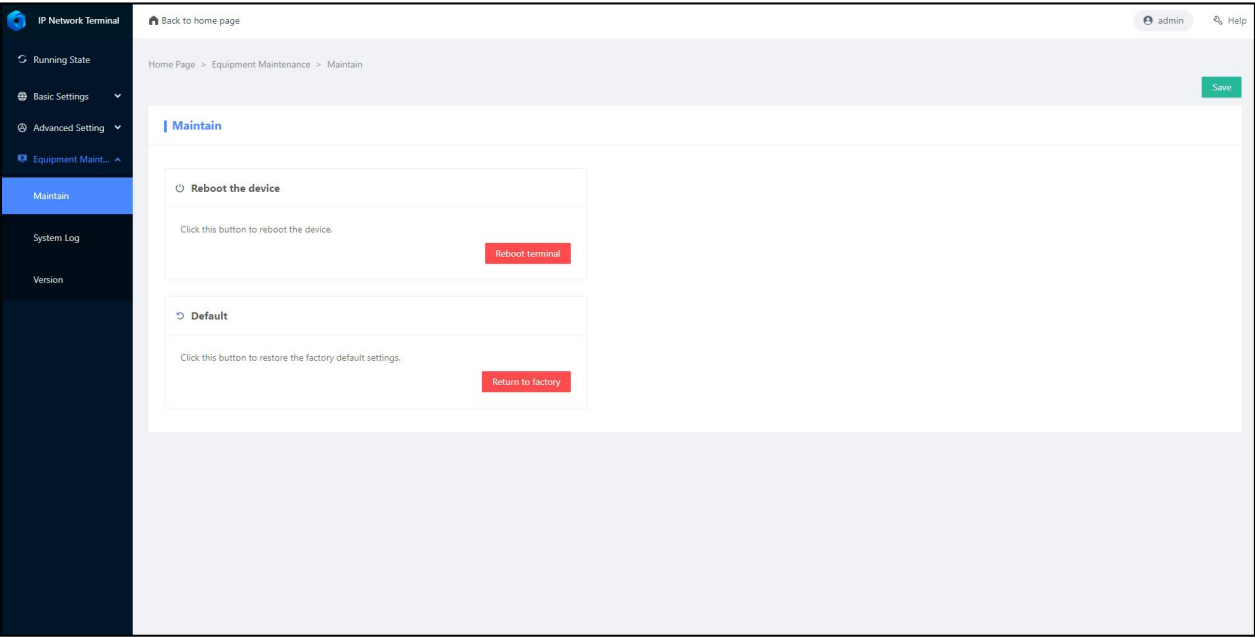
**CA Certificate:** you can upload CA certificate here.

The screenshot shows the 'Security Setting' configuration page in the IP Network Terminal web interface. The left sidebar is the same as the previous page, with 'Security Setting' selected. The main content area has a breadcrumb trail: Home Page > Advanced Setting > Security Setting. A 'Save' button is in the top right. The 'Security Setting' section includes four text input fields: 'Current User Name' (with 'admin' pre-filled), 'Current Password', 'New Password', and 'Confirm Password', each with a toggle icon. Below this is the 'CA Certificate' section, which features a large dashed box for the certificate upload, a file icon, the text 'CA Certificate', and an 'Upload' button.

# Maintain

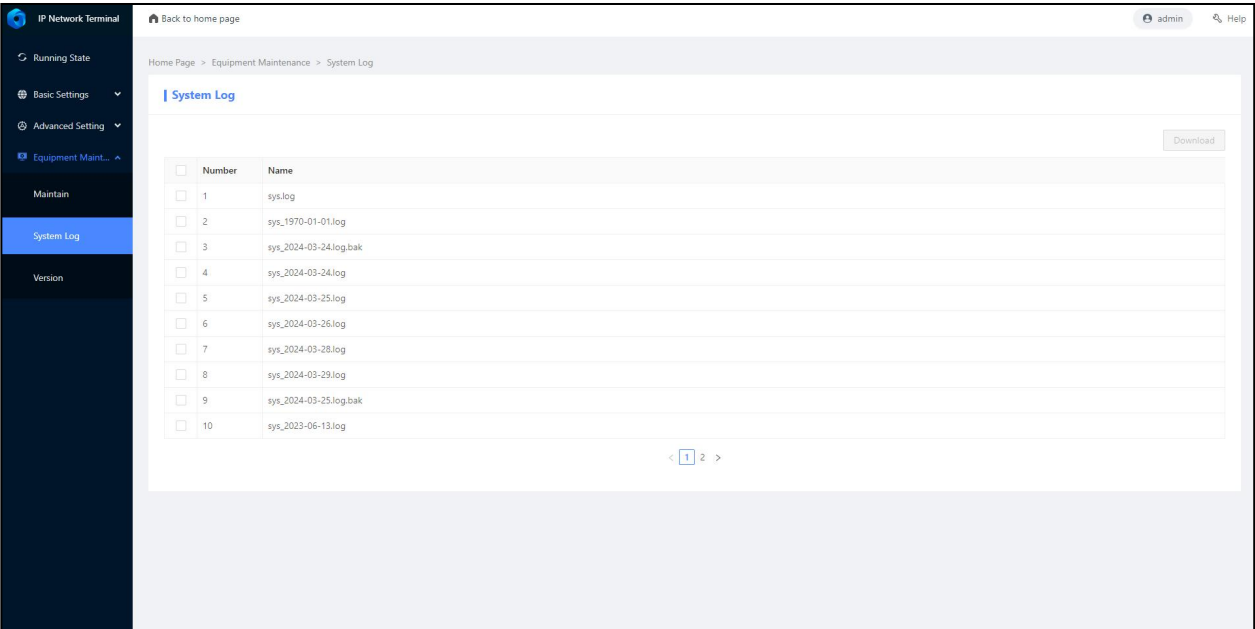
**Reboot Terminal:** Click on this button to reboot the device.

**Return to factory:** Click on this button and all parameters of the device will be restored to factory Settings (please use with caution)



# System Log


IP video intercom terminal can automatically record the running process and generate logs, and support users to download system logs.



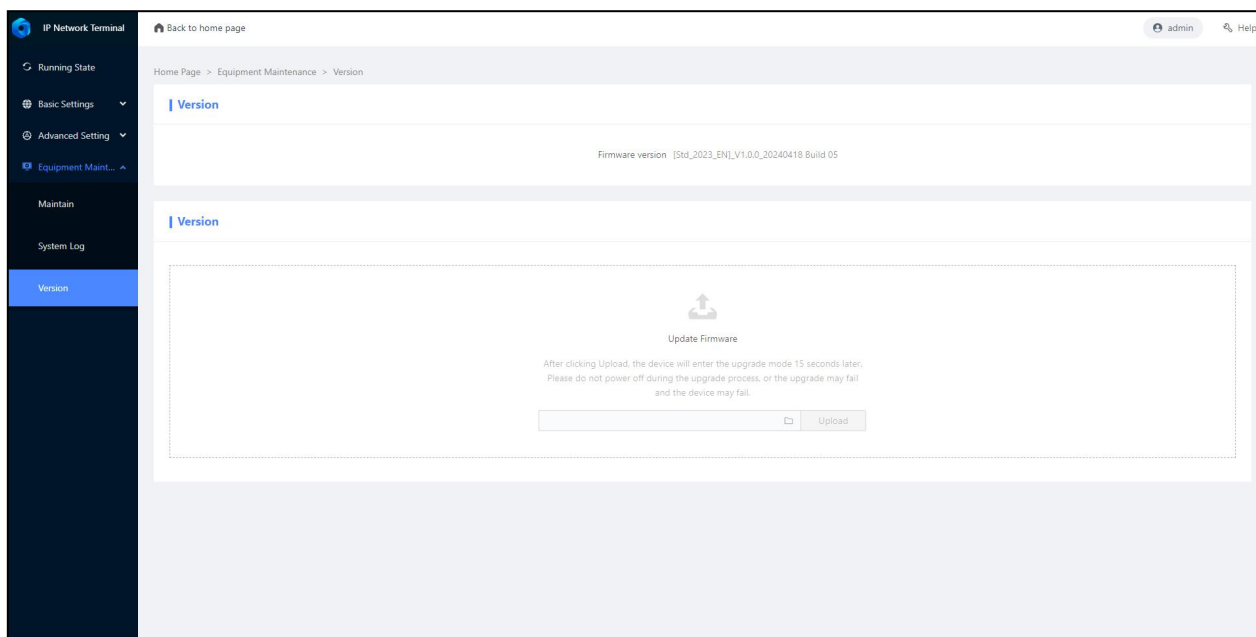
## Version

You can view the current firmware version information of the device in this page.

### Update Firmware:

Click on“”button and select the firmware upgrade file provided by the manufacturer, and then click on "Upload" button to start the upgrade

**Note: Please do not power off during the upgrade process, otherwise it may lead to upgrade failure and device malfunction. The upgrade process is about 120s, the device and WEB page will reboot automatically after the upgrade is completed. (Do not upgrade the firmware unless you have special needs)**



## Other Functions

In addition to above function, IP video intercom terminal could coordinate with the server to accomplish the timing ringing, real-time broadcasting and the timing broadcasting all these functions, for the details please refer to the server software operation instruction.

## 3.3 Basic function

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### Initiate Intercom

Press **【CALL】** button, can directly call the terminal named by server;

After completing the above operation, if the called terminal is free, the terminal will play the waiting tone and wait for the other party to answer, and the called terminal will play the ring tone. If the called terminal is busy or refuses to answer, the terminal will play a busy tone.

Note: the default call TD number is 001 intercom terminal. You can call several calling target, when the called target is busy, it can automatically call next target.

### Receive Intercom

Manual answer or automatic answer can be set on the web page

### Receive Broadcast

Automatically answer without pressing any button.

## 3.4 Troubleshooting

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### Terminal can not login to the server?

1. Check the server software and main control computer is normally open or not. It must close all the firewall before open the service software, (including the systemic firewall and other antivirus software.).
2. Check the network connection is normally working or not. When the terminal is power on, the network port green indicator light will be normal on, and orange indicator light will rapidly short flicker, it means the cable hard-link is normal. If the network port green indicator light is not light up, there is network hard-link problem, please check the cable and switch which is connected the terminal, check if there is any damage and poor contact abnormal working.
3. Check the terminal IP setting. Checking the terminal ID NO, server IP, local IP and gateway IP these parameters is correct or not.

### Web display abnormal?

Emptying the cache or change the browser.

### How to change the password of login web page?

1. Click the security settings in the web page;
  2. Input the old password in the current password column;
  3. Enter the new password in the new password column;
  4. Enter the new password again for confirmation;
  5. Click save;
- After restarting the device, the new password will take effect.



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