

SPON

IP NETWORK DIGITAL AMPLIFIER

User Manual



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Summarize

Safety Precaution

Please comply with warnings and relevant safety tips.

After reading this manual, please put this manual in accessible place for future reference.

Warnings



This sign means there are potential safety hazards when opening the device, misoperation may result in severe injury or death.



This sign is used to remind the user that the attached files of this device contains important operation and maintenance instructions.

Installation & Setting

(1) Avoid getting wet by water.

Do not expose the machine to rain or other environment that may be contaminated by water or other liquids, otherwise it might cause fire or electric shock.

(2) Do not use power supply with unspecified voltage.

Must use the voltage identified by the device to connect the machine.

Using voltage higher than the the identified voltage might cause fire or electric shock.

(3) Do not scratch the power cord.

Do not scratch the power cord, and do not cut & twist the power cord.

Meanwhile, keep the power cord away from heating element, do not place any heavy objects on the power cord (including the machine itself), otherwise it might cause fire or electric shock.

(4) Providing the power supply with independent, reliable ground wire for the device.

In the process of engineering construction, the ground wire of the equipment must be connected to the earth, otherwise it might cause malfunction or damage of the equipment.

(5) Make sure to connect the ground wire to earth terminal, to avoid electric shock.

(6) The installation environment of the equipment should have good ventilation.

Do not install the equipment in the environment which is wet, dusty, exposed to direct sunlight, close to electric heater or smoke, otherwise it might cause fire or electric shock.

(7) Do not pile the equipment one above another.

In the case of cabinet installation, please make sure that there's sufficient heat dissipation space inside the cabinet, there shall be at least 2cm space between the different devices, for the heat dissipation of the equipment.

(8) Do not block the thermovent.

If the thermovent is blocked, it might cause heat accumulation inside the machine and cause a fire.

(9) Equipment must be installed by professional technical staff.

During Using

(1) In case of abnormal occurrence:

In the process of using, please cut off the power immediately once finding any abnormal occurrence as below and get in contact with the distributor.

If continuing using, it might cause fire or electric shock.

- The machine is smoking or emitting strange smell.
- The interior of the machine is invaded by water or foreign matters.
- The machine has fallen down, or the shell of the machine is damaged.

- The power cord is damaged (wire core exposure or broken wire, etc.)
- Malfunction (cannot be connected to network or no sound, etc.)

(2) Keep any foreign bodies out of the machine.

Do not let metal objects, inflammable objects or other foreign bodies get in the vent or inside the machine, otherwise it might cause fire or electric shock.

(3) Do not put liquid containers or small metal objects above the machine.

If accidentally knock over the containers and let the liquid get inside the machine, it might cause fire or electric shock.

(4) Do not open the machine or transform the machine.

The machine contains high-voltage parts, once the outer cover is opened or transforming the machine, it might cause fire or electric shock.

All matters related to maintenance and machine interior modification shall be handled by professional personnel.

(5) Matters needing attention during maintenance or when the machine is not in use for a long time:

During maintenance, when the machine is not in use for 10 days or above, to ensure safety, please cut off the power and pull out the power plug.

Not complying with relevant provisions might cause fire or electric shock.

Production Introduction

IP network digital power amplifier is equipped with built-in IP Audio digital network audio technology with independent intellectual property rights, adopting high-performance digital power amplifier, which has the features of high efficiency, high performance and low distortion.

IP network digital power amplifier is a part of IP network PA system, controlled by the system software, which can realize local and remote background music broadcasting functions.

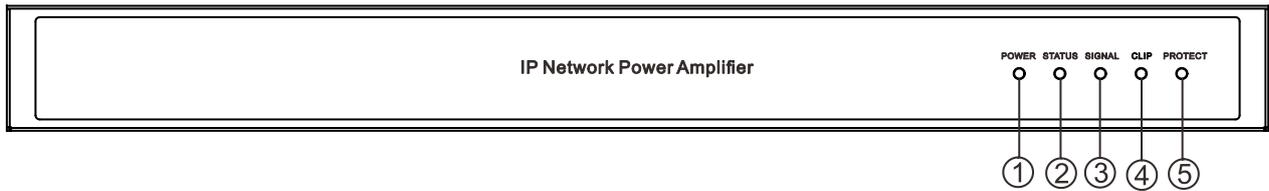


Features:

- Adopting 1U rack-mounted design, steel plate shell, with smaller space occupation, sturdy and durable.
- 100V / 70V constant voltage output (Default constant voltage 100V output, support to set as 70V output on webpage).
- Equipped with power light, status indicator light, signal light, overload light and protection light on the front panel, used for indicating the working condition of the amplifier, easier maintenance.
 - With 1×MIC Input and 2×Line Input, independent volume control of MIC Input and Line Input.
 - Possessing MUTE function, supporting MUTE level adjustment.
 - With 1×Line Output, external amplifier expandable.
 - With 1×Alarm Input and 1×Alarm Output, supporting DC 24V strong cutting power output.
 - Supporting offline broadcasting, local broadcast can be started automatically when the network is interrupted.
 - Built-in complete protection circuit, supporting overload and overheat protection, supporting power supply and circuit lightning protection and surge protection.
 - Standard RJ45 interface, can be connected when there's Ethernet, supporting cross network segment and cross routing.

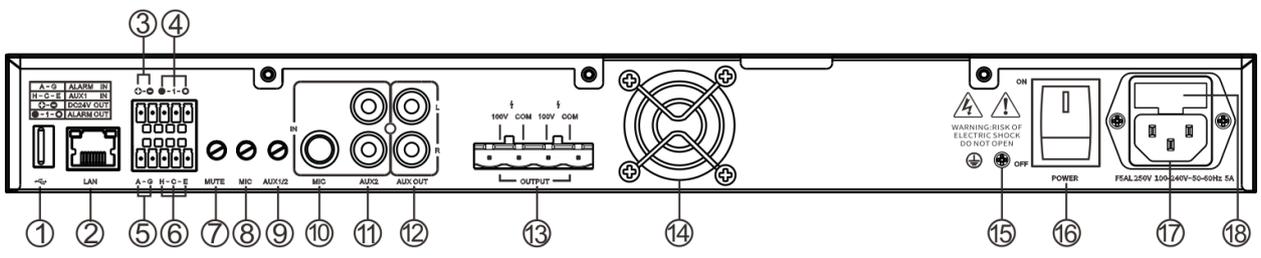
Interface Specification

【Front Panel】



- ①POWER: When the power is connected, red light keeps on.
- ②STATUS: Bi-colored light, green light keeps on when the equipment is online, red light keeps flashing when the equipment is offline, green light keeps flashing when receiving signals.
- ③SIGNAL: Light keeps off when there's no signal, green light keeps on when there's signal.
- ④CLIP: Red light keeps on when the input signal is oversize or output is overload.
- ⑤PROTECT: The light keeps on under protection or malfunction status of the amplifier module.

【Back Panel】



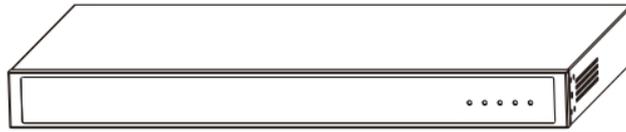
- ①USB Interface: For program download.
- ②RJ45 Network Interface: Insert the network cable to connect to the Ethernet switch, so that the device can log in to the server normally.
- ③DC24V OUT: DC24V Power output interface(Optional).
- ④ALARM OUT: Alarm output interface(●-NC:Normally Closed; 1-COM: COM; ○-NO: Normally opened).
- ⑤ALARM IN: Alarm input interface (A: Alarm input; G: GND).
- ⑥AUX1: Line input1 interface(Balance input) (H:Hot end, C:Cold end, E:Earth end) .
- ⑦MUTE Knob: MUTE depth adjustment knob, when the MIC input signals, it'll automatically MUTE AUX1 and AUX2, clockwise rotation will increase the MUTE depth, anticlockwise rotation will decrease the MUTE depth.
- ⑧MIC Knob: Adjust the MIC input volume, clockwise rotation will increase the volume, anticlockwise rotation will decrease the volume.
- ⑨AUX1/2 Knob: Adjust the Line input volume ,clockwise rotation will increase the volume, anticlockwise rotation will decrease the volume.
- ⑩MIC: Mic input interface (Note: this interface only supports active conference microphones, it doesn't support moving coil microphones).
- ⑪AUX2: Line input2 interface (Unbalance input).
- ⑫AUX OUT: Line output interface.
- ⑬Power Output Port: Default constant voltage 100V output,support to set as 70V output on webpage.
- ⑭Cooling Fan: When installing, ensure that the fan outlet is not blocked, and try to keep a distance of more than 10cm.
- ⑮Ground Terminal: To ensure the safety and reliability of the equipment, ground terminal must be connected to the earth.
- ⑯Power Switch: Control the on & off of the power.
- ⑰Power Input Interface
- ⑱Insurance Block

Introduction

Packing List

IP network digital amplifier contains the following accessories. Please check the accessories before installation. If any accessories are missing, please contact your distributor.

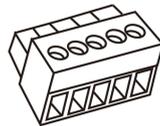
- (1) IP Network Digital Amplifier 1PCS



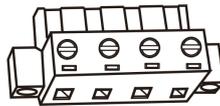
- (2) Countersunk Cross Screw (M3*6) 8PCS



- (3) Wiring Terminal ((3.81-5P) 2PCS



- (4) Wiring Terminal (7.62-4P) 1PCS



- (5) Hangers 2PCS



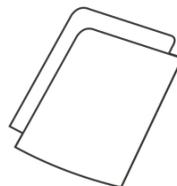
- (6) Power Cord (3*1.0mm²/1.5m) 1PCS



- (7) Foot Pad(φ12*3) 4PCS



- (8) Installation Instruction 1PCS

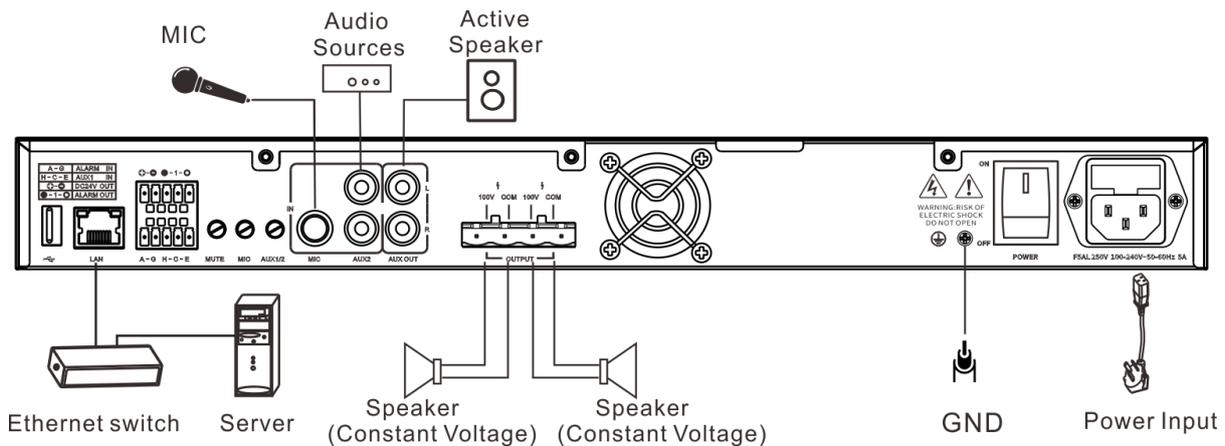


- (9) Certification 1PCS



Wiring

- (1) Connect one end of the power cord to the power interface of the IP network digital power amplifier, and the other end to the power socket;
- (2) Connect one end of the Ethernet cable to the network interface of the IP network digital power amplifier, and the other end to the switch;
- (3) Connect other devices to corresponding interfaces.

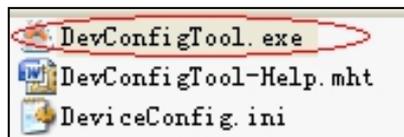


Basic Network Settings

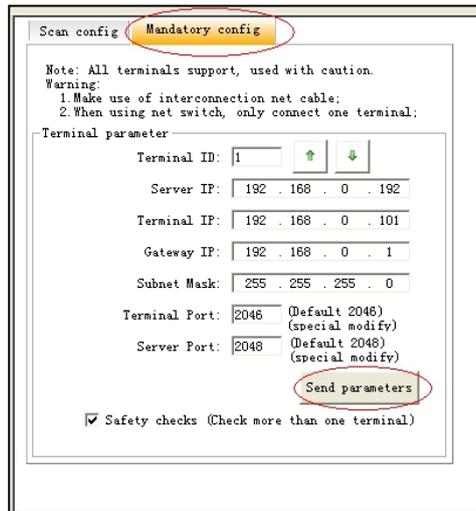
After the wiring of IP network digital power amplifier, plug in the power supply, then change the network parameters of the terminal according to the operational environment, there are two different methods:

Terminal Equipment Scanning Tool

- (1) Under [CD:\Tools] directory, find and run "IP Audio Terminal Configuration Tool", then enter the default password "123456".



- (2) Choose **【Mandatory Configuration】** from the menu on the right side, then fill in correct parameters in the **【Terminal Parameters】**, click "send parameters" button to finish the IP parameters settings.



Note:

- 1) If using Windows 7 system, please use the administrator mode to run the program, and close the firewall or other related software;
- 2) Terminal configuration tool can only configure one terminal at one time, please make sure that a computer has only connected to one terminal when using this method to configure the network parameters of the terminal.

Through Web Interface

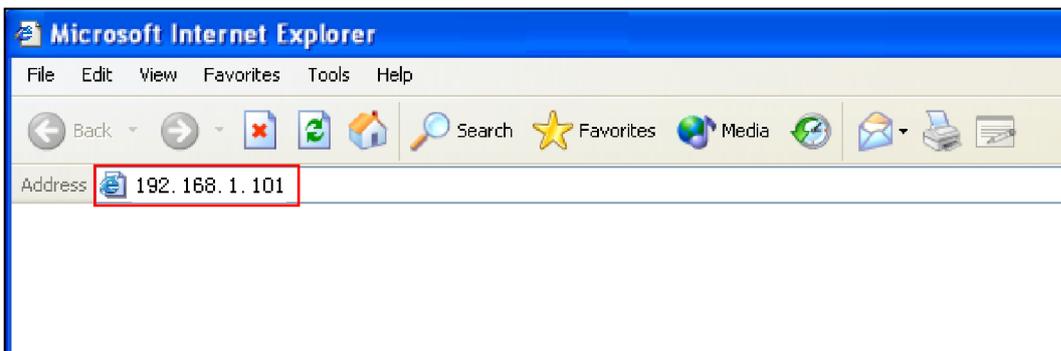
Enter into the Web interface of IP network digital power amplifier, then change the network parameters of the terminal according to the operational environment, after the setting, click “Save” button.

For specific operation steps, you can take the network parameters settings in the terminal parameters customization for reference.

Terminal Parameters Customization

Web Interface Login

- (1) Enter the IP address (Factory Default IP is 192.168.1.101) of the IP network digital amplifier in the browser address bar, then press the Enter key.



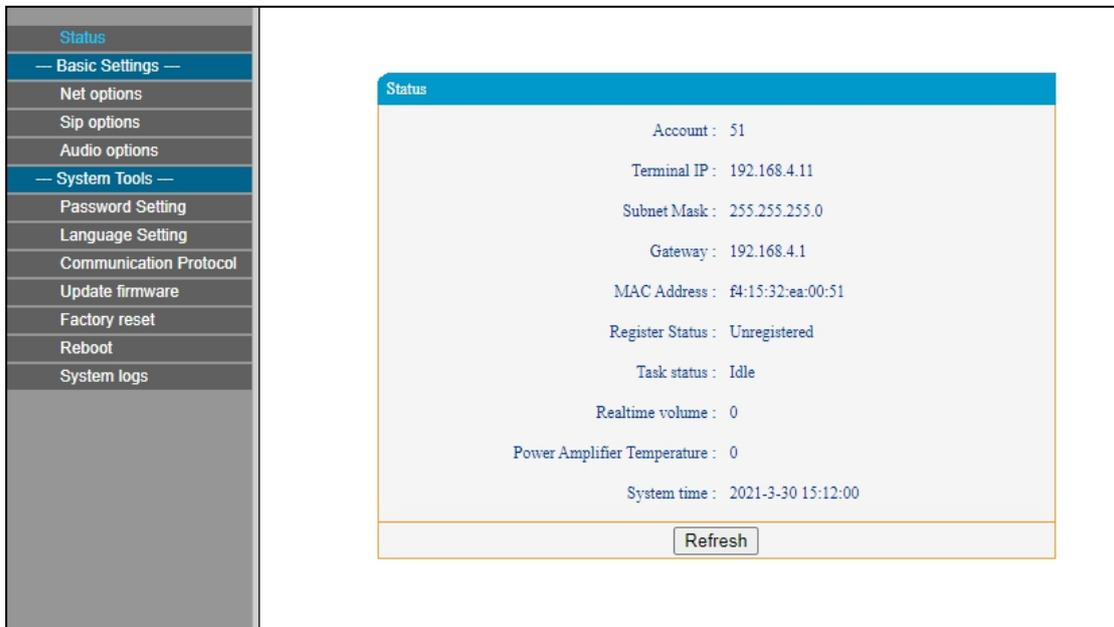
- (2) Enter the user name and password (Defaults are both “admin”) in the login window of the Web interface.



(3) Press “Login”, then enter the Web interface of the IP network digital amplifier. (Remark: Please clear caches then set up again if former saved parameters don’t take effect in the web page.)

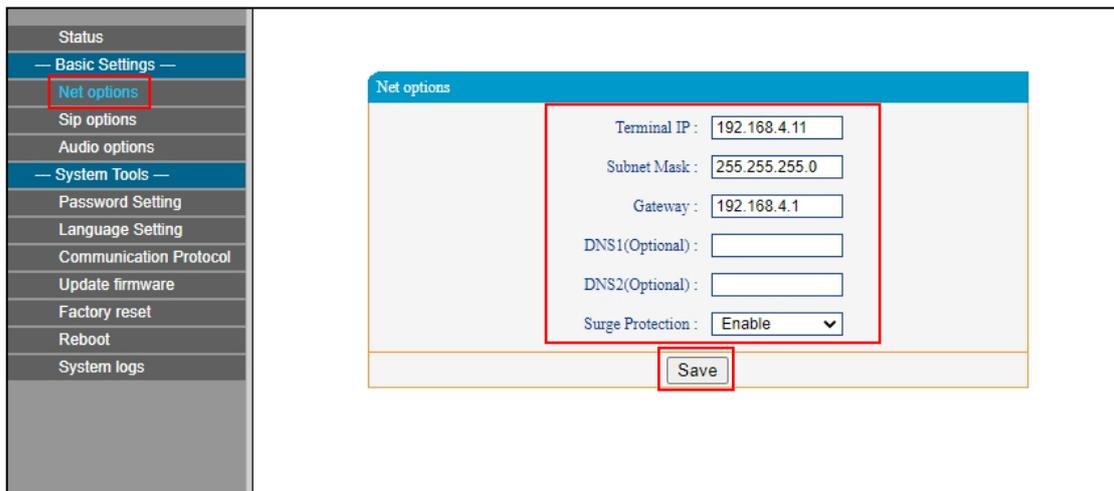
Operation Status

In this web page, users can check terminal ID ,terminal IP address , subnet mask,ect. At same time they can check terminalstatus, pre-set up tasks status, realtime sound volume, amplifier temperature ,system date ect.



Network Parameters

Set the network parameters, please modify the parameters according to the live environment, save setting, and restart the device to take effect.



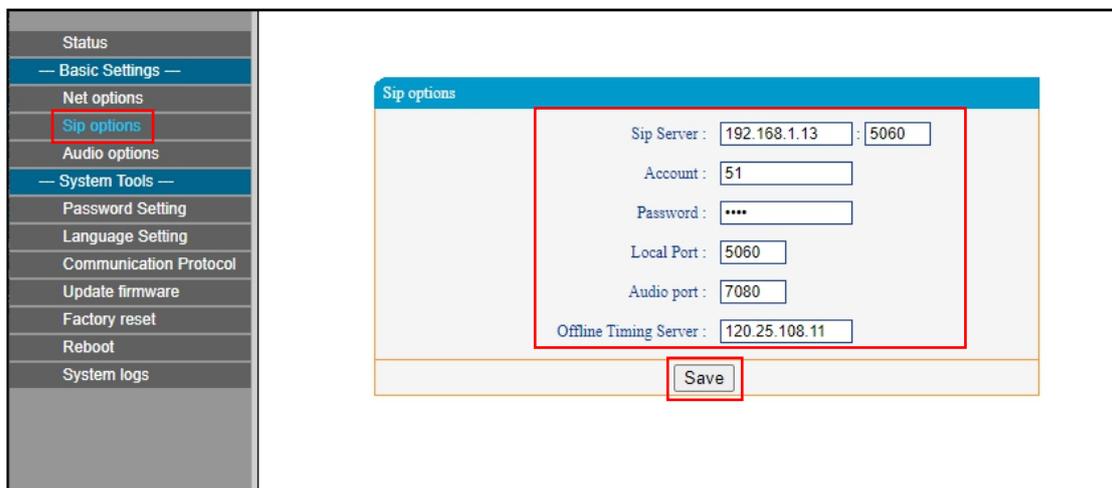
Meanings of the parameters:

Terminal IP	The IP address of the terminal, factory default IP is 192.168.1.101, it cannot be the same as other terminals.
Subnet Mask	Subnet Mask of the device.
Default Gateway	The gateway of the network of the device.
Primary DNS server	The IP of the primary DNS of the network of the device.
Secondary DNS server	IP of the secondary DNS of the network of the device.
Surge Protection	Set whether to enable surge protection, default settings is Enable.

SIP Parameters (SIP protocol)

Set server platform parameters for terminal login. When the communication protocol between the terminal and the server is SIP protocol, directly set the server parameters in "SIP parameters". Save after setting, restart the device to take effect.

Note: If the server that the terminal logs in is NAS server, it is necessary to set the protocol as NAS sever in "System Tools"--"Protocol Settings" in the web page, and then set the service parameters.

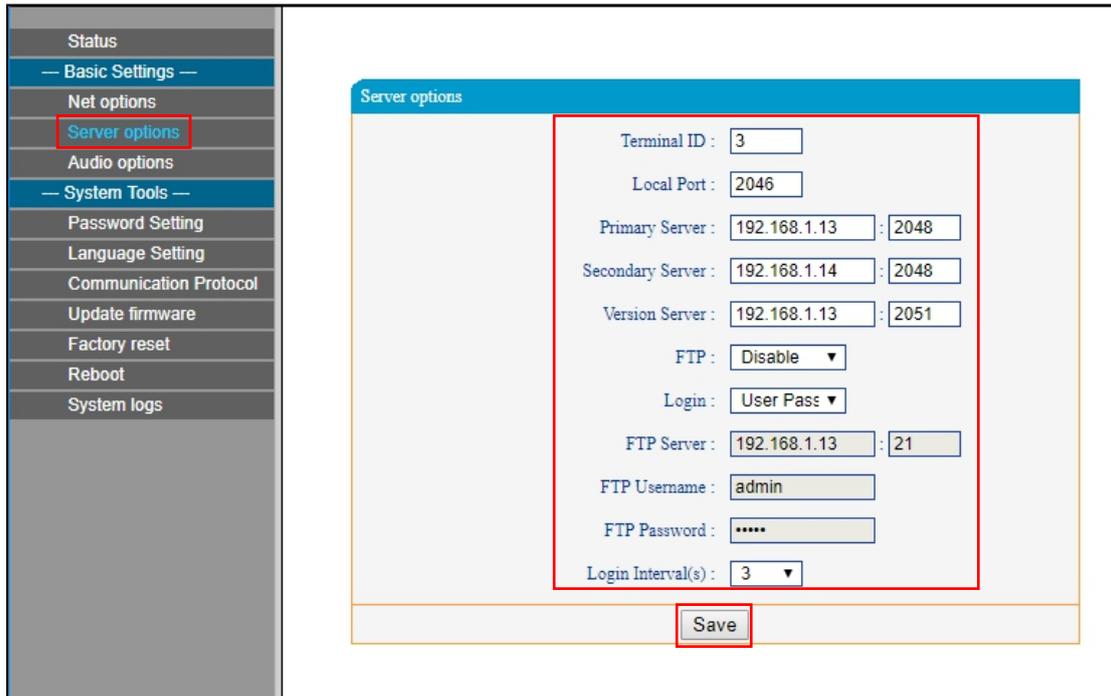


SIP parameter configuration as per the following when user choose SIP protocol.

SIP server	SIP server IP address of the terminal, please input right SIP server IP address or domain name, do not modify without any special situation (the defaults is 5060).
Account number	SIP account of terminal, it can not repeat with other terminals.
Password	Password of terminal login SIP server, it can not repeat with other terminals.
Local port	Configure local port according to the real situation
Audio port	Configure audio port according to the real situation.
Offline timing server	Set up the IP of offline server. After saving and starring the device, it will be self-correcting time when device offline 6 hours or long time disconnecting to server .
Offline timing terminal	When setting the terminal calibration address (that is, the IP address of other IP network digital power amplifier), when offline comparison server calibration failure, by the terminal calibration. Enable when offline, about 6 hours for school.

Service Parameters (NAS protocol)

The default protocol between terminal and server is SIP protocol. If terminal logs in NAS server,switch the protocol to NAS version in "System Tools" - "Protocol Settings" on the Web page. After switching and saving, restart the device and empty the browser cache, the web version will change to NAS protocol version. Then "service parameters" can be set. After setting, save and restart the device.

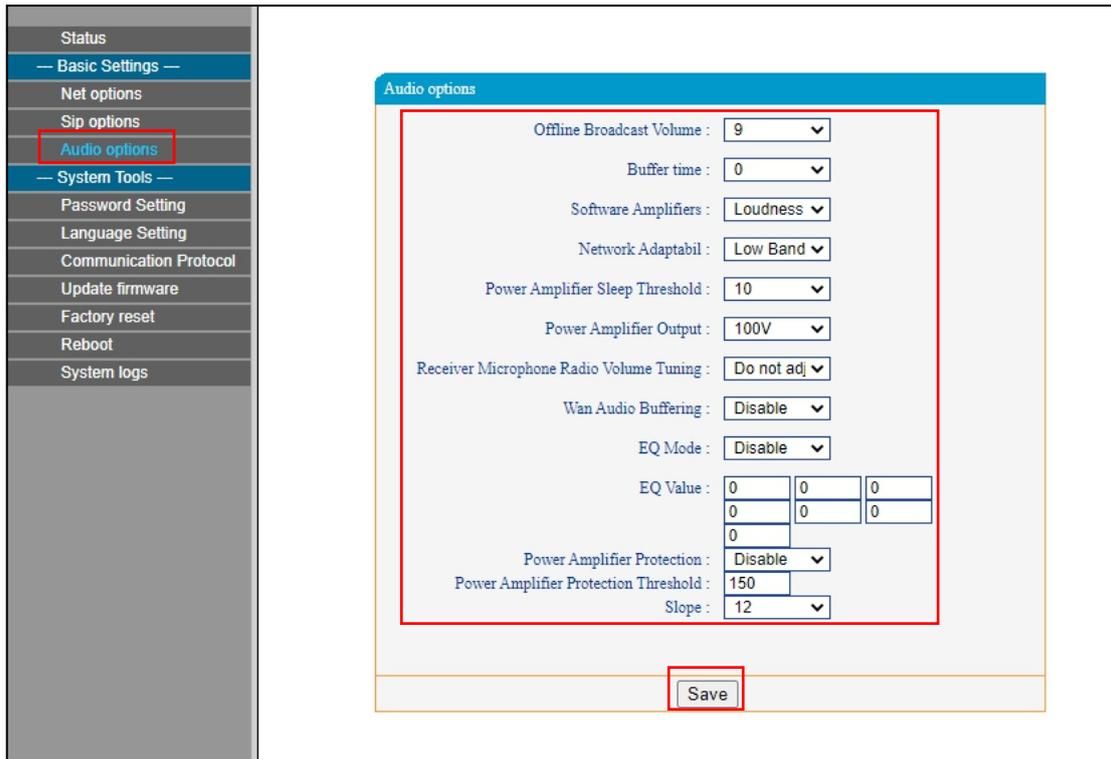


NAS parameter configuration as per the following when user choose NAS protocol.

Terminal ID	The unique number of the identified device, which cannot be repeated with the terminal or other host, factory default is 1.
Local Port	The port of the device. Note: the port should not be modified except under special circumstances.
Primary Server	The server address where the device is logged in, the factory default setting is 192.168.1.13.
Secondary Server	When the primary server fails to connect, the secondary server can be logged in. After the primary server can be connected, the terminal can log in again to the primary server, the factory default setting is 192.168.1.14.
Version Server	Version Server IP, When the terminal restarts, you can connect to the version server to automatically upgrade the program.
FTP	Set whether to enable FTP or not, when enabling, the file server can download the specified folder contents to the built-in storage through FTP 【 Note: if XC server is enabled to push offline tasks, the FTP function must be turned off 】
Login Method	FTP login method, supporting anonymous login and username & password login.
FTP Server	Set The IP of FTP server.
FTP User Name	The user name used for the login of FTP, factory default is admin.
FTP Password	The password used for the login of FTP, factory default is admin.
Login interval(s)	When the device is offline, the interval time of applying to the login to the server.

Audio Parameters

Set the terminal audio parameters and save, then restart the device to take effect.



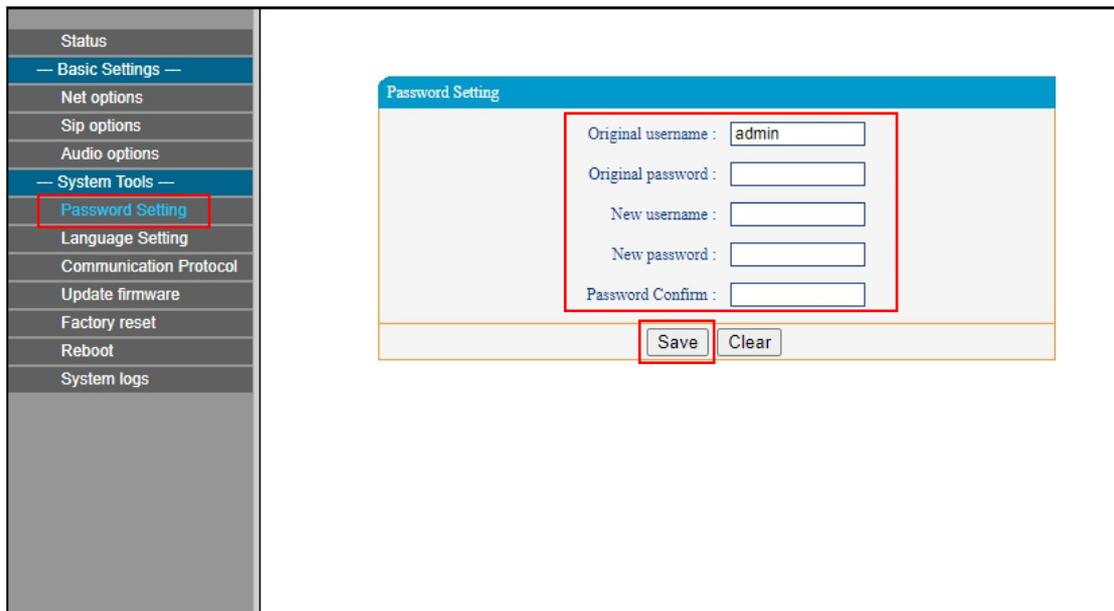
Meanings of the parameters:

Off-line Broadcast Volume	Set the volume of IP network digital amplifier offline broadcast (0~15). Remark: Device sound volume will be controlled by system software when device connect to the network
Buffer Time	Set the broadcast buffer time (that is, after receiving the broadcast task, how many seconds delay after the broadcast) to ensure the quality of the broadcast output when the network environment is poor.
Software Amplifiers	Configure digital audio sources quality ,the sound quality priority or the loudness priority can be chosen ,default is sound quality priority .It is recommended to choose loudness priority in the environment with high loudness requirement.
Network Adaptability	Set up the network adaptability ,default is low bandwidth ; In the case of high data integrity requirements, it is recommended to choose "low bandwidth"; In the case of Synchronization Requirements, it is recommended to choose "low delay"
Power amplifier Sleep Threshold	Set up the power amplifier sleep threshold , when detect the volume of line input or mic input reach the set threshold value ,the power amplifier will be turn on ,in order to achieve different applications under low power standby. The larger the threshold setting, the higher the acoustic requirements for turning on the power amplifier .(Default is 10)
Power Amplifier Output	Default is constant voltage 100V output .support to set as constant voltage 70V output.
Receive Microphone Broadcast Volume Tuning	Can properly attenuate the volume of the receiving microphone broadcast (the attenuate value 1dB、2dB、3dB、4dB can be set),to avoid distortion caused by excessive volume . Default is not adjusted.

EQ Mode EQ Value	The sound effect of current network task can be adjusted after enable the EQ. Note:EQ value must be adjusted by personnel with relevant professional knowledge, non-professional personnel do not adjust at will, otherwise it will lead to poor sound quality.
Speaker Protection Speaker Protection Threshold	Parts of the speaker unable to play low sound ,constant low sound may caused speaker damage. Enable the speaker protection threshold can filter out the low sound ,In order to protect the speaker from damage . Speaker Protection Threshold:This value corresponds to the lowest value that the speaker can accept the audio frequency
Slope	For special speakers or special scenes, just keep the default value

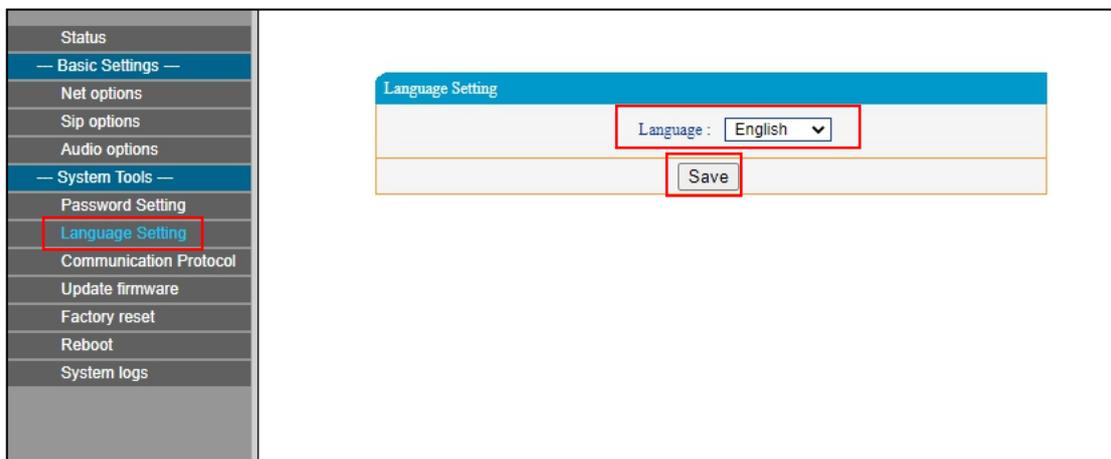
Password Settings

You can modify the account and password through web management parameters .After setting, please restart the web page.



Language Settings

Users can change it between Chinese and English through web settings .



Communication Protocol

Set the protocol for the normal communication between terminal and server, support intercom (NAS) and SIP protocol, the

default is SIP.

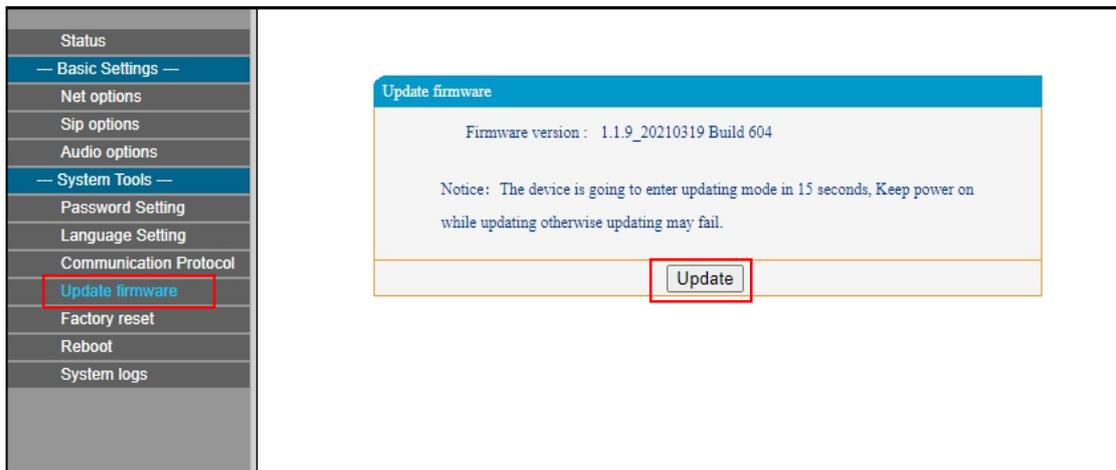
Please select the corresponding protocol according to the server type that the terminal logs in, and then make relevant settings. After setting the protocol, save it and restart the device to take effect. At the same time, you need to clear the browser cache.

Note: Web pages of different protocols are slightly different. For details, please refer to the actual interface.

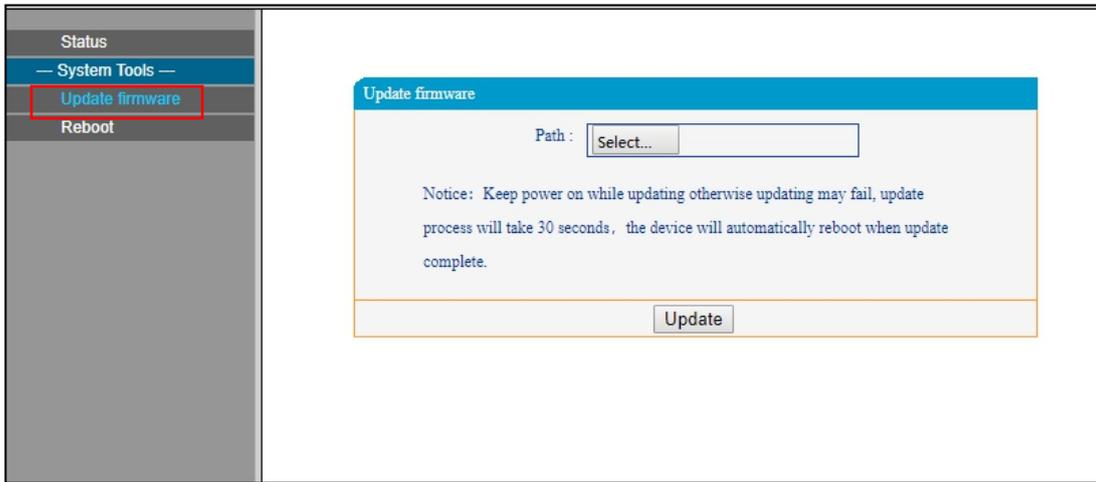


Firmware Upgrade (Note: Do not upgrade the firmware unless there's a special need)

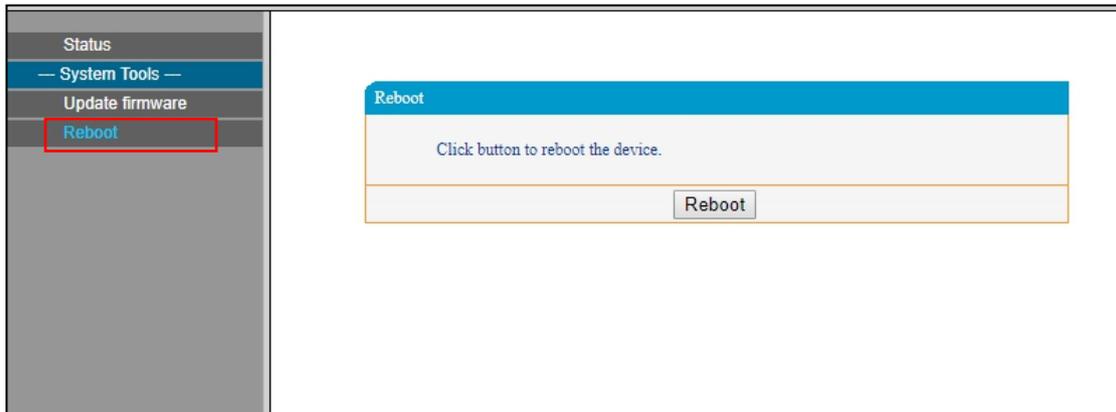
Click the “Press” button, the device will enter into upgrade mode in 15s. (If the web shows an exception after entering upgrade mode, please clear the cache and login the web page again)



After entering into the firmware upgrade mode, select the firmware upgrade file provided by the manufacturer, then click the “upgrade” button to start upgrade. (Do not power off during the upgrade process, otherwise it may cause the upgrade failure and equipment failure)

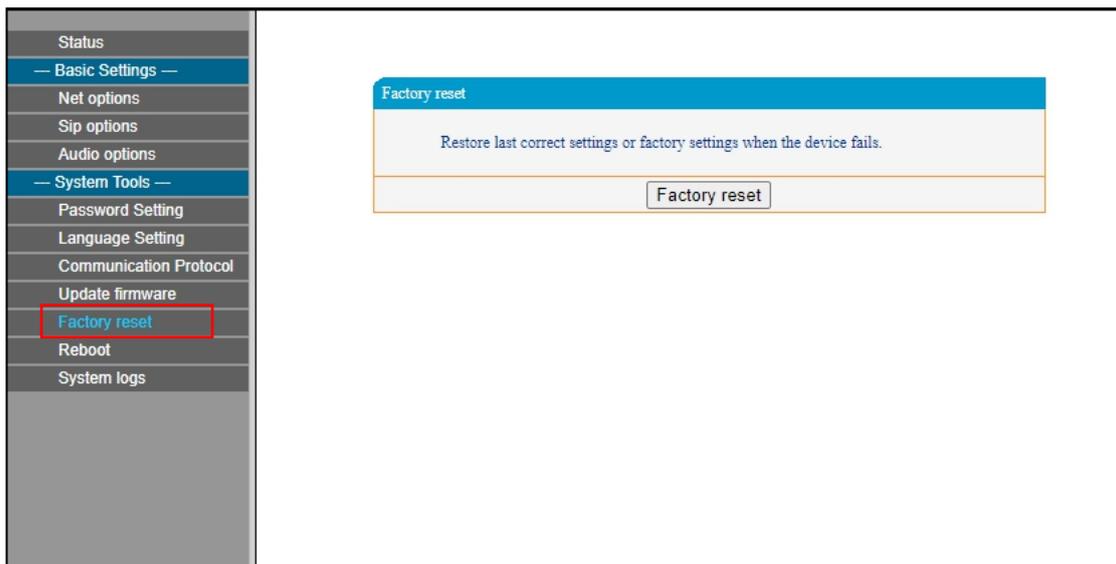


Exit upgrade mode: If click the “upgrade” button by mistake, you can click the “reboot the device” button in the upgrade mode, then reboot the device to get back to normal mode.



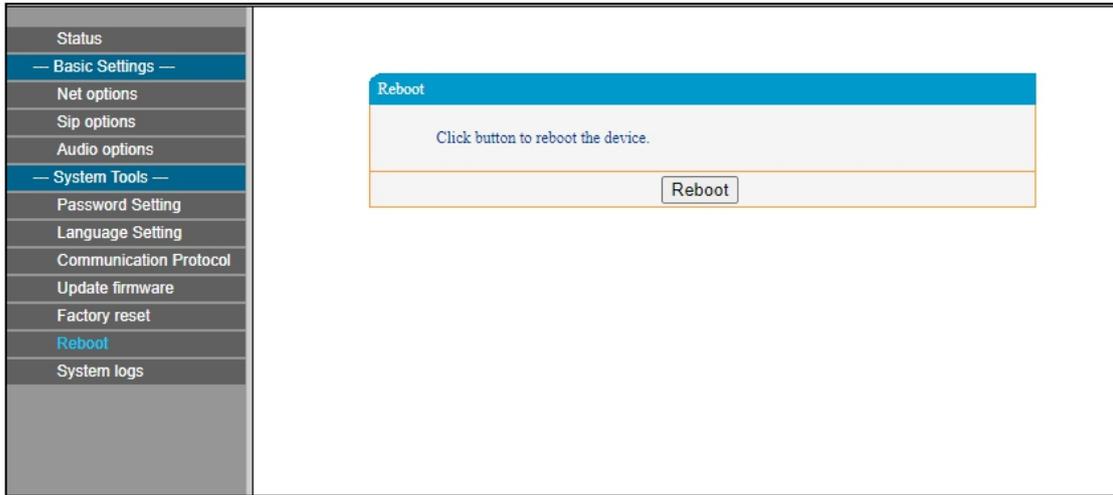
Restore Factory Default Settings

Restore factory setting: all parameters were restored to factory setting.



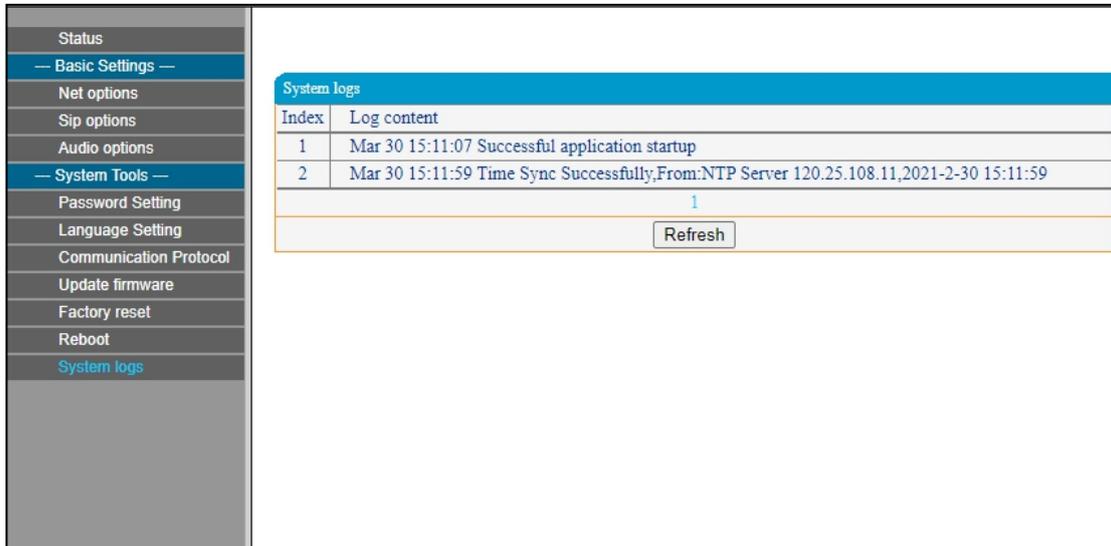
Reboot Device

Click “reboot the device” button can manually reboot the device, some of the parameters modification in the Web page will only take effect after rebooting the device.



System Log

IP network wall speaker can record the operating condition and form log, the user can browser the system log in web page.



Basic Function

Broadcast

Supporting local broadcasting, terminal broadcasting and server broadcasting.

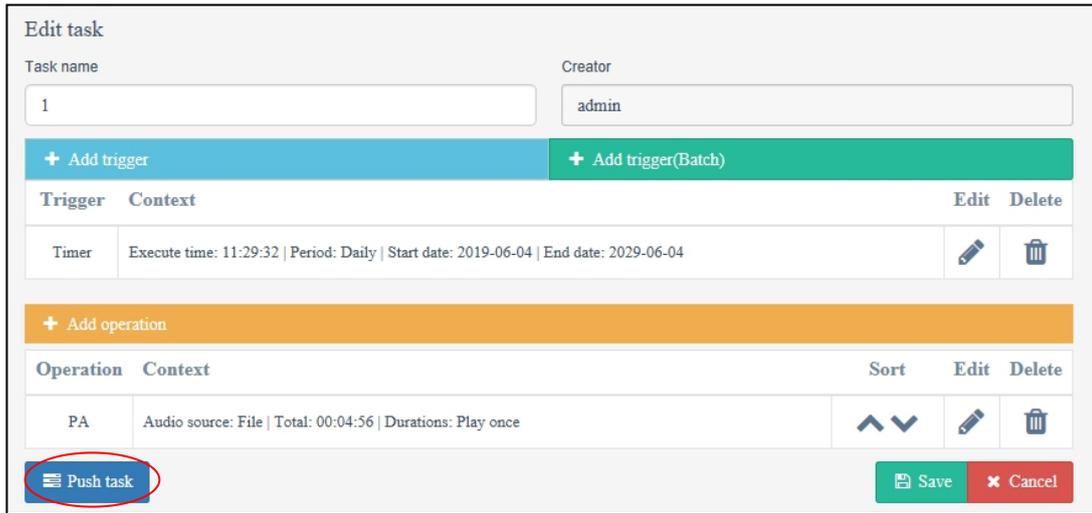
Offline Broadcast

IP network digital amplifier supports offline broadcast, when the device is offline, the offline task set by the server can be played regularly. The offline broadcast setting method is as followed:

XC Server Setting Method:

- 1) Add the "regular ringing" task in the "scheduled task" interface of the service software (set time and cycle type in the "add trigger"). Set the target terminal, audio file, etc. in the "add operation";

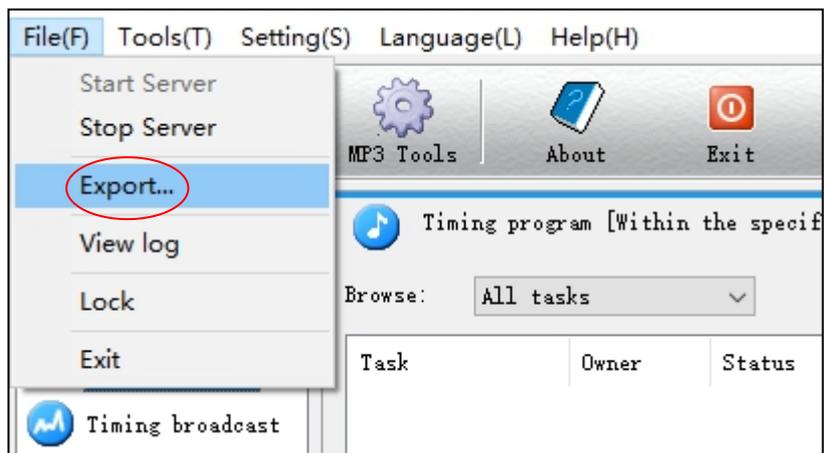
After the task is saved, press push in the lower left corner . When the device is offline, the specified task is performed.



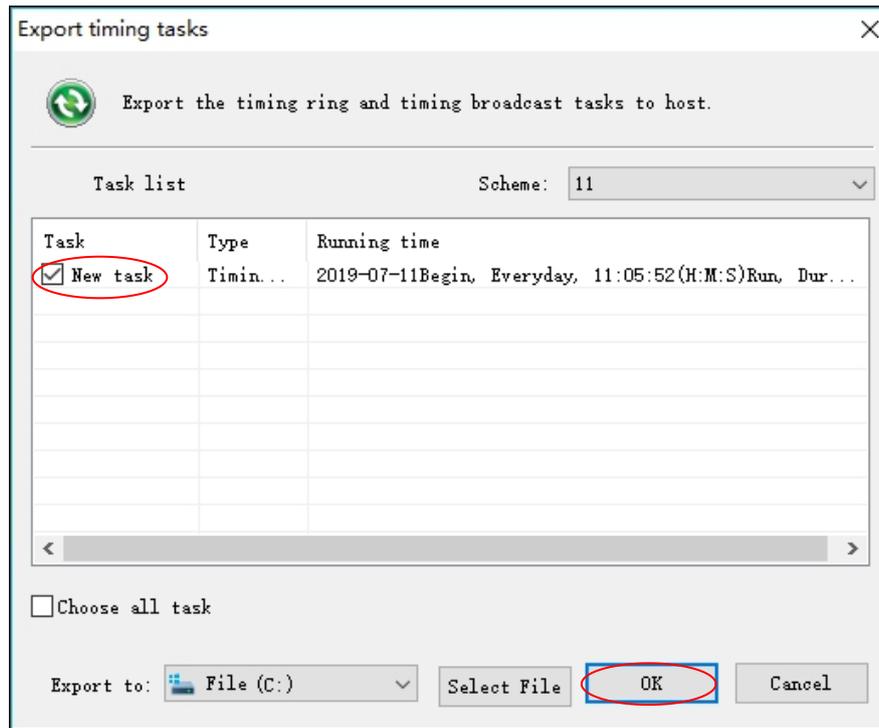
Note: offline broadcast only supports MP3 format audio;

Internal communication server setting method:

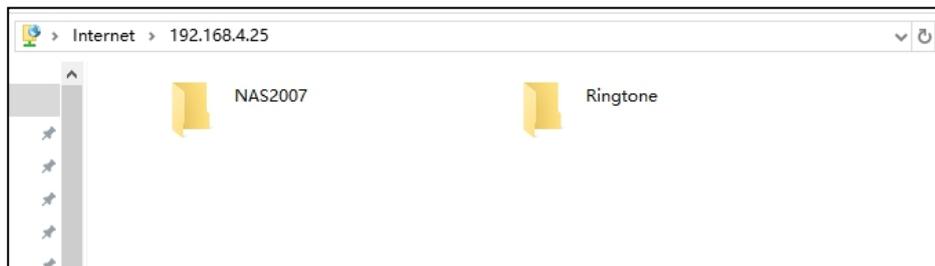
1) Firstly set the task of "regular ringing " in the service software (please refer to user manual of software), and then click [operation] - [export];



2) Select the t task in the "Export timing tasks" list, and then click "OK", tasks will be exported to USB root directory.



3) Access to terminal FTP:// terminal IP(the defaults user name and pass is admin),put the exporting timing ring bell document to “NAS2007” under FTP (note :If there is no folder named as NAS2007 ,please create a new one), It will be effective after reboot device.



Note: FTP [Ringtone]- [ShortIn] directory is placed under the alarm input prompt sound, named fixed as: alarmin1 or alarmin2 (alarm input 1 is triggered, will play alarmin1 prompt sound, alarm input 2 is triggered, will play alarmin2 prompt sound), the file must be mp3 format, 128Kbps file.

Troubleshooting

No power? The power indicator is not on?

1. Check whether the power plug is loose and the power cord is in good condition.
2. Please check whether the power switch is on.
3. Please check whether the safety of the power socket is burned out.

Terminal unable to log in to server?

1. Check whether the service software and the main control machine are opened normally.Before opening the service software, it is necessary to close all the firewalls (including the firewalls of the system and other antivirus software);
2. Check whether the network connection is normal, check the network cable and switch connected with the terminal to see whether there is normal operation, damage, bad contact and other phenomena;
3. Check the IP setting of the terminal.Check whether the terminal's ID number, service IP, local IP, gateway IP and other parameters are set correctly;

Web Display Exception?

Clear the cache or switch browsers.

Receive broadcast, amplifier no sound output?

1. Check if the terminal is online;
2. Check whether the terminal volume of the server and the output volume of the web page broadcast are 0, and if so, increase the volume.

Local I / O no sound?

1. check whether mic and aux volume adjustment knobs are adjusted to the maximum clockwise.
2. check whether the input volume is too low, and the active speaker connected is silent, and the local volume is increased;

No sound for local input/output?

Check whether mute silent depth adjustment knob is adjusted to the maximum clockwise. If not, increase the silent depth clockwise.

Local offline task not played?

1. enter the FTP of the device and check whether the audio file under the nas2007 directory is normal. The audio file must be in MP3 format, 128kbps;
2. check whether the equipment time is synchronized to the current time;

Occasional sound breaks?

1. Check whether the power output load is exceed over rated power or line short-circuit;
2. Check whether the audio input signal range oversize , can be appropriately reduced volume;

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