SPON

IP NETWORK DIGITAL AMPLIFIER

User Manual

IP NETWORK PUBLIC ADDRESS SYSTEM

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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.

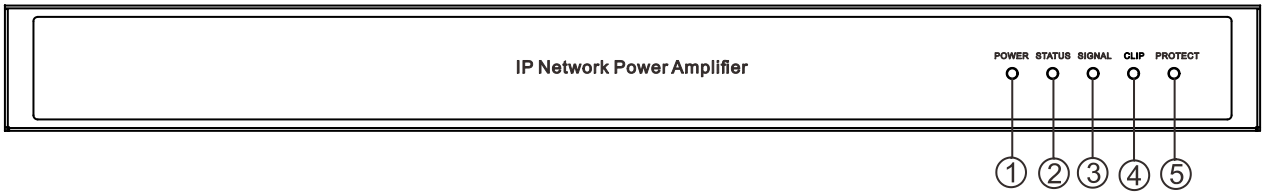
IP network digital power amplifier is a part of IP network PA system, controlled by the system software, which can realize local and remote background music broadcasting functions.

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.

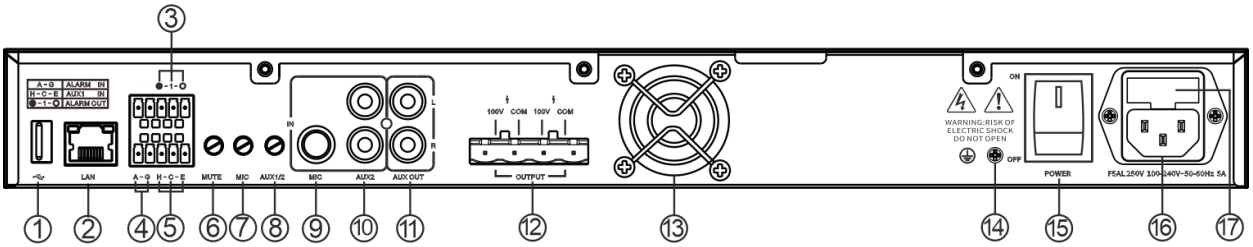
②STATUS: Bi-colored light, green light keeps on when the equipment is online, red light keeps flashing when the equipment is offline, greed light keeps flashing when receiving signals.

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.

③ALARM OUT：Alarm output interface(●-NC:Normally Closed；1-COM：COM；○-NO：Normally opened).

④ALARM IN：Alarm input interface (A：Alarm input；G：GND).

⑤AUX1：Line input1 interface(Balance input)（H:Hot end，C:Cold end，E:Earth end）.

⑥MUTE 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.

⑦MIC Knob：Adjust the MIC input volume, clockwise rotation will increase the volume, anticlockwise rotation will decrease the volume.

⑧AUX1/2 Knob：Adjust the Line input volume ,clockwise rotation will increase the volume, anticlockwise rotation will decrease the volume.

⑨MIC：Mic input interface (Note: this interface only supports active conference microphones, it doesn't support moving coil microphones).

⑩AUX2：Line input2 interface (Unbalance input).

⑪AUX OUT：Line output interface.

⑫Power Output Port：Default constant voltage 100V output,support to set as 70V output on webpage.

⑬Cooling Fan：When installing, ensure that the fan outlet is not blocked, and try to keep a distance of more than 10cm .

⑭Ground Terminal: To ensure the safety and reliability of the equipment, ground terminal must be connected to the earth.

⑮Power Switch: Control the on & off of the power.

⑯Power Input Interface

⑰Insurance Block

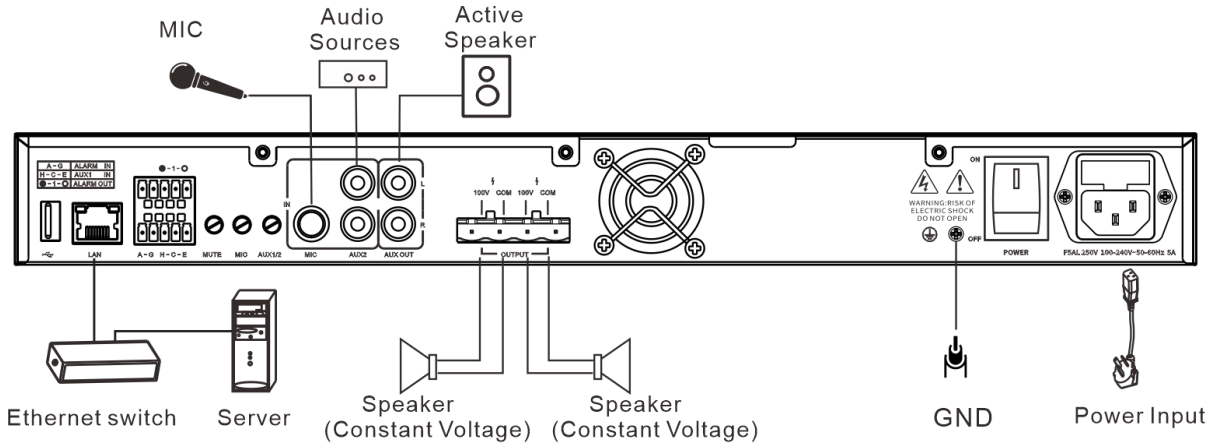
Introduction

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 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.

Through Web Interface

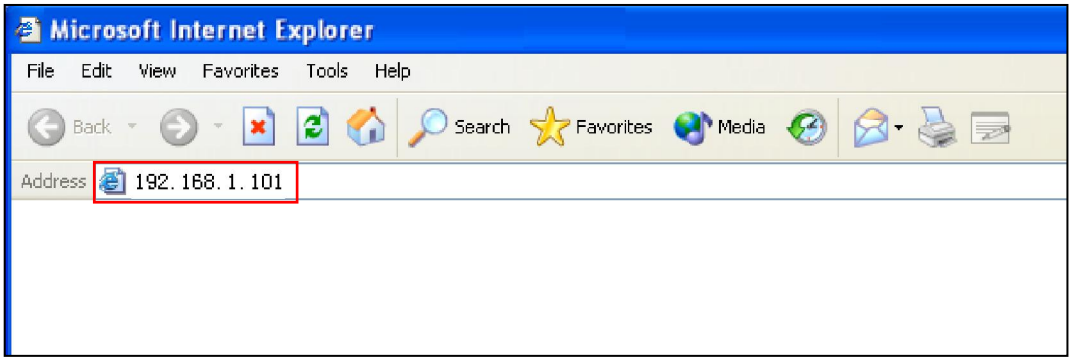
Enter into the Web interface of IP network digital power amplifier, then change the network parameters of the terminal according to the operational environment, after the setting, click “Save” button.

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 username and password to log in.

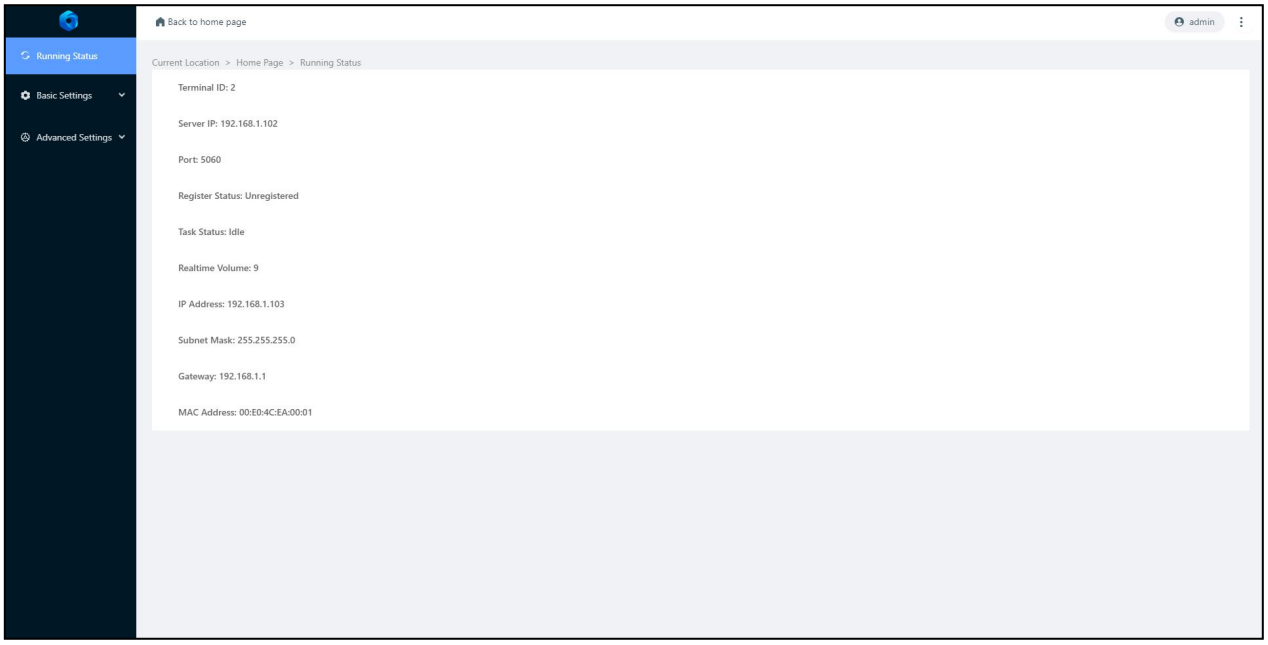
Note: Default username and password are both admin.

(3)Press login to enter IP Network Digital Amplifier 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.)

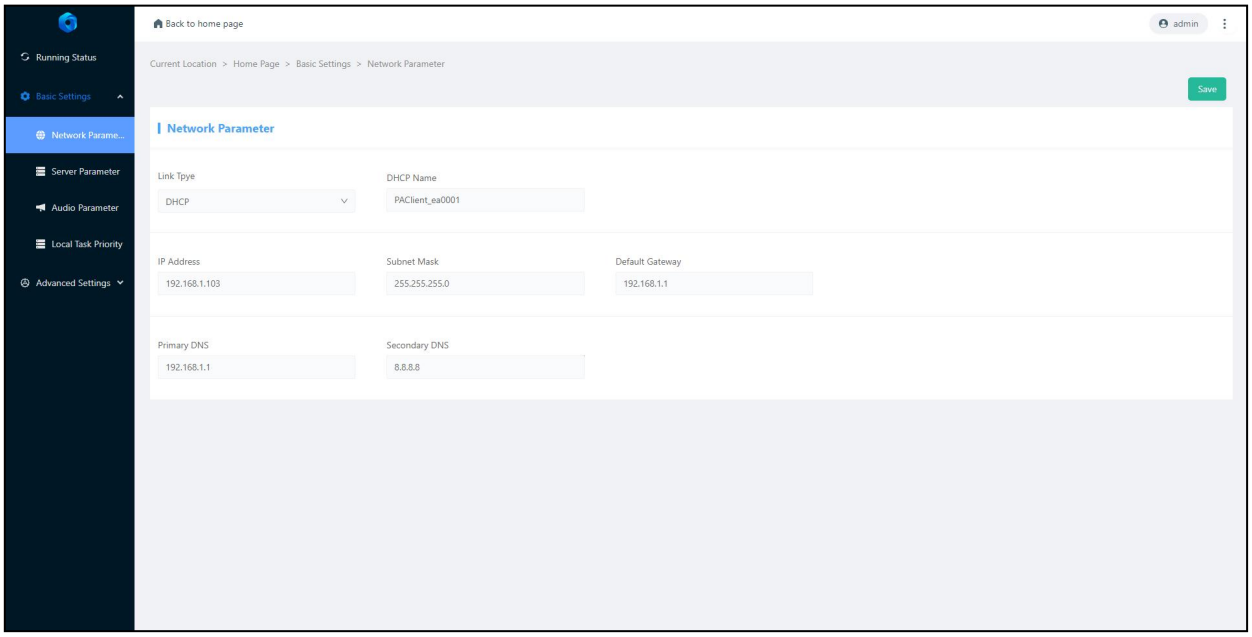
Running Status

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



Network Params

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



The relevant Settings of network parameters are as follows:

Link type	Supports static IP or DHCP IP address assignment. Static IP: Default static IP ,user-defined IP address and other information DHCP：Assign IP address via DHCP
DHCP Name	User can edit DHCP name and upload it to DHCP server.
IP Address	The IP address of the device, the factory default IP is 192.168.1.101, which cannot be duplicated with other terminals.

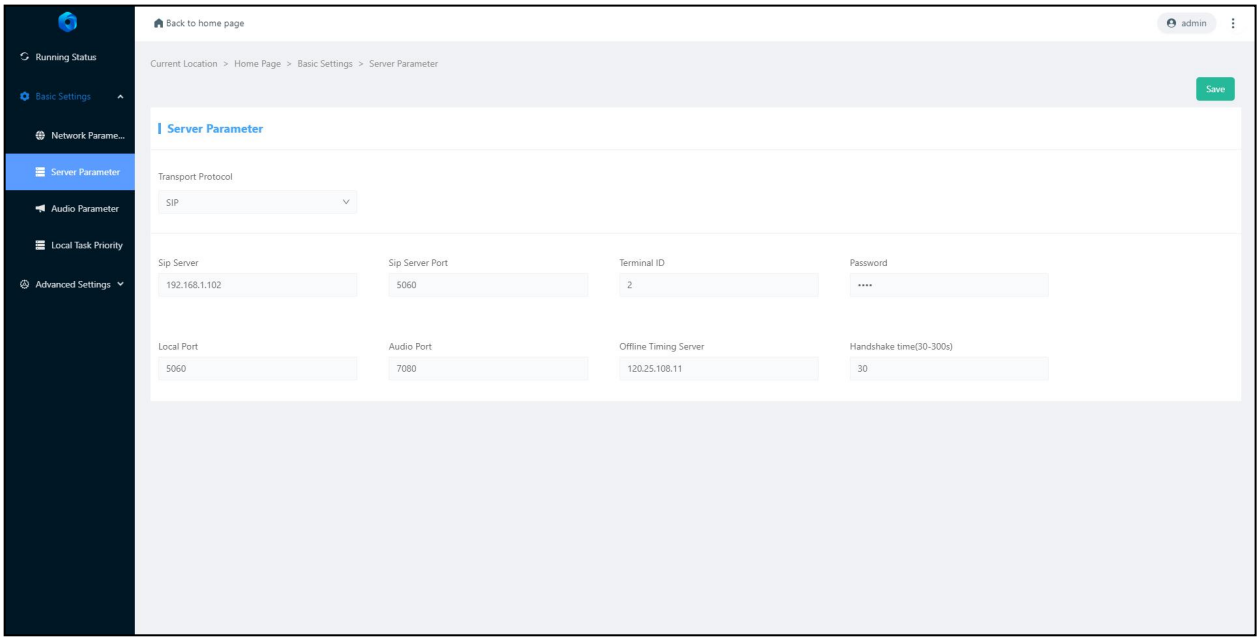
Subnet Mask	The subnet mask of the LAN network.
Default Gateway	The gateway of the network.
Primary DNS	The IP address of the preferred DNS server (domain name resolver) for the network.
Secondary DNS	The IP address of the alternate DNS server (domain name resolver) for the network.

Server Params

IP Network Digital Amplifier support with SIP protocol and NAS protocol, you can choose the transport protocol based on the actual server you log in to.

SIP Protocol

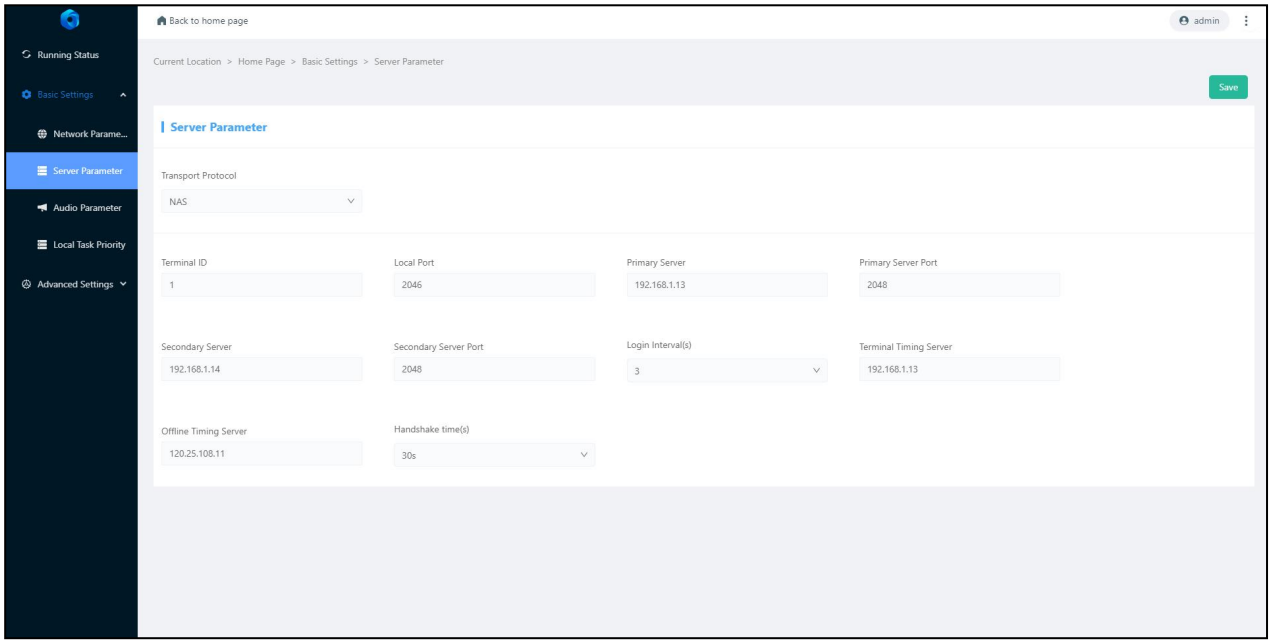
The default is SIP protocol. If the device is logged into the NAS (intercom) protocol server, you need to select the NAS protocol here, please refer to the NAS protocol setting introduction for specific parameter settings.



The relevant Settings are as follows:

Transport Protocol	Setting the protocol for normal communication between device and sever.
Sip Server IP, 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)
Terminal 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.
Local port	Configure the local port according to the actual situation; the default is 5060.
Audio port	Configure the audio port according to the actual situation.
Offline timing server	Set the IP of offline timing server, it works when the device is offline.
Handshake time(s)	Set the time to make handshake with server.

NAS Protocol

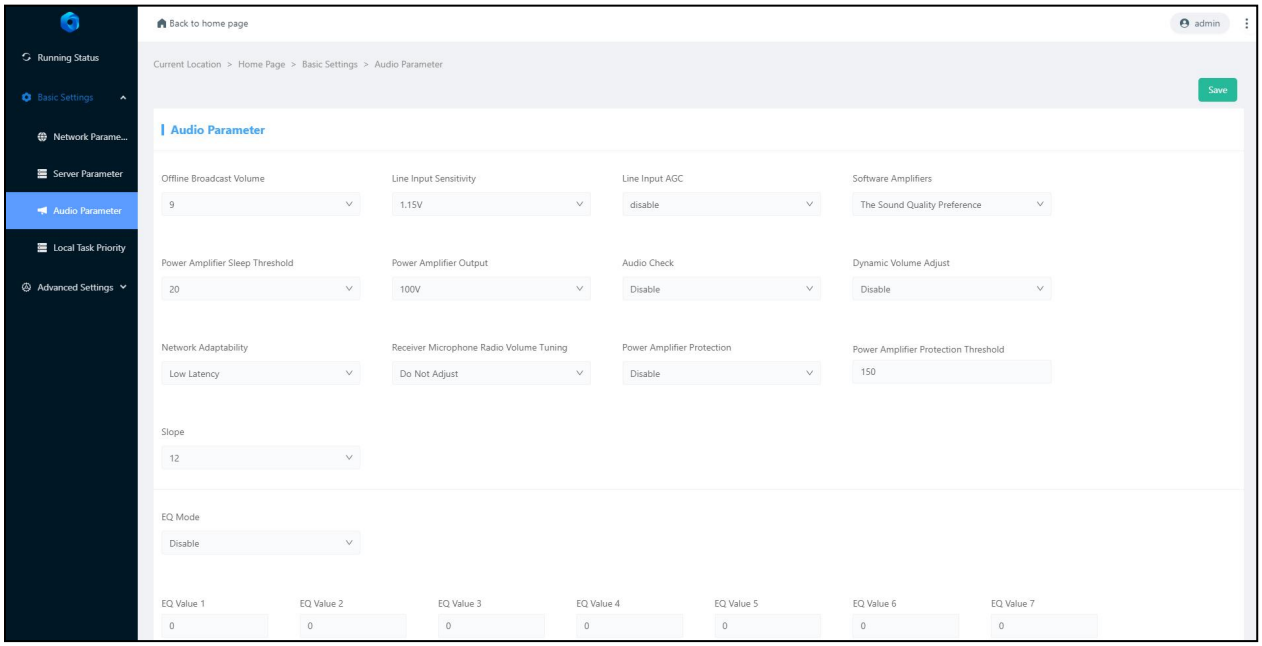


The relevant Settings are as follows:

Transport Protocol	Setting the protocol for normal communication between device and sever.
Terminal ID	Unique number to identify the terminal and cannot be duplicated with terminals or other hosts.
Local port	Configure the local port according to the actual situation; the default is 5060.
Primary 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).
Secondary Server IP, Port.	The IP address and port of the backup NAS server.
Login Interval(s)	Interval of login server.
Terminal Timing Server	Set the terminal timing address (the IP address of other IP Network Digital Amplifiers). The terminal will correct the time after the offline timing server fails to correct the time. it works when the device is offline.It Correct the time once about every 6 hours.
Offline Timing Server	Set the IP of offline timing server, it works when the device is offline.
Handshake time(s)	Set the time to make handshake with server.

Audio Params

Set the audio related parameters of the device, Click [save] after setting, the parameters will take effect after reboot.



The relevant Settings are as follows:

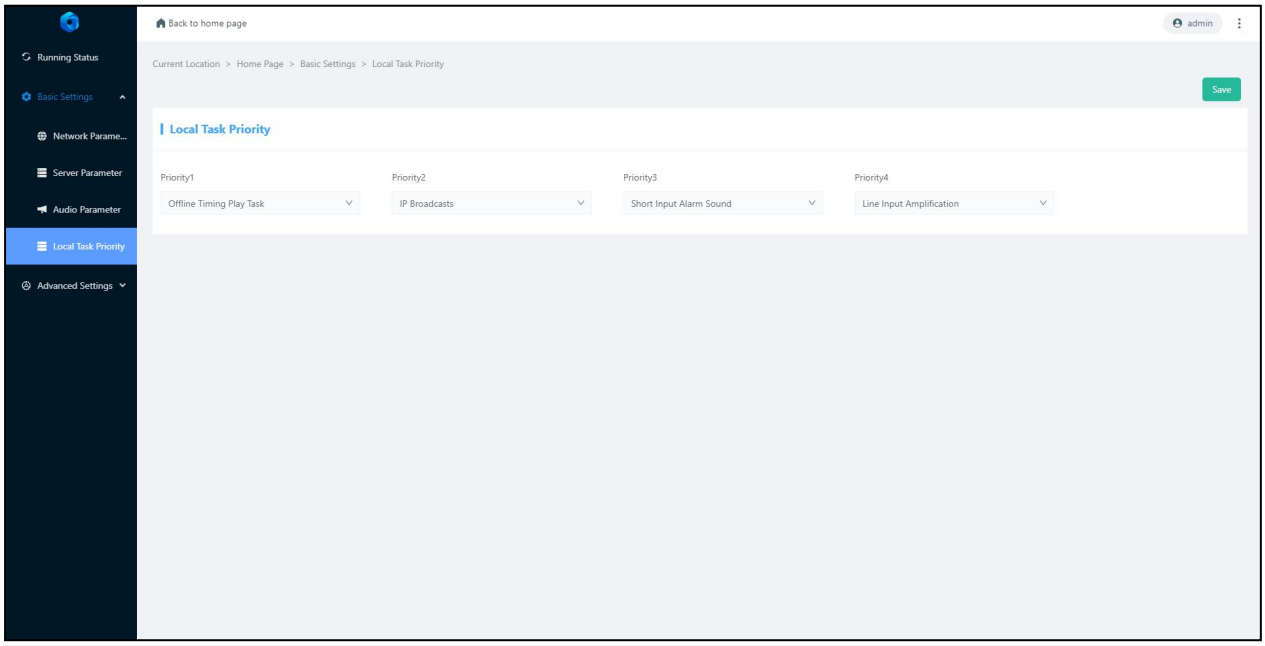
Offline Broadcast Volume	Set the Offline Broadcast Volume, configuration range from 0 to 15.
Line Input Sensitivity	Set line input sensitivity,the default is 1.15V.
Line Input ACC	Volume balance, low sound will compensate, high sound will suppress, the value set is the maximum value for compensation. Default is disabled.
Software Amplifiers	Configuring audio quality of digital audio source. The sound quality preference and Loudness is preferred can be chosen, and the default is the sound quality preference. It is recommended to choose loudness is preferred in the environment with high requirements for sound loudness.
Power amplifier Sleep Threshold	When the detected local line input or MIC input volume reaches the set threshold, the power amplifier will be turned on to achieve low power standby in different applications. The larger the threshold setting, the higher the sound requirement for turning on the power amplifier (The default is 20)
Power Amplifier Output	The default is constant voltage 100V output, and it is support to be set to constant voltage 70V output.
Audio Check	Audio check means loop detection function .After enabling the function, the device will play sound through built-in microphone after receiving server tasks. When there are problem like speaker unit fault or cable fault, the device will self-judge the problem and feedback to server.
Dynamic Volume Adjust	When you enable dynamic volume adjustment, the device will adjust the output volume during broadcasting according to the surrounding environment noise level. For example, when the average noise of the surrounding environment is greater than the reference noise and the range exceeds the set noise detection calibration value, the real-time volume level of equipment broadcasting will increase; When the average noise of the surrounding environment is less than the reference noise and the range of less than the set noise detection calibration value, the

	real-time volume level of the equipment broadcast will be reduced. Dynamic volume adjustment function is invalid when it is disabled.
Network Adaptability	Audio quality can be adjusted according to network environment. Low latency, low bandwidth, and custom are optional. You can customize the audio cache time when you choose Custom.
Receiver Microphone Radio Volume Tuning	The volume of the receiving microphone broadcast can be properly attenuated (1dB, 2dB, 3dB or 4dB) to avoid sound distortion due to excessive volume. The default is no adjustment.
Power Amplifier Protection,Power Amplifier Protection Threshold	Some speakers can't play low frequency sound. Continuous low frequency sound may cause speaker damage. Enabling the power amplifier protection threshold, it can filter out the low frequency sounds in the playback sound and protect the speaker from damage Loudspeaker . Power amplifier protection threshold: This value corresponds to the lowest audio frequency that the loudspeaker can accept.
Slape	For special speakers or special scenes, just keep the default value.
EQ Mode	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 should not adjust at will, otherwise it will lead to poor sound quality.**

Local Task Priority.

In this window, user can set up the priority of task.

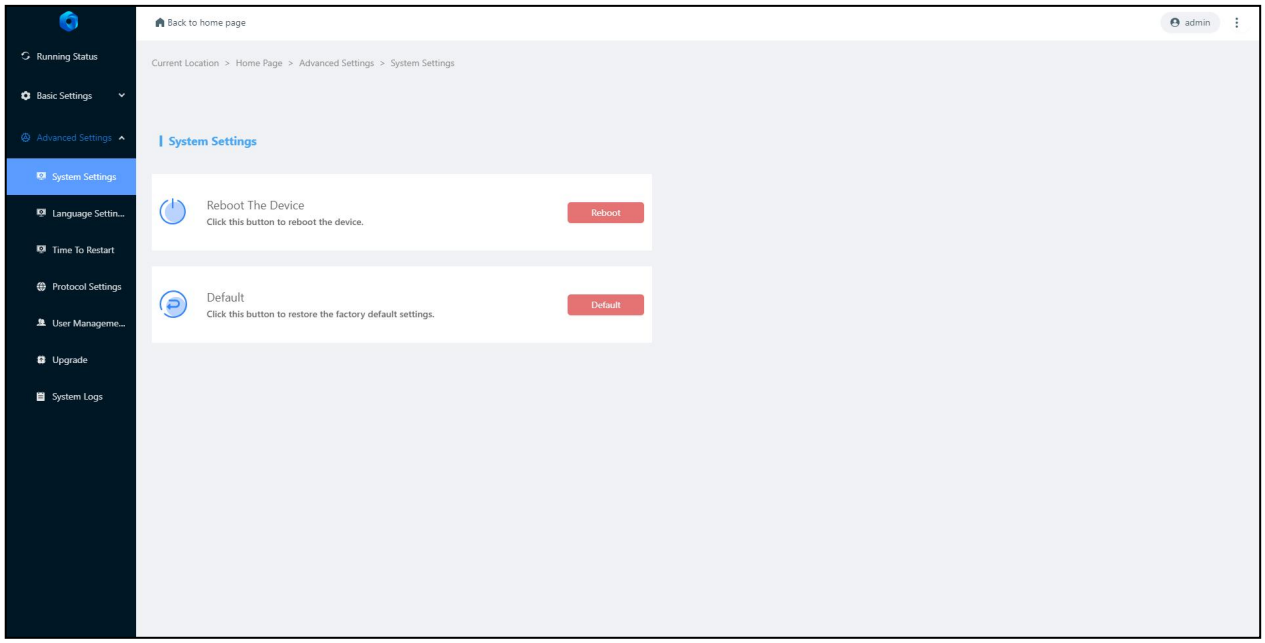
Default priority order :Offline timing play task>IP Broadcasts> Short input alarm sound> Line input amplification.



System Maintenance

Reboot: Click on this button will reboot the device.

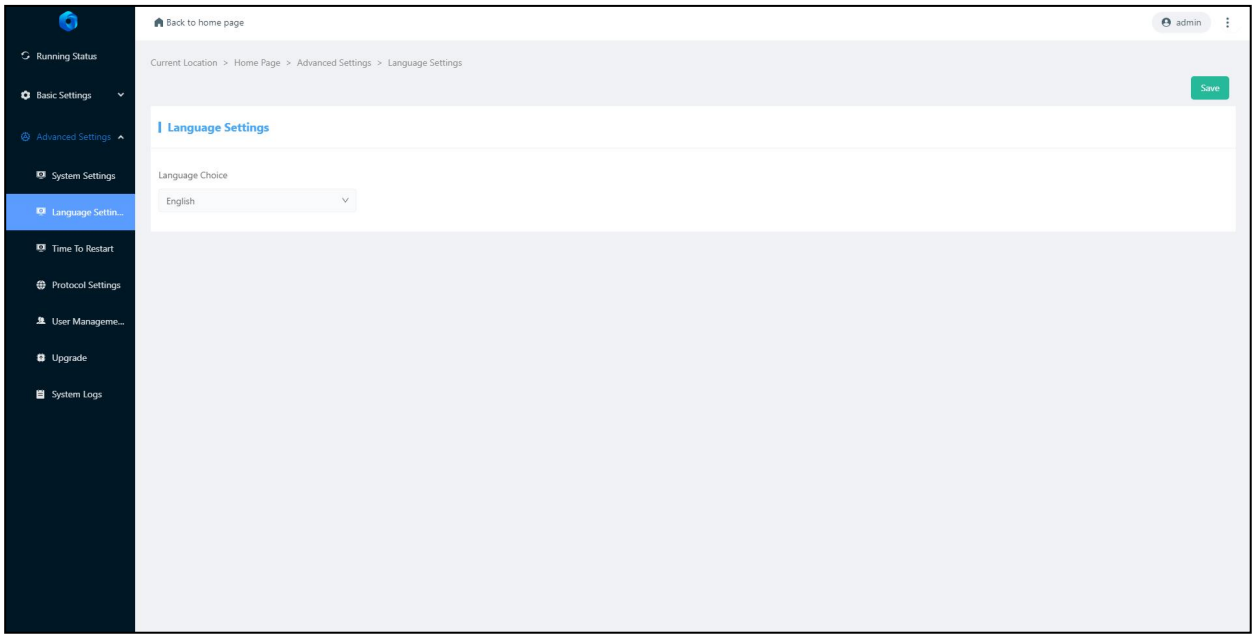
Default: Click this button and all parameters of the device will be restored to factory Settings (please use with caution)



Language Settings

You can change the language in this page. It supports Chinese and English.

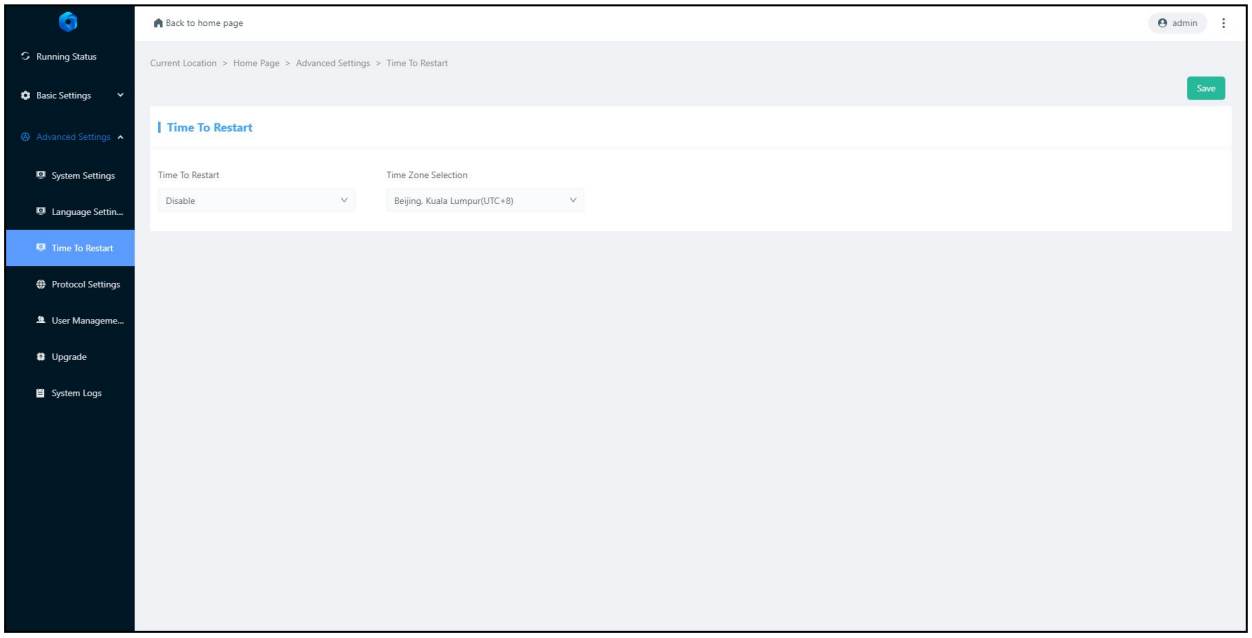
After save the setting, rebooting the web page to take effect.



Time To Restart

Time To Restart: After this function is enabled, you can set the time for restarting the device every day. The default value is disabled.

Time Zone Selection: Set the time zone of the device.

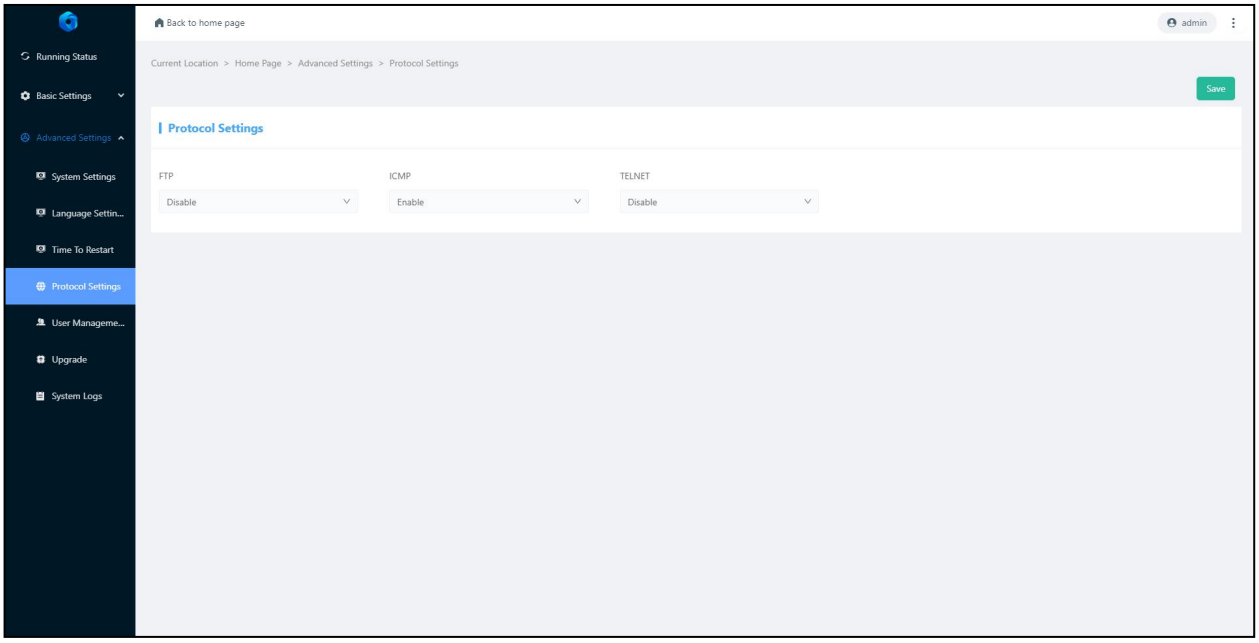


Protocol Settings

ICMP: You are advised to disable ICMP when using the new IP configuration tool to configure network parameters.

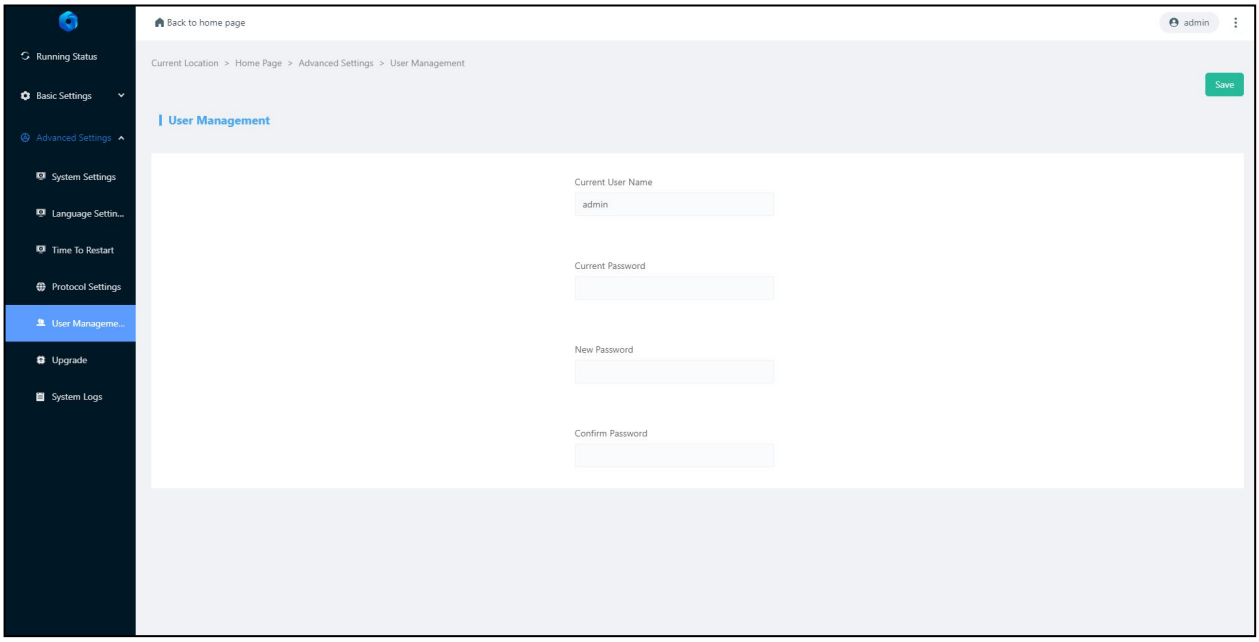
FTP: Set whether to enable FTP remote file transfer function. The default value is disable.

TELNET: Set whether to enable the TELNET remote login function. The default value is disable.



User Management

You can change the password for logging into the WEB in this page. After save the password change, rebooting the web page to take effect.



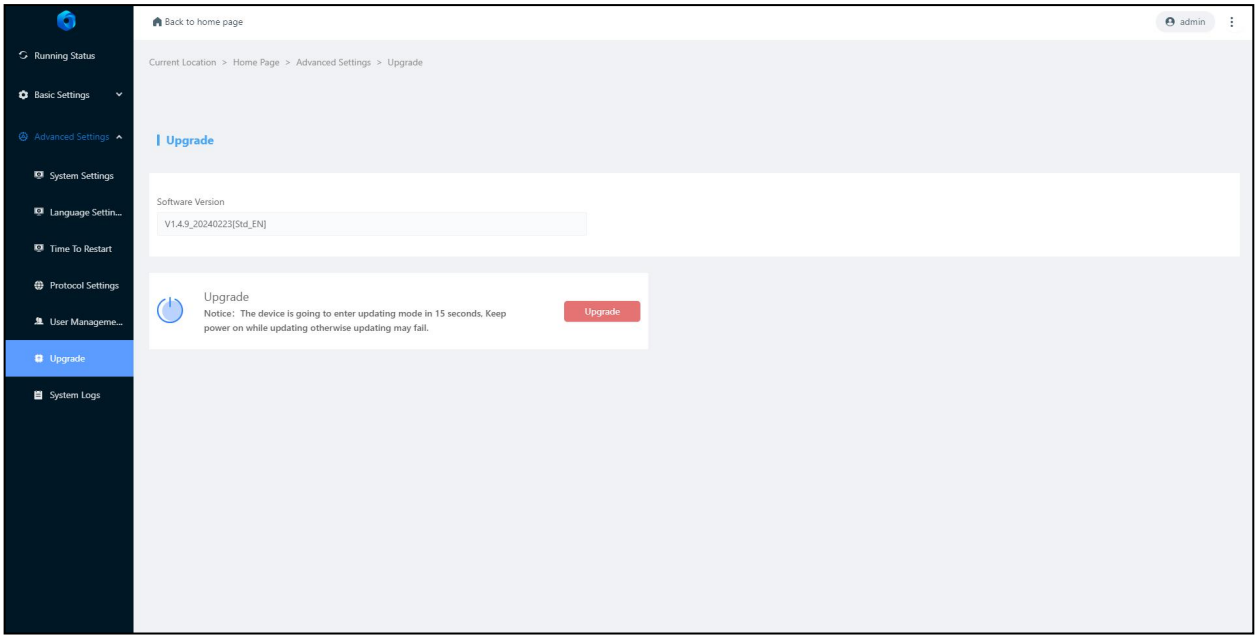
Upgrade

Click the "Upgrade" button, you will enter the firmware upgrade mode after 15 seconds.

Click on "Browser", select the upgrade file provided by the manufacturer, and click "Upgrade" to start the upgrade.

Note: Do not power off during the upgrade process, otherwise the upgrade may fail and the device fails.

Finally, click reboot and back to normal settings.



System Logs

IP Network Digital Amplifier can automatically record the running process and generate logs, and support users to download system logs.

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 "schedule 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” button in the lower left corner . When the device is offline, the specified task is performed.

Note: offline broadcast only supports MP3 format audio.

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.

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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