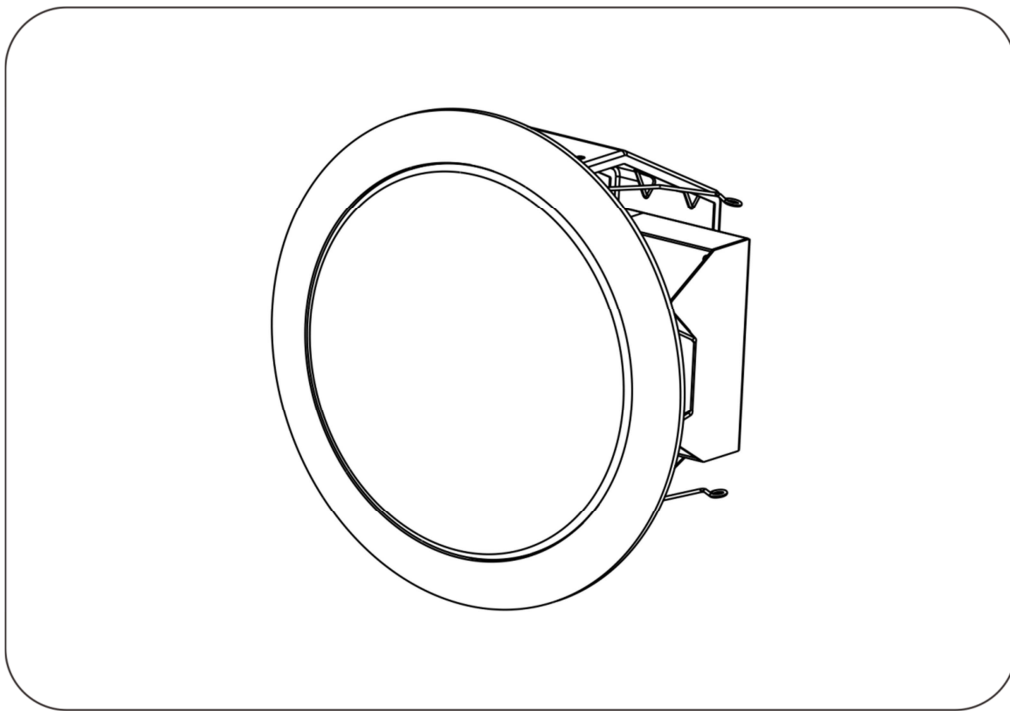




Operation Manual

IP PoE Ceiling Speaker

PC-PE1868IP1



Thank you for purchasing TOA IP-1000 series products.

Please carefully read the instructions in this manual to ensure long-term and fault-free operation of the equipment.

TOA Corporation

Chapter 1

Safety Precautions

Chapter 1 Safety Precautions

Please observe the warnings and safety instructions.

After reading this manual, please properly place it for easy access and reference in the future.

Warning



This sign indicates that potential safety hazards would occur if the equipment is opened for operation and serious injury or death would be caused to non-professionals who do not operate the equipment properly.



This sign is used to alert users that the information attached to the equipment includes important instructions of operation and maintenance (repair).

At setup and installation

(1) Preventing from water

Do not expose the equipment to rain or environment possibly contaminated by water or other liquids, or a fire or electric shock may be caused.

(2) Applying the specified supply voltage

Be sure to apply the voltage indicated on the equipment.

If a voltage higher than the indicated voltage is applied, a fire or electric shock may be caused.

(3) Protecting the power cord

Do not scratch, cut or twist the power cord.

In addition, the power cord should be away from heating bodies. Do not place heavy objects (including the equipment itself) on the power cord, or it may cause a fire or electric shock.

At operation

(1) In case of exceptions

Immediately cut off the power supply in case of the following exceptions during operation and contact the dealer. If it continues to be used, a fire or electric shock may occur.

- Smoke or smell.
- Water or foreign bodies intrusion.
- Fall or case damage.
- Power cord damage (core is exposed or cord is broken).
- Unable to access to network or free of sounds, etc.

(2) Do not open the equipment or transform it.

Do not drop foreign bodies into the equipment.

Do not drop foreign bodies like metal or flammable objects into the equipment, or a fire or electric shock may be caused.

(3) No touch at lightning

Do not touch the equipment and plugs at lightning to avoid electric shock.

(4) Do not place containers containing liquid or small metal objects above the equipment.

If a container is accidentally knocked over and the liquid flows into the equipment, a fire or electric shock may be caused.

- (5) Do not open the equipment or transform it.

High-voltage parts are installed in the equipment. If the equipment is uncovered or transformed, a fire or electric shock may be caused. All maintenance and internal transformation of the equipment should be performed by professionals.

- (6) Precautions when maintenance or not used for a long time

When maintenance is performed or the equipment is not used for 10 days or more, shut off the power and pull out the plug to ensure safety. If failing to observe this provision, a fire or electric shock would occur.

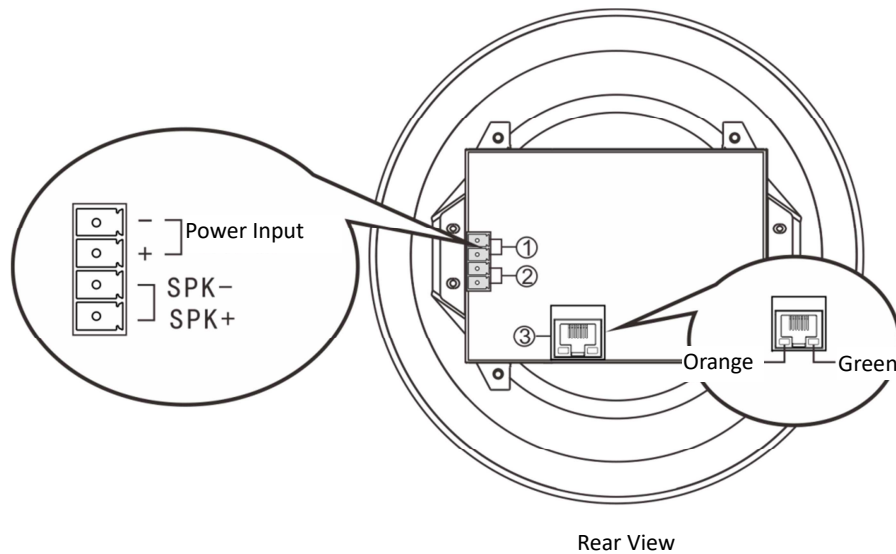
Chapter 2

Product Description

2.1 Overview

PC-PE1868IP1 is an IP PoE ceiling speaker and can receive the broadcast from other terminals or servers supporting the setting of functions through browser. It can detect circuit faults and operating state of the speaker and display them on the server software.

- (1) Receiving broadcast sounds
PC-PE1868IP1 can receive broadcast sounds from servers or other terminals.
- (2) Time program broadcasting
It can upload the sounds required to be broadcast at various periods each day to the server and prepare plans for broadcast. PC-PE1868IP1 can achieve automatic broadcast according to the tasks scheduled by the server.
- (3) System setup through browser
Users can set up network, audio parameters and modify login password of the speaker through browser to achieve personalized settings.
- (4) External Power Supply input
PC-PE1868IP1 can be powered via PoE or external DC24V power.
- (5) Audio check
PC-PE1868IP1 has a self-detection function and can detect the operating state of the speaker through circuit.
- (6) Indicator light of operating status
PC-PE1868IP1 is equipped with indicator lights of operating status and can quickly detect the operating state of the speaker by recognizing the color and flashing of indicator lights.



① **Power Input connector:** DC24V/1A is required, power supply input for network wall speaker. (Note: This equipment supports POE power supply. If the network interface is connected to POE switch, no power supply is needed)

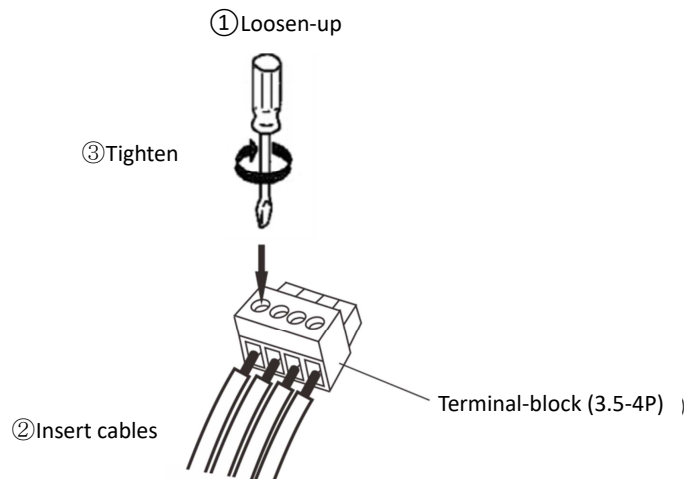
"+" indicates the positive pole of DC24V, and "-" indicates the negative pole of DC24V power supply.

② **Speaker Output connector:** Extended speaker can be attached. When the network wall speaker receives the broadcast, the same broadcast sound can be heard from the extended speaker.

③ **Network connector:** The connector is RJ-45 standard, insert the network cable to connect the switch, so that the equipment can login to the server normally. The network interface is equipped with two-color (green, orange) indicator light, which can indicate the working status of the network wall-mounted loudspeaker. (Note: This equipment supports POE power supply. If the network interface is connected to POE switch, no power supply is needed)

Operating state	Indicator light
Power-on	The Orange light is ON.
Network connection successful	The Green light is ON.
Receiving broadcast	The green light is flashing.

Note: The Power Supply Input and Extended Speaker output interface are connected through 3.5-4P terminal-block. The wiring steps are as follows:



Chapter 3

Wiring

Chapter 3 Wiring

3.1. Installation instructions

Required accessories

The required parts are attached as accessories.

Step 1. Open a hole with a diameter of 150 mm in the suitable position of the ceiling.

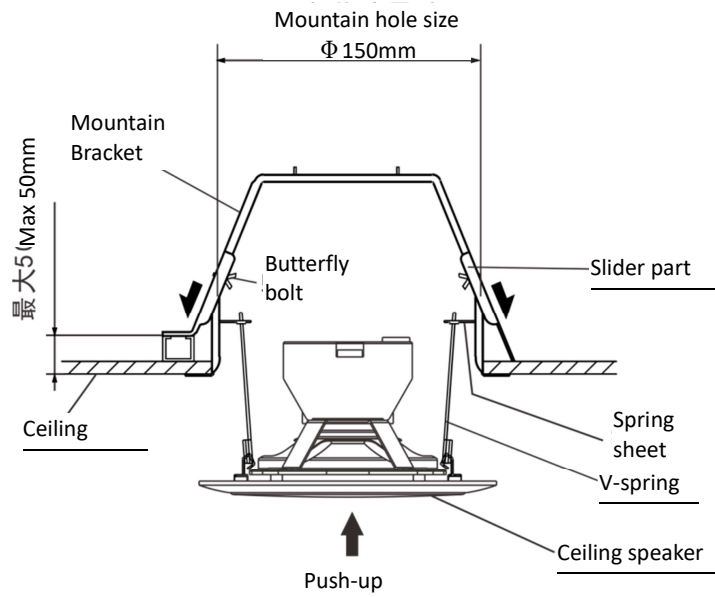
Step 2. Insert the mounting bracket into the mounting hole.

Step 3. Loosen the butterfly bolt on the speaker mounting bracket and move the slider in the direction indicated by the arrow.

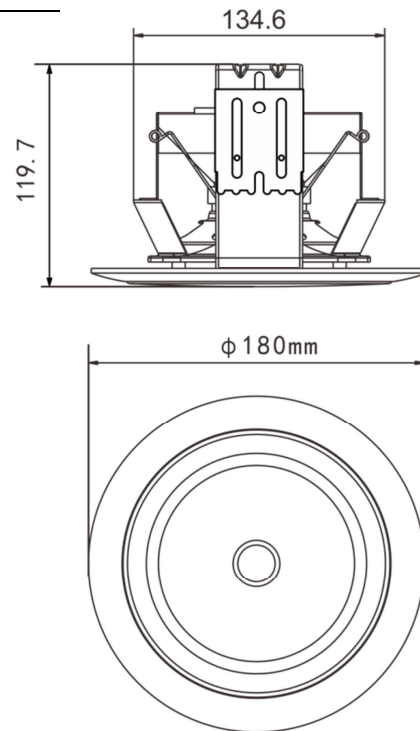
Step 4. Hold the ceiling with mounting bracket and sliding bracket, then tighten the butterfly bolt.

Note: When the ceiling is thicker, the frame can be bent to support a 50 mm thick ceiling.

Step 5. Squeeze the sides of the V-spring on the ceiling speaker, clip it to the spring seat on the mounting bracket, and then push the ceiling speaker upward into the ceiling mounting hole.



【Unit: mm】



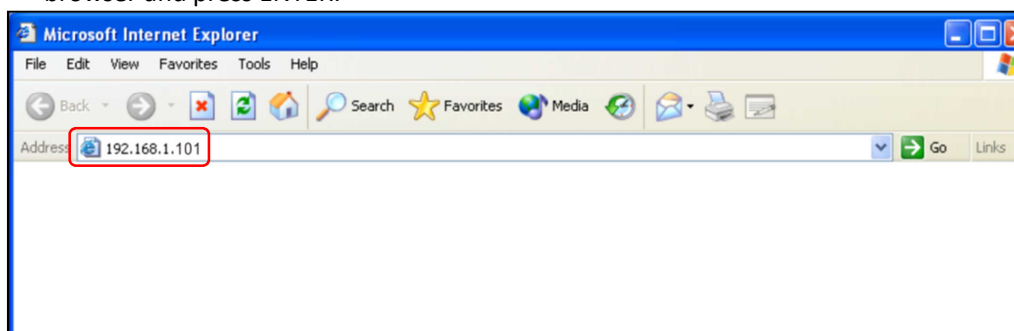
Chapter 4

System Setup Through Browser

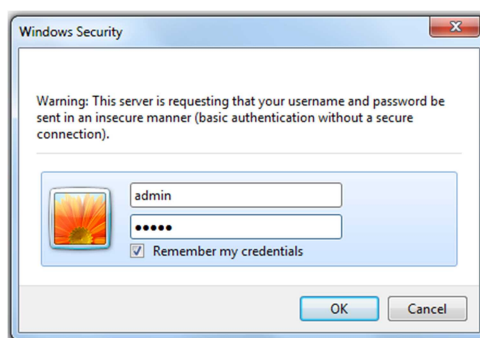
Chapter 4 System Setup Through Browser

4.1 Access to browser

Step 1 Enter the IP address of PC-PE1868IP1 (the default IP is 192.168.1.101) in the address field of IE browser and press ENTER.



Step 2 Enter user name and password (the defaults are admin) in the login window on the Web page.



Note: User name and password are case sensitive.

Step 3 Press the OK button and then enter the Web page of PC-PE1868IP1.

Network PA System

Menu

[Status](#)
[Net options](#)
[Server options](#)
[Sip options](#)
[Audio options](#)
[Password Setting](#)
[Language Setting](#)
[Update firmware](#)
[Factory reset](#)
[Reboot](#)
[System logs](#)

Network PA System

Terminal ID :	1
Terminal IP :	192.168.1.101
Subnet Mask :	255.255.255.0
Gateway :	192.168.1.1
MAC Address :	00:05:f9:ff:24:1b
Register Status :	Unregistered
Realtime noise :	50 dB
Average noise :	50 dB
Realtime volume :	9
System time :	1970-1-1 00:09:27

Chapter 4 System Setup Through Browser

4.2 Net options

Network PA System

Menu

[Status](#)
[Net options](#)
[Server options](#)
[Sip options](#)
[Audio options](#)
[Password Setting](#)
[Language Setting](#)
[Update firmware](#)
[Factory reset](#)
[Reboot](#)
[System logs](#)



Net options

Terminal IP :	192.168.1.101
Subnet Mask :	255.255.255.0
Gateway :	192.168.1.1
DNS1(Optional) :	
DNS2(Optional) :	

Save

Terminal IP	IP address of PC-PE1868IP1 (the default is 192.168.1.101)
Subnet mask	Used to set the subnet mask (the default is 255.255.255.0).
Default gateway	Used to set the gateway of PC-PE1868IP1 (the default is 192.168.1.1).
DNS1 (Optional)	Used to set the IP address of preferred DNS server of PC-PE1868IP1.
DNS2 (Optional)	Used to set the IP address of alternate DNS server of PC-PE1868IP1.

Chapter 4 System Setup Through Browser

4.3 Server Options

Network PA System

Menu

- [Status](#)
- [Net options](#)
- [Server options](#)
- [Sip options](#)
- [Audio options](#)
- [Password Setting](#)
- [Language Setting](#)
- [Update firmware](#)
- [Factory reset](#)
- [Reboot](#)
- [System logs](#)



Server options

Terminal ID :	1		
Local Port :	2046		
Primary Server :	192.168.1.13	:	2048
Secondary Server :	192.168.1.14	:	2048
Login Interval(s) :	3		

Save

Terminal ID	This must be a unique number in the same system, do not duplicate with any other terminals even for other models. The factory default ID number is 1.
Local Port	The default terminal port number is 2046. Do not modify it without special circumstances.
Primary Server	IP address of a primary broadcasting server, the default port is 2048.
Secondary Server	When the primary server is unable to connect, the terminal can login to the secondary server. After the primary server can be connected, the terminal login to the primary server again.
Login Interval (s)	Set the interval time in seconds that PC-PE1868IP1 requests to login to the server.

Chapter 4 System Setup Through Browser

4.4 SIP options

Network PA System

Menu

[Status](#)
[Net options](#)
[Server options](#)
[Sip options](#)
[Audio options](#)
[Password Setting](#)
[Language Setting](#)
[Update firmware](#)
[Factory reset](#)
[Reboot](#)
[System logs](#)



Sip options

Sip :	Enable	
Sip Server :	192.168.186.13	: 5060
Account :	1006	
Password :	****	
Local Port :	5060	
Audio port :	7080	
Multicast Contact :	Disable	
Multicast Address :	224.0.0.0	: 8060

Save

SIP	Select for this activation.
SIP Server	The SIP server address where the terminal is located, please fill in the IP address or domain name of the SIP server correctly. The port should not be modified, except in special cases (default is 5060).
Account	The SIP account of the terminal. This should not be duplicated with any other terminals. This account number has to be set in the SIP server side.
Password	The terminal login to a SIP server with this password. This password has to be matched to the password which is set in the SIP server side.
Local Port	Configure the local port according to the actual situation.
Audio Port	Configure the audio port according to the actual situation.
Multicast Contact	Select for this activation.
Multicast Address	In the case of multiple servers in LAN, different servers must use different addresses and port numbers for escaping any interference.

Chapter 4 System Setup Through Browser

4.5 Audio options

Network PA System

Menu

- Status
- Net options
- Server options
- Sip options
- Audio options**
- Password Setting
- Language Setting
- Update firmware
- Factory reset
- Reboot
- System logs

Audio options

Broadcast Volume :	9
Buffer time :	0
Audio check :	Disable
Dynamic volume adjust :	Disable
Noise detect adjust(dB) :	16
Noise Reference(dB) :	60
Noise detect interval(s) :	30

Save

Broadcast Volume	The total volume of the audio output of the terminal during broadcasting. The value is from 0 (smaller) to 15 (louder).
Buffer time	This is for stable broadcasting output adjustment. When this value is small, audio latency is small and it's better for a live paging however if the network is unstable, its audio would be so choppy. When this value is big, audio latency is longer and it's probably acceptable for a live paging in case that a speaker (who makes announcement) is in a different location and this situation is normal. And this big buffer makes its audio more stable.
Audio check	When the real-time noise of the terminal is less than or equal to the average noise, the server will display the fault information by bouncing window. Disabled for not enabling Audio check function;
Dynamic volume adjust	When dynamic volume adjustment is enabled, the terminal will adjust the output volume of broadcasting according to the noise level. When disabled, the dynamic volume adjustment function is invalid, and the "running status" page of the web page displays the real-time volume level.
Noise detect adjust (dB)	Setting the noise detection adjustment value (default is 16 dB), the larger the value, the larger the real-time noise value detected. Note: The noise detection adjustment value = the noise decibel value measured by the decibel meter when the calibration value is 0 - the average noise decibel value detected by the terminal.
Noise Reference(dB)	Normal environment, noise average decibel value, default to 60 dB
Noise detect interval (s)	Set the average noise detection interval time in second, default is 30sec.. The average noise varies according to the setting time.

Chapter 4 System Setup Through Browser

4.6 Password Setting

Users can modify login account and password in the web management parameters.

The screenshot displays the TOA web management interface. On the left is a sidebar with a 'Menu' section containing links: Status, Net options, Server options, Sip options, Audio options, Password Setting (highlighted), Language Setting, Update firmware, Factory reset, Reboot, and System logs. The main content area is titled 'Password Setting' and contains five input fields: 'Original username :' with the value 'admin', 'Original password :' with masked characters, 'New username :', 'New password :', and 'Password Confirm :'. Below these fields are 'Save' and 'Clear' buttons. The TOA logo is visible in the bottom left corner of the sidebar.

Original username	Confirm the current account name.
Original password	Confirm the current password.
New username	Set the new account name, even this isn't needed, this should be set.
New password	Set the new password.
Password Confirm	Confirm the new password.

Chapter 4 System Setup Through Browser

4.7 Language Setting

The language of the web page can be switched between Chinese and English.

The screenshot shows the TOA web interface with the 'PA System' tab selected. On the left is a 'Menu' sidebar with links: Status, Net options, Server options, Sip options, Audio options, Password Setting, Language Setting (highlighted), Update firmware, Factory reset, Reboot, and System logs. The main content area is titled 'Language Setting' and contains a 'Language :' label followed by a dropdown menu set to 'English'. Below this is a 'Save' button. The TOA logo is at the bottom left.

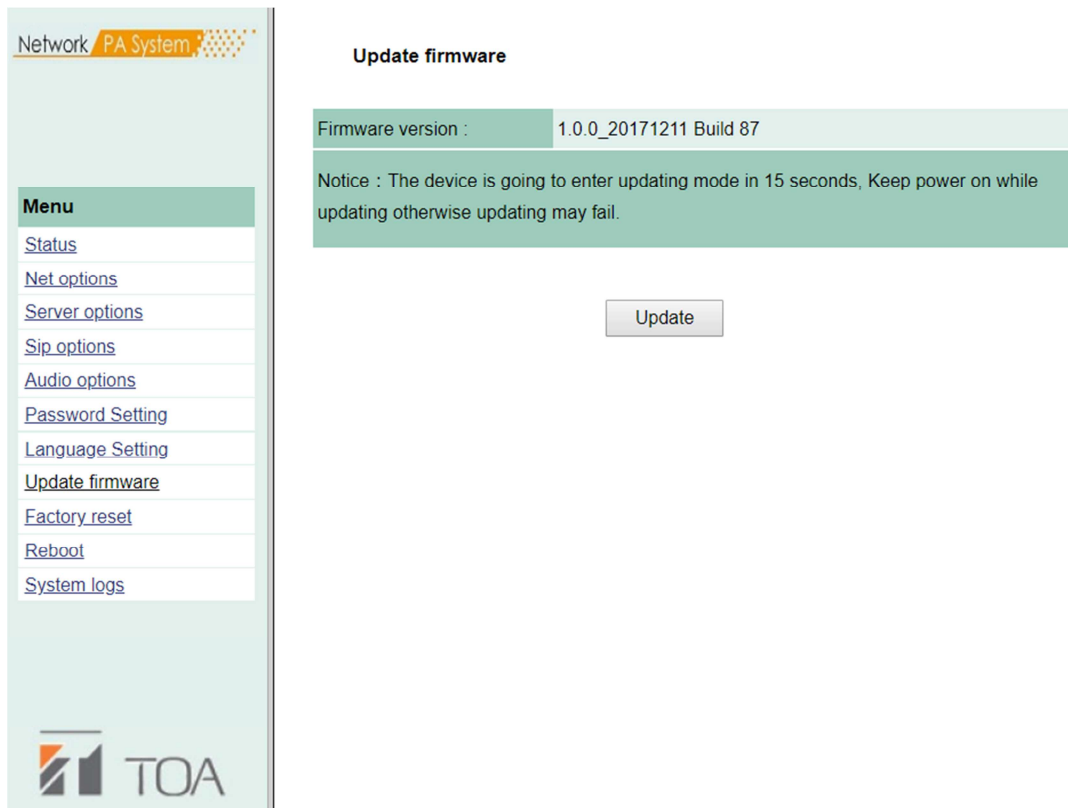
If the language setting is set to Chinese, the following is a position of “Language Setting”.

The screenshot shows the TOA web interface in Chinese. The 'PA System' tab is selected. The left sidebar, titled '菜单', contains links: 运行状态, 网络参数, 服务参数, Sip参数, 音频参数, 密码设置, 语言设置 (highlighted with a red box and an arrow pointing to the label 'Language Setting'), 升级固件, 恢复出厂设置, 重启设备, and 系统日志. The main content area is titled '语言设置' and contains a '语言 :' label followed by a dropdown menu set to '简体中文'. To the right of the dropdown is a red link that says 'Seletct from Chinese or English' (note the typo). Below this is a '保存' (Save) button.

Chapter 4 System Setup Through Browser

4.8 Update firmware

Press the "Update" button. Firmware upgrade mode will be entered in 15 seconds. Click "Browse", select the upgrade file provided by the manufacturer, and press "Update" to start firmware update.

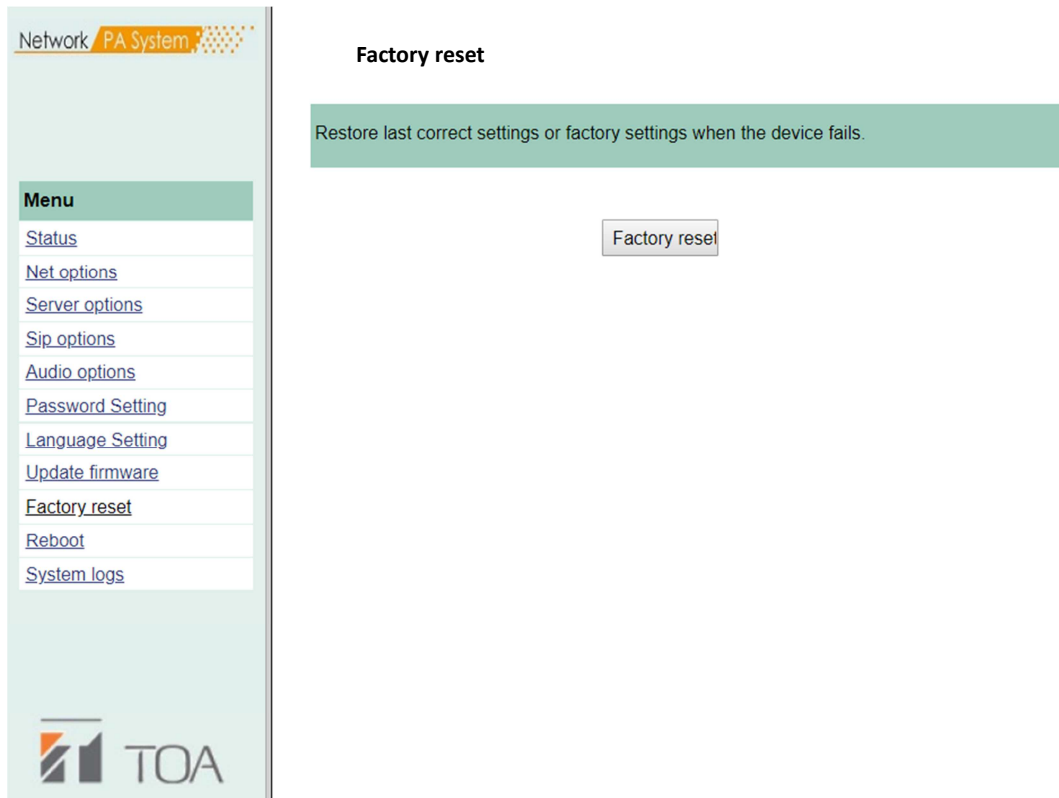


Note: Do not turn off the power during upgrading the terminal, otherwise it may lead to the failure of the upgrade and the failure of the equipment.

Chapter 4 System Setup Through Browser

4.9 Factory reset

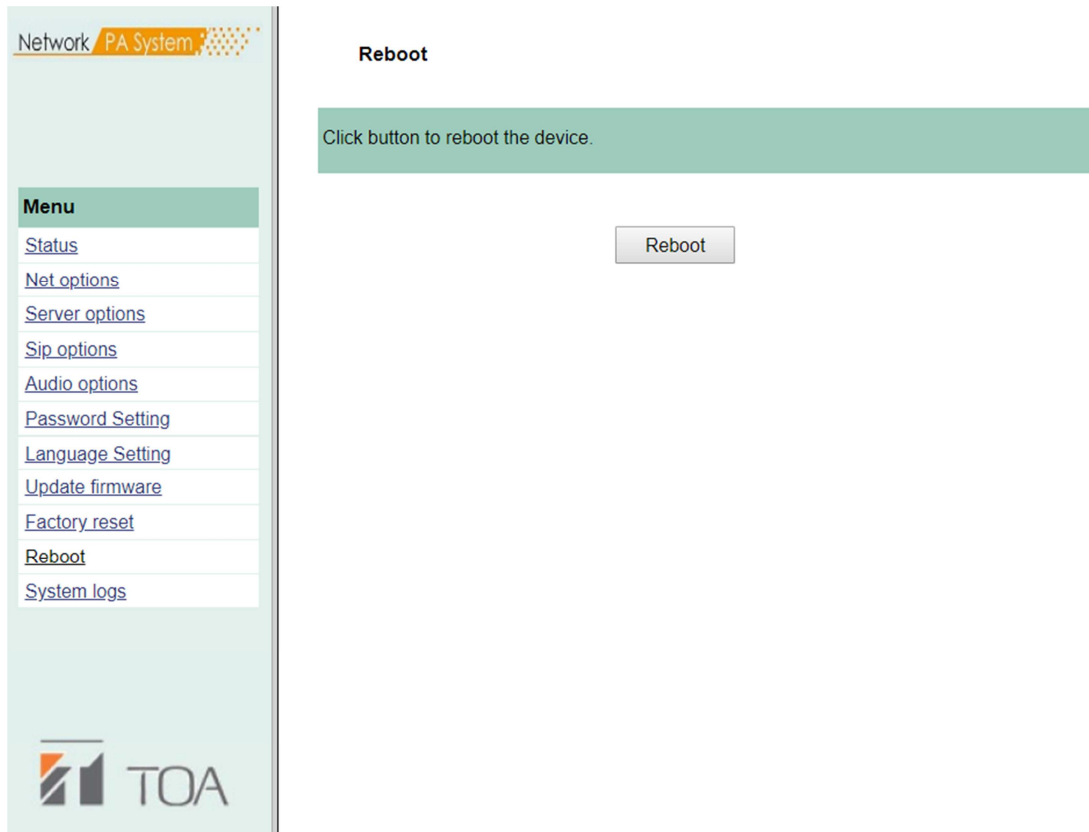
Restore factory settings: All parameters are restored to factory settings.



Chapter 4 System Setup Through Browser

4.10 Reboot

Users can click the menu "Reboot" to restart PC-PE1868IP1.



Chapter 4 System Setup Through Browser

4.11 System logs

In the web page, you can browse the log of PC-PE1868IP1, and click "Refresh" to reload the log content in the web page.

Network PA System

Menu

[Status](#)

[Net options](#)

[Server options](#)

[Sip options](#)

[Audio options](#)

[Password Setting](#)

[Language Setting](#)

[Update firmware](#)

[Factory reset](#)

[Reboot](#)

[System logs](#)

System logs

Index	Log content
1	Jan 1 01:15:30 Started successfully
2	Apr 8 10:44:34 Started successfully
3	Apr 8 10:44:39 Started successfully
4	Apr 8 10:45:44 Started successfully
5	Apr 8 10:45:47 Started successfully
6	Apr 8 10:46:15 Started successfully
7	Apr 8 10:46:35 Started successfully
8	Apr 8 10:46:35 Login sever 192.168.1.195:2048
9	Apr 8 10:47:02 Start MP3 broadcast, sample rate 44100
10	Apr 8 10:47:40 Broadcast end
11	Apr 8 10:47:55 Start MP3 broadcast, sample rate 44100
12	Apr 8 10:48:07 Broadcast end

1

Refresh



Chapter 5

Appendix

Chapter 5 Appendix

5. Specification

PC-PE1868IP1 IP PoE ceiling speaker

Model No.	PC-PE1868IP1
Speaker component	12cm cone speaker
Power supply	DC24V / 1A or PoE (IEEE 802.3at)
Stand-by Power consumption	Less than 5W
Rated Output Power (DC Power Supply)	2*7W (Maximum Consumption Current 24V/0.65A under DC Conditions) 2*7W (Maximum Consumption Current 16V/1.35A under PoE Conditions)
Rated Output Power (PoE Power Supply)	90dB 100-18,000Hz
Sensitivity (1m/1w)	10BASE-T/100BASE-TX with automatic determination
Frequency response	UDP,ARP,ICMP,HTTP,IGMP
Network I/F	-20°C~+50°C
Network protocol	Less than 90% RH (without dew point)
Operating temperature	Edge: ABS synthetic resin, white Grill: steel mesh, white (RAL9010 or equivalent color), painted
Operating humidity	φ180×119.7(D)mm
Finish	0.73kg
Dimensions	Mountain Bracket (1pce.), 4P terminal-block (1pce.)

