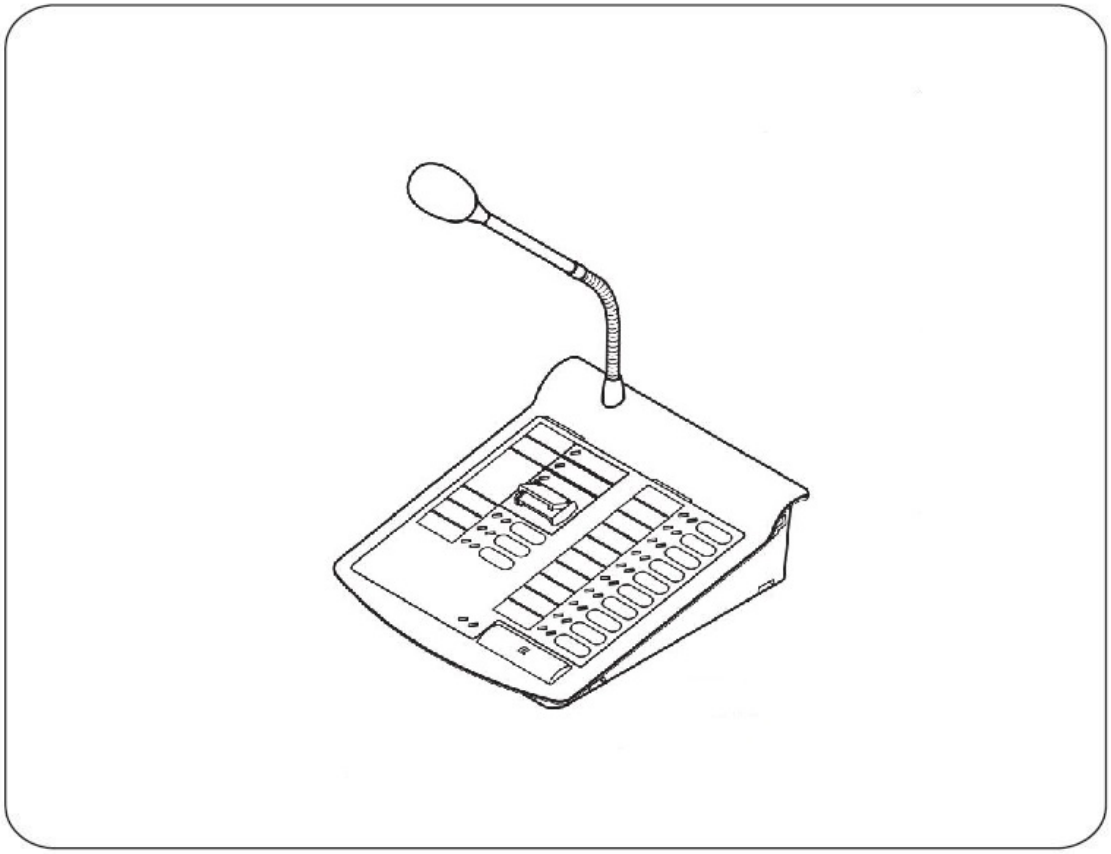
User’s manual

IP remote control microphone IP-100RM



Thanks for your purchase of TOA products IP-1000 series.

Please read the manual carefully to ensure the machine operating in long time and fault-free.

TOA Corporation

Chapter 1

Safety precaution

Chapter 1: safety precaution

Please abide by the warning and the relevant safety tips.

Please take this manual in convenient place after you reading the guide for future reference.

Warning

The sign means there is potential safety hazard, when operate wrong may result in death or serious injury.

The sign is used to remind the user that attached is the important operation and maintenance data.

（1）Avoid getting the equipment wet

Do not make the machine wet or exposed to rain water or other liquid contamination of the environment, or lead to fire or get an electric shock.

（2）Do not use unspecified voltage.

Using the marked voltage on the machine.

Using more than the logo of voltage could lead to fire or shock.

（3）Do not scratch the power cord.

Don’t scratch the power cord or cut it.

Simultaneously, keep the power line far way from heated objects, put heavy things on it will lead to fires or electric shock.

Using machine

（1）In case of the anomalies

Please turn off the power supply immediately when finding the abnormal phenomena, please connect with the agency. If you continue to use, it is likely to catch fires or resulted in electric shock.

·The smoke or smell of the machine.

·The inside of the machine is flooded by water or external intrusion.

·Machine falling or machine case damage.

·The power cord damage (wire core is exposed of broken, etc)

·Fault (e.g no network connection, no sound etc.)

（2）Do not open the machine internal or modify the machine.

Do not let external substance getting into the equipment.

Please do not put any metallic or inflammable objects into the machine, otherwise it may cause fires or electric shock.

（3）Please do not touch it during thundering

To avoid electric shock, please do not touch the machine and the plug during lightning, etc.

（4）Please do not place containers with liquid or small metal objects on the machine above.

If containers drop, and liquid get into the machine that will likely catch fires or cause electric shock.

（5）Do not open the machine internal or modify the machine.

The machine internal contains high voltage parts, once open the cover or modify the machine, it may resykt in fires or cause shock. All the maintenance and other machine modification should be operated by professional personnel.

（6）Maintenance and the precautions for not using in a long time.

While maintenance, if the machine is not been used for 10 days or more, please turn off power supply switch for safety. If do not comply with this provision, it will likely cause electric shock or fires.

Chapter 2

products description

Chapter 2: products description

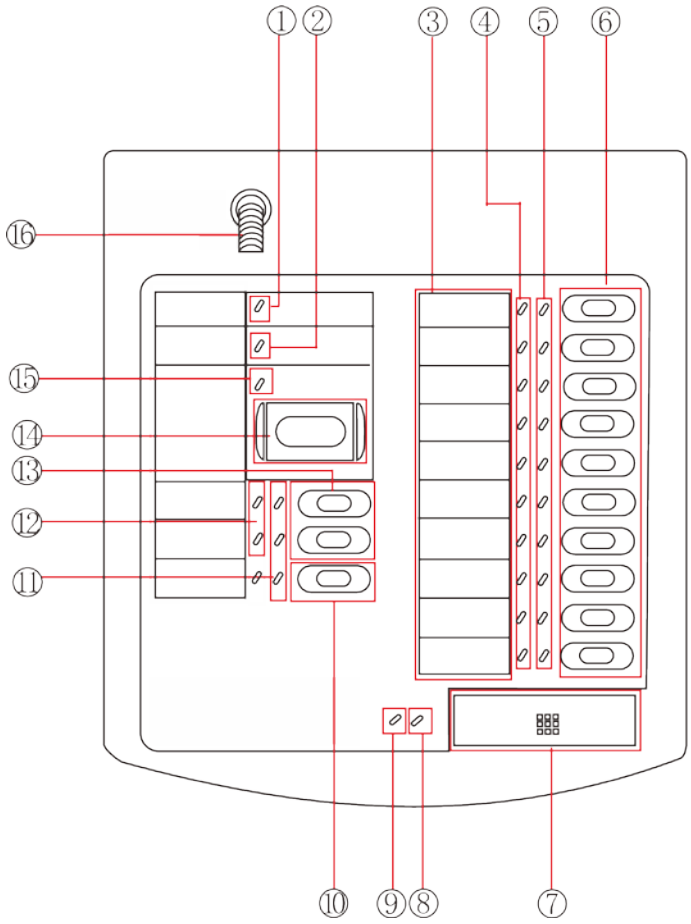
2.1 Summary

IP-100RM IP remote control microphone is an IP remote microphone, it is used for general and emergency broadcast. It can receive broadcasting from server or other devices, and it also can initiate one zone or all zones broadcast, every key has the corresponding working status indicator, you can quickly obtain the working status of every zone and server through the working status indicator.

- Audio broadcast
  IP remote control microphone send broadcast data via the sound source of external audio connection (connecting line input) or microphone pole. Every zone can receive and broadcasting audio in real time. IP remoter microphone can switch the sound source between line input and microphone pole.
- Receiving broadcast
  IP remote microphone can receive broadcast from server or other devices.
- Program Timer broadcasting
  Uploading sound source and programming broadcasting plan to the server, IP remote control can automatically broadcast planned tasks according to the server configuration.
- Recording
  All the broadcast contents can be automatically recorded and generated recording files by date, it can realize the recording file playback with recording tools.
- Working status indicator
  Every key of the IP remote control microphone has corresponding indicator, it can obtain the working status of each zone or key) via the color and flash of each indicator.
- System setting via browser
  Users can set the network parameters, customized function key, login password modification and etc via browse to be personalized configuration.
- Control input
  IP network remote control microphone has 1 line control input interface, which can receive control signal from external control input device. When the status of the external controlling input device is changed, it will trigger pre-set task.
- 9 IP remote microphone extension
  One extension unit can increase 10 of microphone's key number, the microphone can have 100 functional keys.
- Controlling the server to execute task
  When the functional key is programed for a task and the setting is uploaded to server, other devices in the system are synchronized simultaneously. Press the corresponding key can control the task executing and stopping (timing ringing, fire alarm, timing broadcasting) on server.

2.2.1 IP remote control microphone IP-100RM

Front view



① Power light: power input: green light is on, no power input: the light is off

② Trouble light: machine online, light is on, offline, orange light is off.

③ Name label: typing the name and function of designated zone. The zone is used for printed zone name and label inserting.

④ Status light: when the functional key defined as the zone key, the corresponding status light is orange during broadcast. Free status is off. Fire alarm broadcasting, the red light is on.

Note: when different keys are set for the same zone, the corresponding status light lights up if the zone is in use. (The color depends on by the broadcast type)

⑤ Zone light :1) when the key defined as the zone key, the zone is selected when pressed the key, the green light is on, it will be off when repress it (cancel the zone).

2) When the key defined as the task one, the green indicator light will be on when executing the task. When the task is stopped, the zone indicator light will be off.

⑥Functional key: users can define the functional key as the zone or task key.

Zone key: every key means one or more zones, press the key means the zone was selected, and the corresponding zone light is on.

Corresponding zone of the key can be customized configuration in Web page.

Note: **when different keys are set for the same zone, the corresponding status light lights up if the zone is in use.**

eg: key 1 setting as zone 1,2, key 2 setting as zone 2,3. When zone 2 in the broadcasting, key 1 and 2 corresponding light will will be on (orange one always on).

Task key: press the key to execute the corresponding task (timing ringing, timing broadcasting, fire alarm), the function will be realized only the server terminal binding.

When task in executing, the corresponding zone light of the task key will be on (green always on), the task will be stopped if repress the key, and the the corresponding light will be off.

⑦broadcast key: press the key, starting broadcasting. Repress, stopping broadcasting.

⑧Voice calling light: when initiate broadcasting, voice calling light will be on (orange) and it's brightness change with the volume of sound source, it will be off if no any voice.

⑨ Broadcast indicator: when pressing the broadcast key, the green light is on, repressing the broadcast key, the broadcast is stopped, the broadcast indicator is off.

⑩ The sound source switching key: press the key, you can switch the sound source between the line and microphone pole input, the defaults is microphone pole input. Press the key and switch to line input. When the sound source of the microphone is line input, the corresponding light will be on(green on always on).

⑪ Functional key indicator: the working status of the input sound source and volume key +/-.

⑫Volume status light: When the volume adjust to the maximum, the volume status light will be on (the red light always on), if press the volume reduce key, the volume status light will be off. When the volume adjust to the minimum, the corresponding light will be on (the red light always on), if increasing the volume, the corresponding light will be off.

⑬Volume +/- key: press the keys to adjust the volume in broadcasting. The corresponding functional key indicator is on (green) after pressed it, repress it will be on (green) again.

⑭Fire alarm key: press the key to select full zones (it can be with the broadcast key to initiate full zones broadcasting).

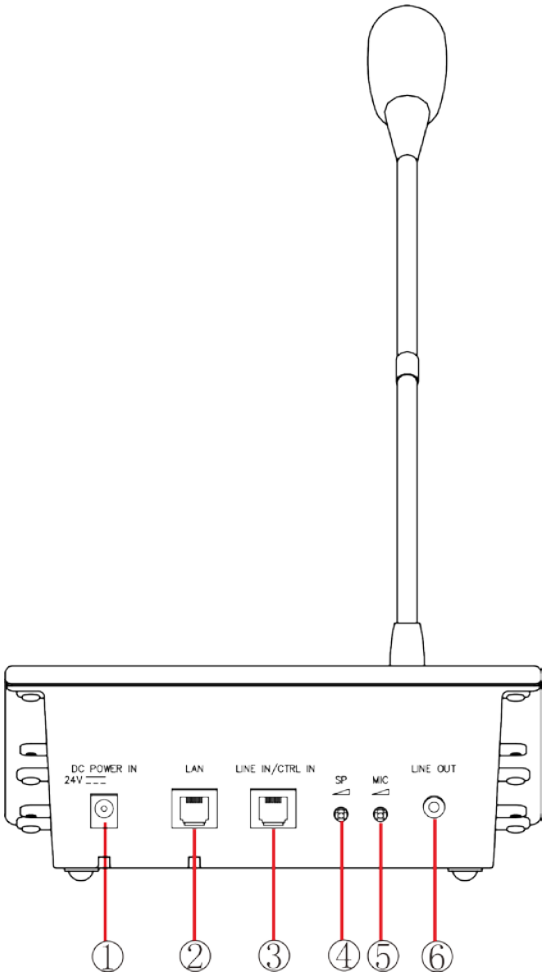
⑮Fire alarm indicator: it will be on (the red always on) only pressed the" fire alarm key", then repressed the key, the indicator will be off.

⑯Microphone pole interface: connecting with the pole and collecting the voice in site.

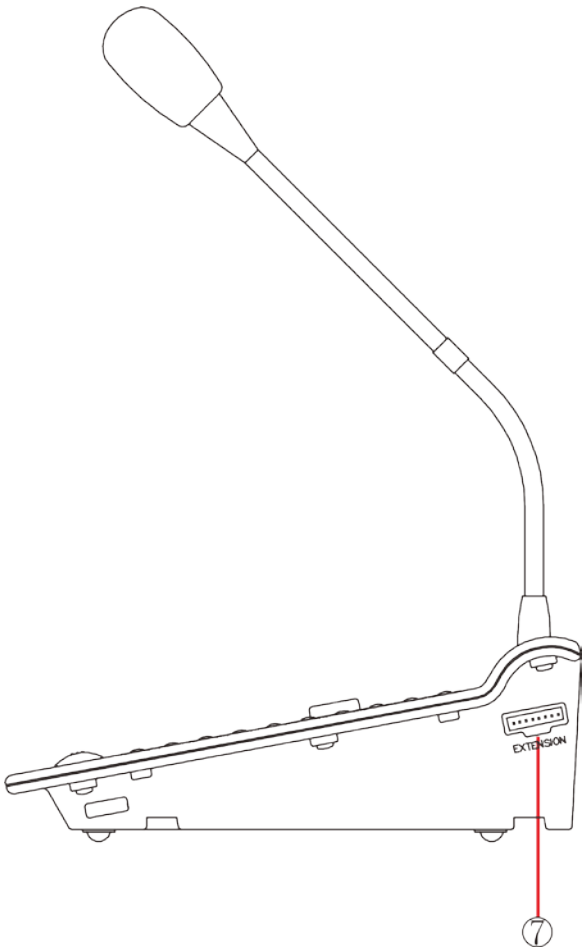
Chapter 2: products description

2.2 Product interface description

Rear view



Side view



①Power input interface: connect with DC24V/1A power adapter.

② LAN port: accessing cables, connect with the server.

③Input interface controlling & line input interface

Input interface controlling: receiving the switch volume signal from the external controlled device.

Line input interface: receiving the audio signal of other devices.

④SP VOL knob: it can adjust the SP MIC volume, it's only for MIC loudspeaker volume adjustment.

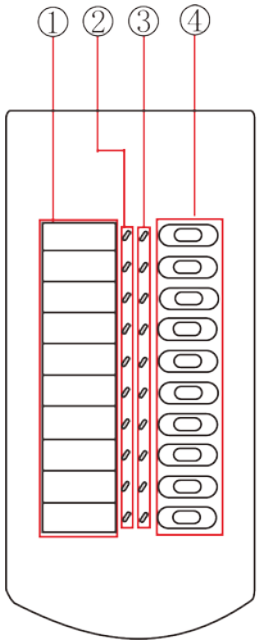
⑤ MIC VOL knob: input MIC volume.

⑥Audio output interface: when receiving the broadcast, if you insert the 3.5 mm headphones, the voi ce is outputted from the interface, the MIC speaker no any output.

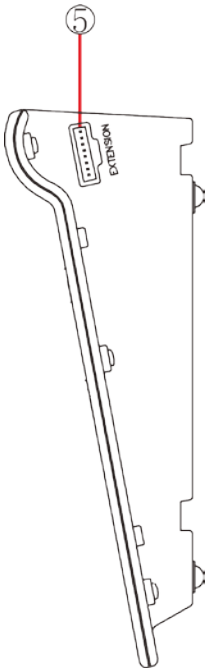
⑦Extension unit interface: external connection with MIC extension unit.

2.2.2 MIC Extension Unit RM-110

Front



Side



① The name label

② The status light

③ The zone light

④ The functional key

⑤ The extension unit interface

Every interface and function's definition, please refer to page P2-2and P2-4.

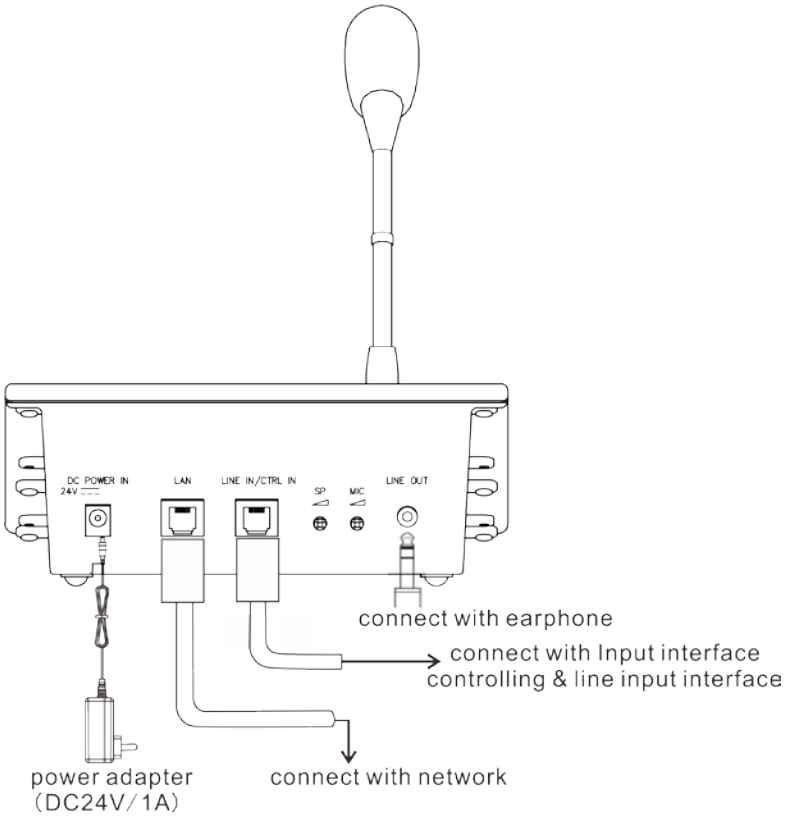
Chapter 3

Wiring

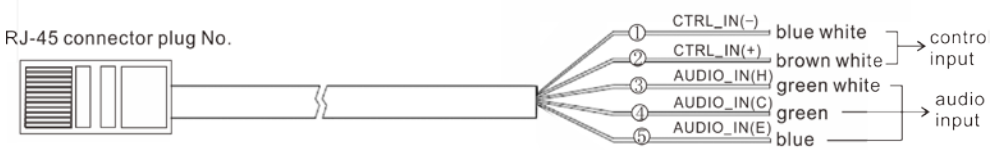
Chapter 3: wiring

3.1 MIC Wiring

3.1 IP-100RM Connection diagram



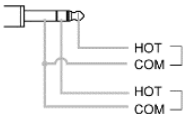
RJ - 45 connector pin assignment and meaning as follows:



NO.	Color	Line pair	Pin assignment	Description
①	blue white		CTRL_IN（-）	External control input（-）
②	brown white		CTRL_IN（+）	External control input(+)
③	green white		AUDIO_IN(H)	audio input signal（H）
④	blue		AUDIO_IN(C)	audio input signal（C）
⑤	blue		AUDIO_IN(E)	audio input signal（E）

Note:

1. Rated audio input (balance): 1Vrms (Max input 2Vrms), audio input impedance: 10KΩ
2. Control input: opto-isolator short circuit input, open circuit voltage DC5V, maximum short-circuit electricity≤5mA
3. Cable use 568B linear order, line order from left to right is orange and white, orange, green and white, blue, blue and white, green, brown and white. brown.
4. Earphone end connection:



3.2 MIC add extension unit

When the IP remote control microphone RM-110 add the extension unit RM-110, using the extension cable and bracket to make the connection.

[The requested hardware]

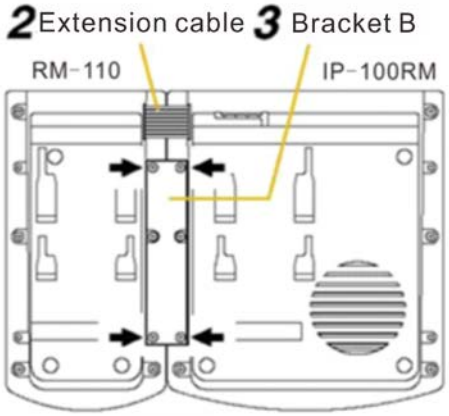
The RM-110 spare parts is included in the unit fittings.

Bracket A 2

Bracket B 1

Screw 12

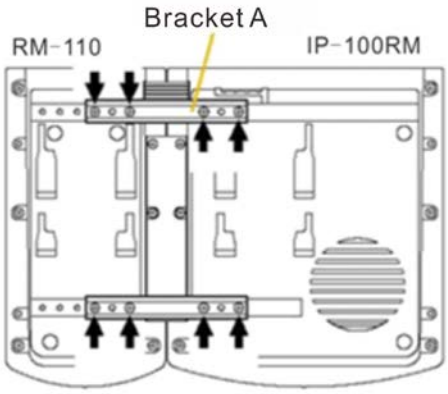
Step1: turning over the IP-100RM and RM-110, putting them together.



Step 2: connecting two units by extension cable

Step 3: using the 4 screws to connect the two units (marked ➡) and bracket B.

Step 4: using the 8 screws (remarked ➡) to connect the two units and 2 brackets A, make the two units tightly.



Note:

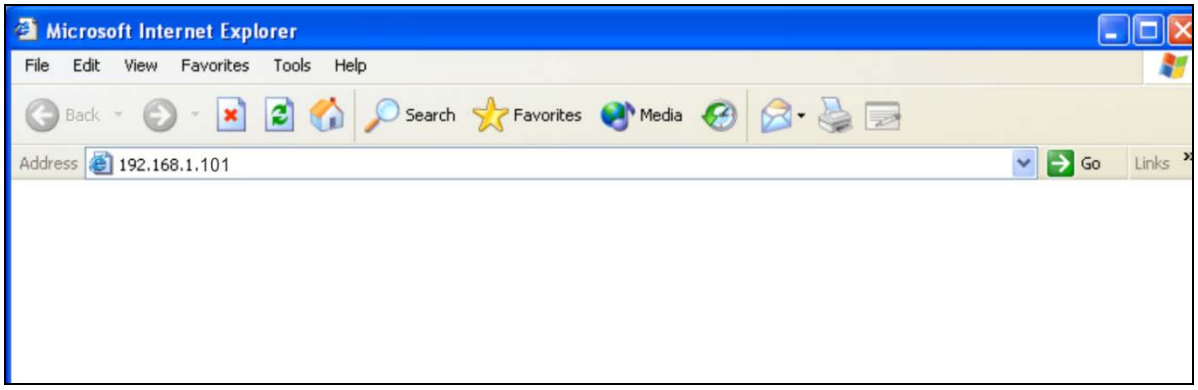
- Bracket A have two standby screw hole, if the appointed screw hole is damaged, thus use it to connect the two units.
- If you find incorrect or loose connection of the two units, screwing down all of screws, and taking part of the two units, then connecting them with the screw.

Chapter 4

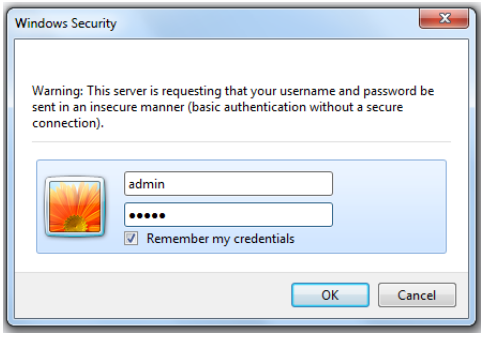
System setting by browser

4.1 Enter into browser

Step1: inputting MIC **IP address in** the IE browser (the defaults is 192.168.1.101), then press the Enter.

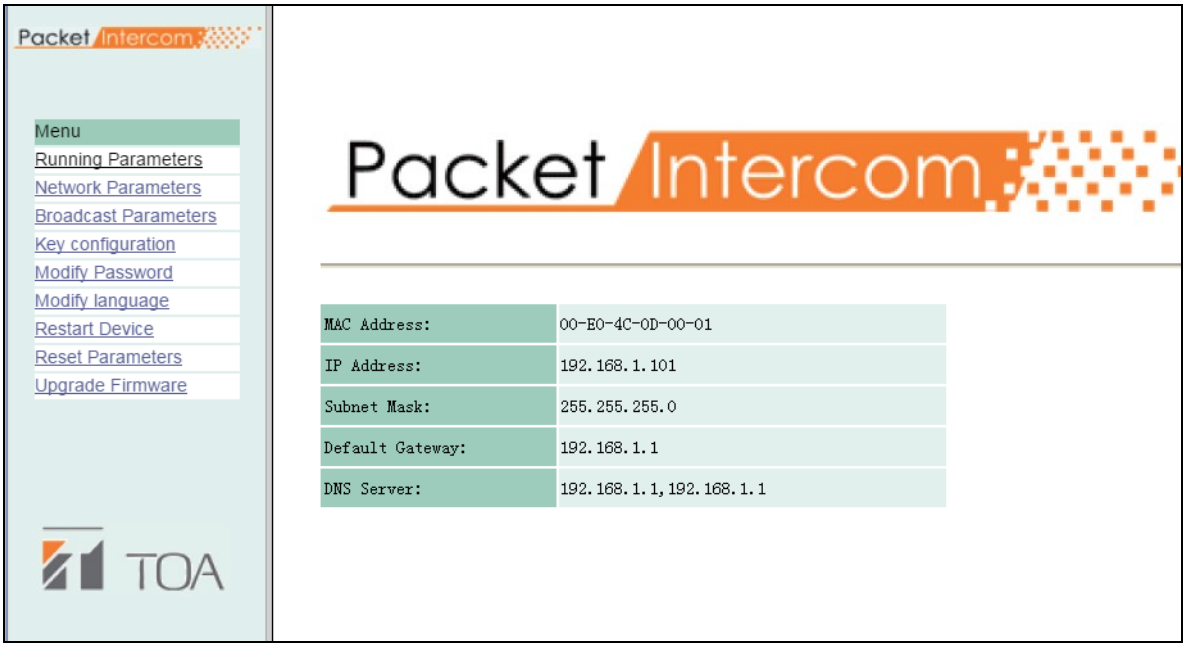


Step 2: inputting the user name and password in the login window of Web page(the defaults is admin)

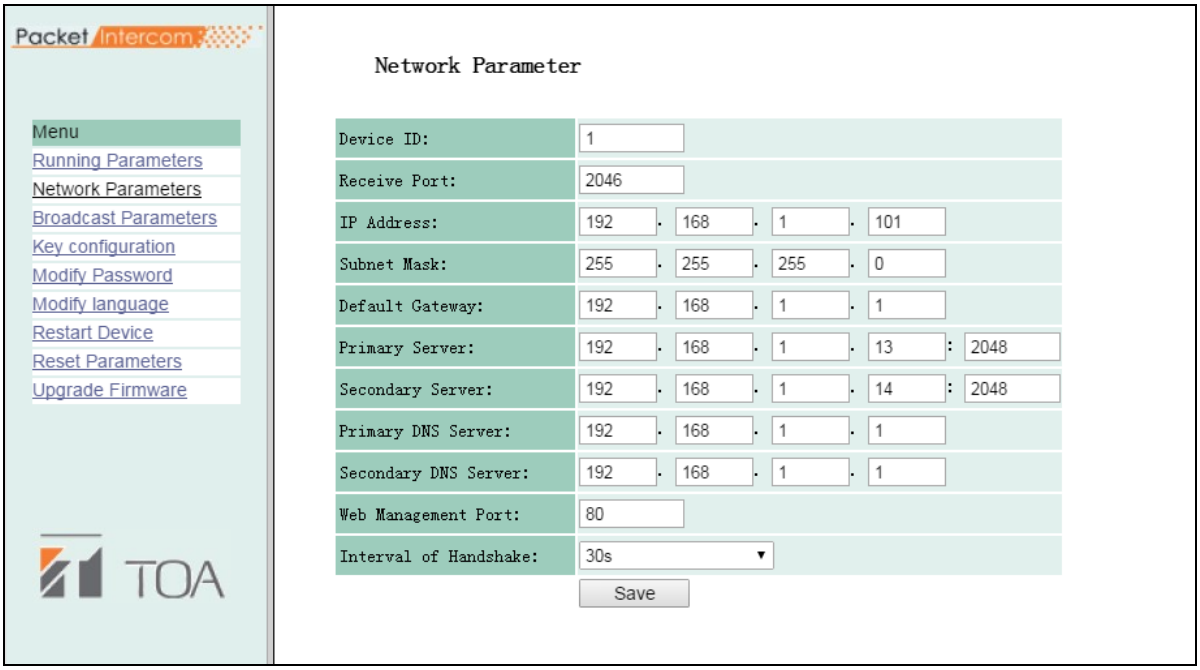


Note: the user name and password have upper and lowercase.

Step 3: clicking OK to enter into the Web page of the IP remote control microphone.

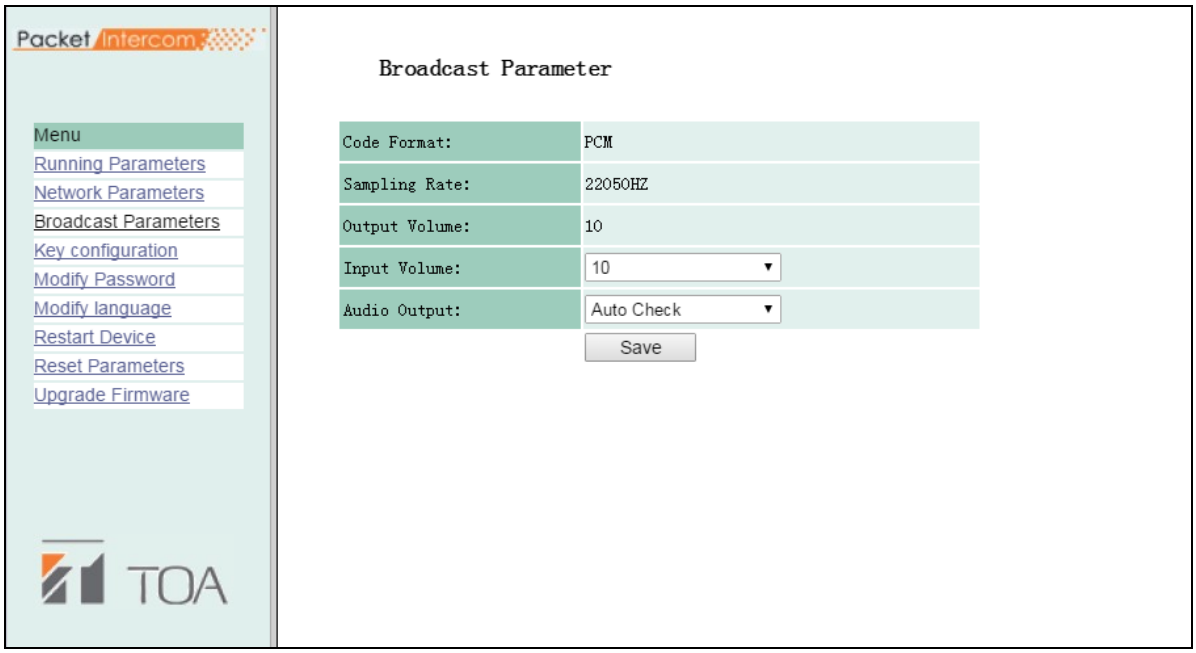


4.2 Network parameters



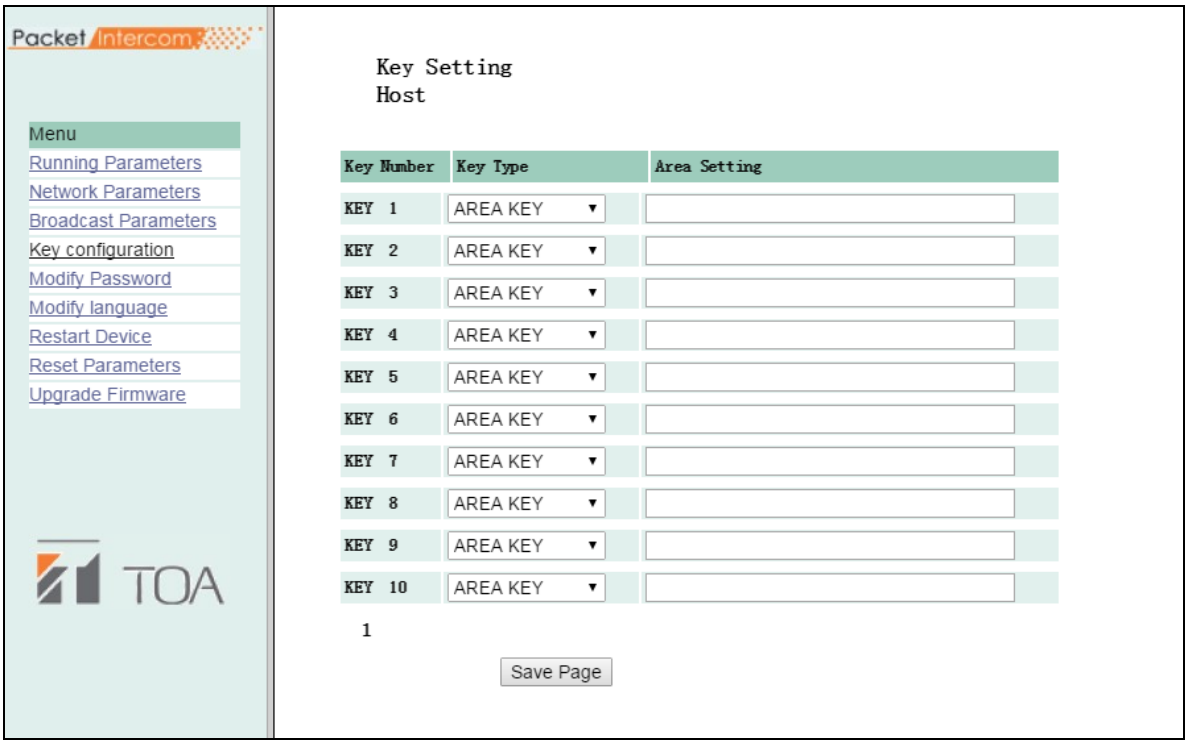
Device number	The unique MIC number, it can't be same with terminals and other hosts.
Receiving port	The defaults is 2046, please don't make any modification if not in special situation.
IP address	IP address of IP remote control microphone.
Subnet mask	Please setting the subnet mask (the factory defaults is 255.255.255.0)
Default gateway	The gateway of microphone(the factory defaults is 192.168.1.1)
Preferred server	IP address of preferred server (the factory defaults is 192.168.1.13).
Standby server	IP address of standby server
Primary DNS server	IP of the microphone in preferred DNS server
Secondary DNS server	IP of microphone in standby domain name server
Web management port	Inputting the port number of Web server, the range is 1-65535(the factory default is 80).
Handshake interval	Setting the handshake interval time between the MIC and server.

4.3 Broadcasting parameters



Input volume	The total volume of the microphone is 0~15 in broadcasting.
Output selection	MIC audio output way is loudspeaker, line output, automatic identification in broadcasting. Loudspeaker: voice output from the loudspeaker of the MIC; Line output: the sound output from the earphone of the MIC; Automatic identification: when the IP remote control microphone receiving the broadcast, broadcasting is output from the earphone, and microphone loudspeaker output without voice if insert the earphone;

4.4 Key configuration



Zone key: the key means zone (or area), the zone which is presented by key can be set in the “zone setting”. One key can present more than 10 zones (zone is not included in “non-zone” of the server). Zone number recognize the valid number within 3 digits, zones divide by comma.

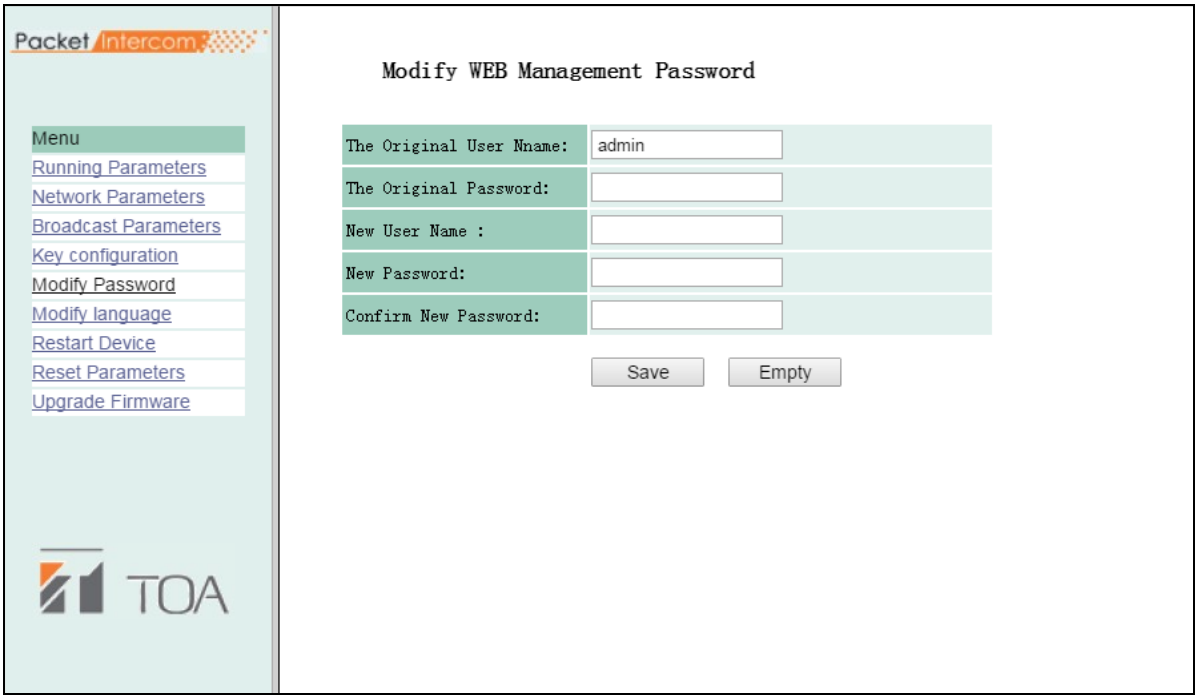
Task key: pressing the key to manually execute the related server tasks (timing ringing, timing broadcasting, fire alarm). The function can be realized if the server binding with the terminal (the specific settings, please refer to page P2-3), repress the key to stop the task.

Key values are defined as follows: the key of IP remote control microphone from left side is 1-10, the first extension unit key from top to bottom is 11-20,and so on.

Note:

- **If IP remote control microphone connect with the extension unit, if connect with N PCS extension units, there are N+1 pages of the key setting page.**
- **The first page of key configuration is IP remote control microphone key configuration page, the second page is the first extension unit (from the left to right)connection key configuration, and so on.**
- **Key configuration is valid for the current page, clicking “save the current page”, the device will automatically restart.**
- **One of IP remote control microphone can connect 9 extension units at maximum.**

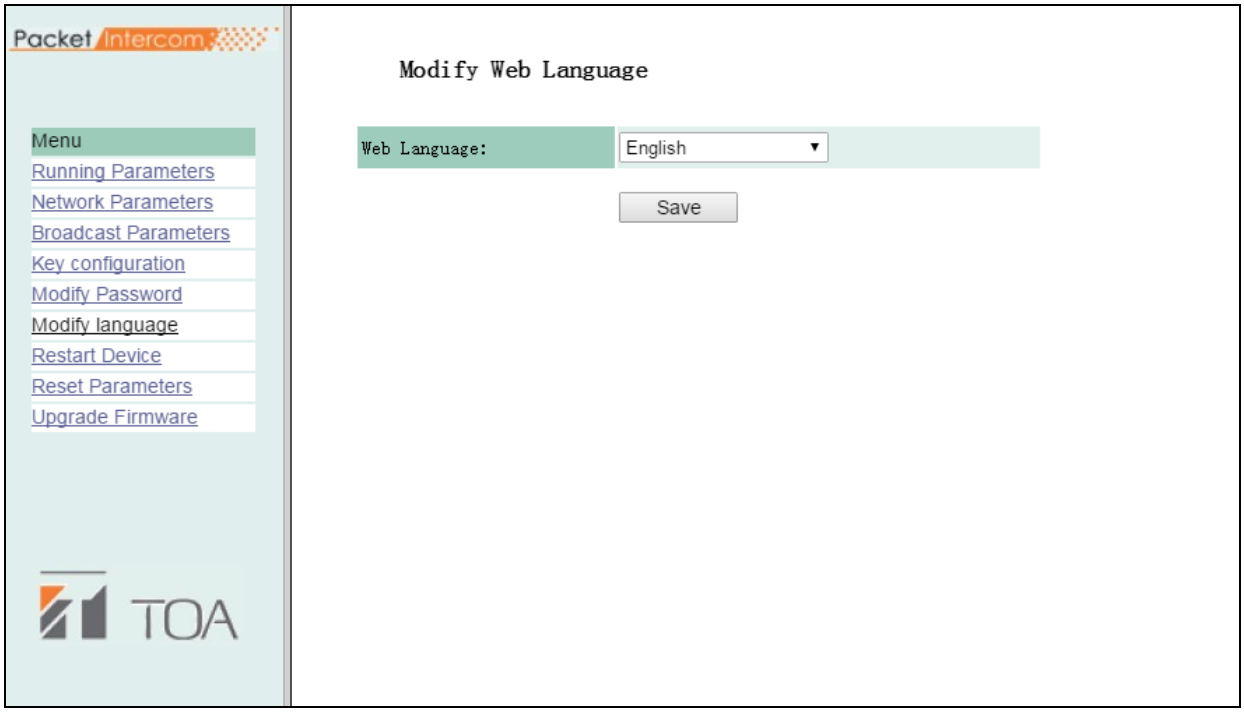
4.5 Password modification



The account number and password of login page can be modified in the Web management parameters.

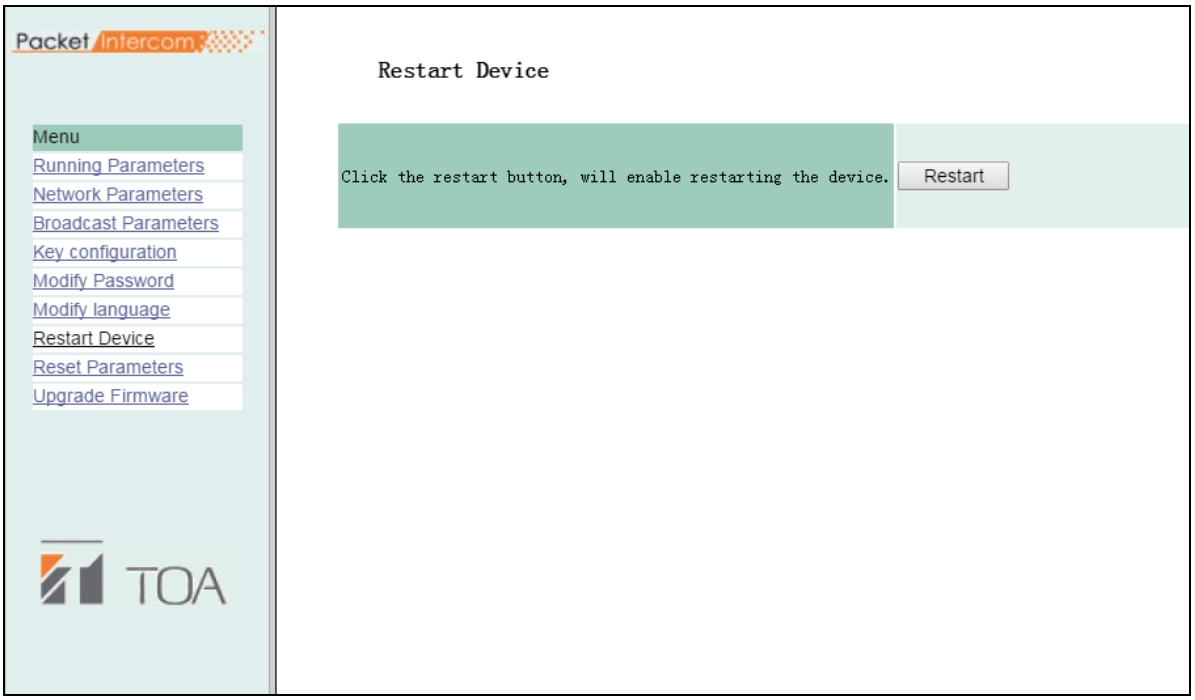
4.6 Web language modification

The Web page of IP remote control microphone application (firmware) program support English and Chinese, the Web page of the bottom (BIOS) program isn't support English.



4.7 Restart device

Clicking “restart device” to restart the device.

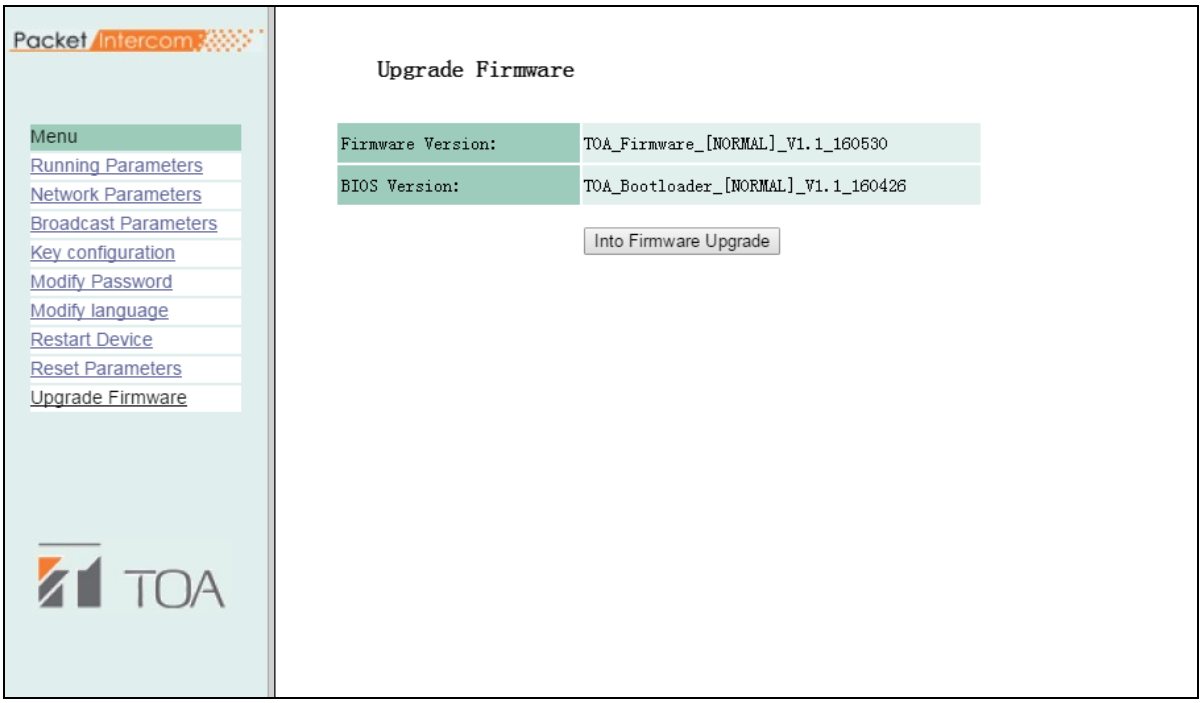


4.8 Resetting parameters

Restore to factory settings: all parameters will be restored to the factory settings.

4.9 Firmware upgrade

Clicking the left mouse key “to the firmware upgrade mode” and enter into the firmware upgrade interface.



Clicking browse, and select the correct upgrade file, clicking “firmware upgrade”, the device will automatically restart after upgrade. The fire alarm red light is flickering, the upgrade is completed, the trouble light (orange) is always on during the upgrading. After IP remote control microphone login on the server, the trouble light will be off.

Chapter 5

Operating description

Chapter 5: operating description

5.1 Broadcast

5.1.1 Receiving broadcast

IP remote control microphone can automatically receive broadcast from other devices or servers.

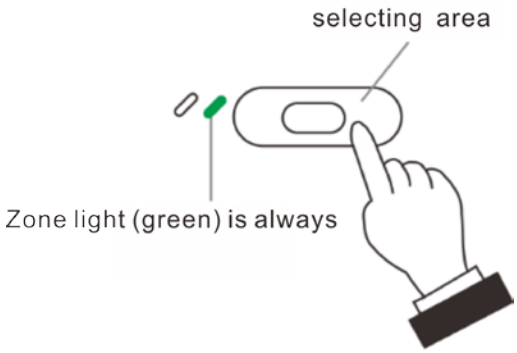
During the receiving, press “broadcast” can stop the broadcasting.

Receiving general broadcast, the related zone orange light will always on; Receiving the fire alarm broadcast, the related zone red light will always on.

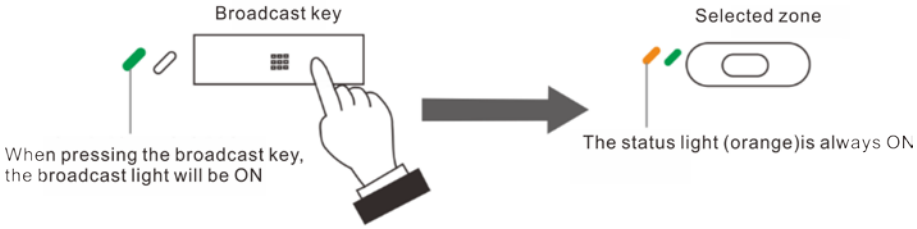
5.1.2 Initiating broadcast

5.1.2.1 Zone broadcasting

Step 1: manually press the key to select zones (or area), the corresponding zone green light will be on.

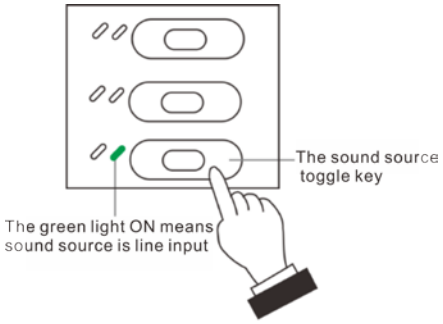


Step 2: Pressing the broadcast key to start the broadcasting, if successful to initiate the broadcasting, the related orange light will be on.



Step 3: Talking to the appointed zone (microphone pole input) or broadcasting the appointed audio program (line input).

IP remote control microphone defaults is microphone pole input, press the audio source switching key to the line input, repress it will switch to the microphone input.

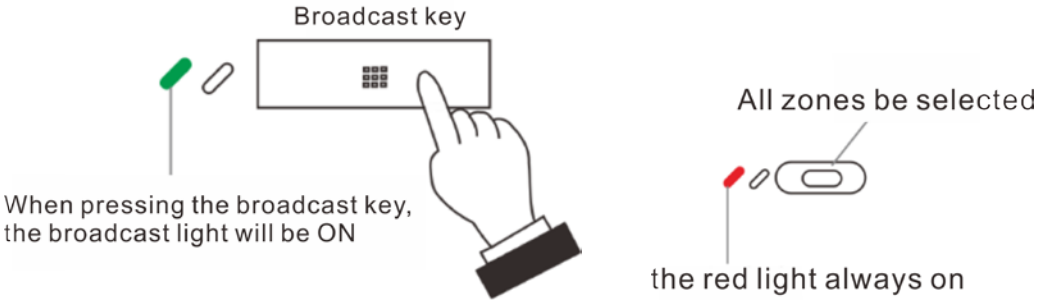


Step 4: repress the broadcast key to stop broadcasting, broadcasting light and related zone light will be off.

5.1.2.2 All zones broadcasting

Step 1: pressing the fire alarm key of microphone pole, the fire alarm red light is always on.

Step 2: pressing broadcast key to start full zones broadcasting, all zone red lights will be on.



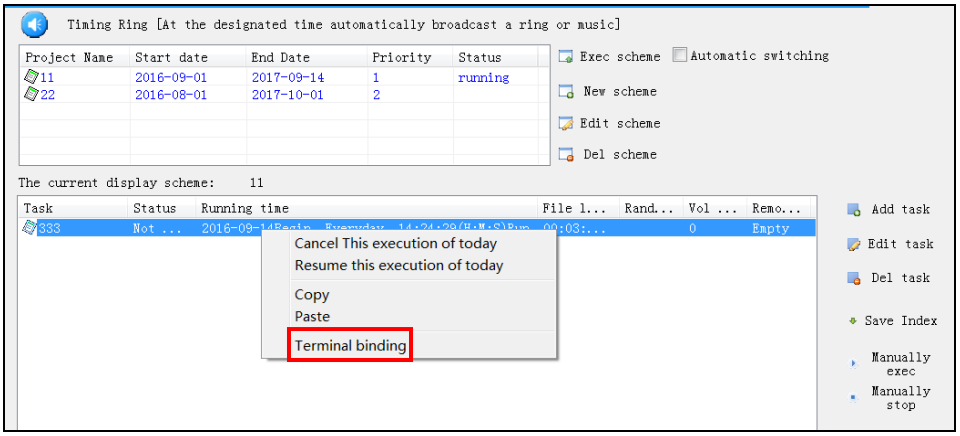
Step 3: talking to the appointed zone(microphone pole input) or broadcasting appointed audio program(line input), the specifications please refer to zone broadcasting step3 in page P5-1.

Step 4: repressing the broadcast key to stop broadcasting, fire alarm key light, broadcasting light and free zone light are off.

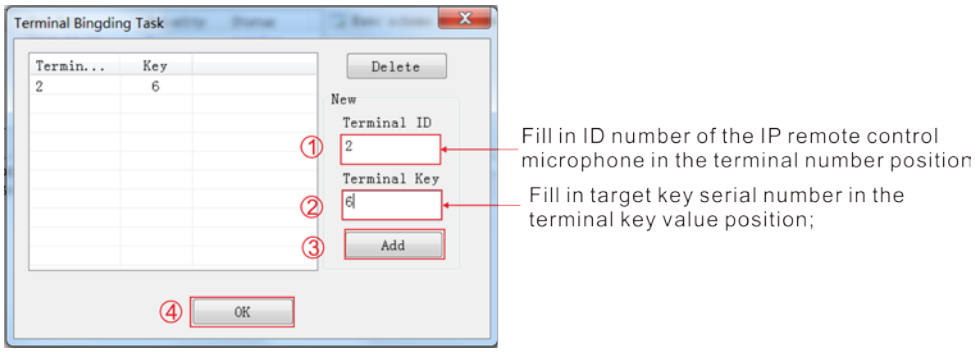
5.2.1 Pressing the key to trigger timing ringing task

Step 1: Configuration key is task key.

1-1 In the server timing ringing task list, right click to binding the device.



1-2 Binding ID and key value of the terminal in the pop-up dialog box.



①Fill in ID number of the IP remote control microphone in the terminal number position;

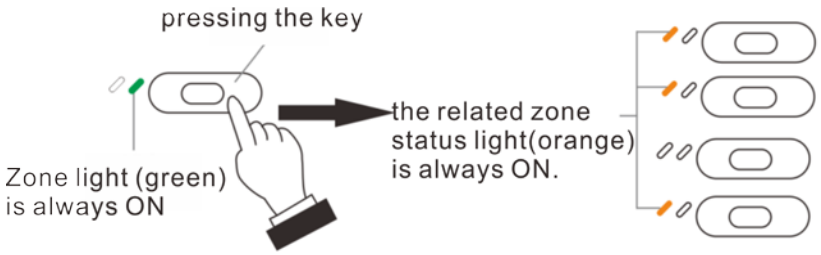
②Fill in target key serial number in the terminal key value position;

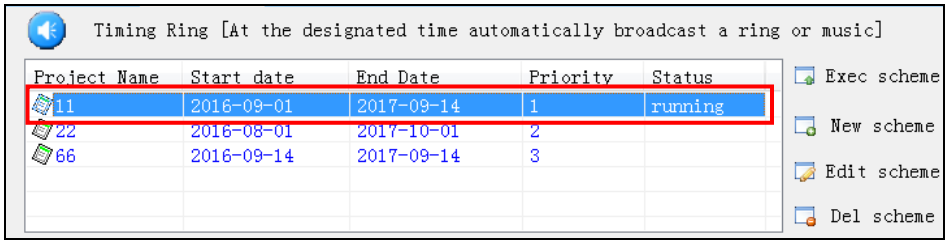
③Click add

④Click OK

1-3 The target key defined as the task key in the Web key configuration, the specifications please refer to page P4-4.

Step 2: Press the corresponding task key, the server will execute timing ringing task immediately, the corresponding zone green light will be on at the same time, related zone orange light is on.





Step 3: Repressing the task key, the task will be stopped, the corresponding zone and related light are off.

5.2.2 Automatically executing server timing ringing task

After the addition of server timing ringing task, IP remote control transmitter will automatically broadcasting the server appointed audio in appointed time, the corresponding zone green light and related orange light are on at the same time, the corresponding zone and related light are off after the task finished.

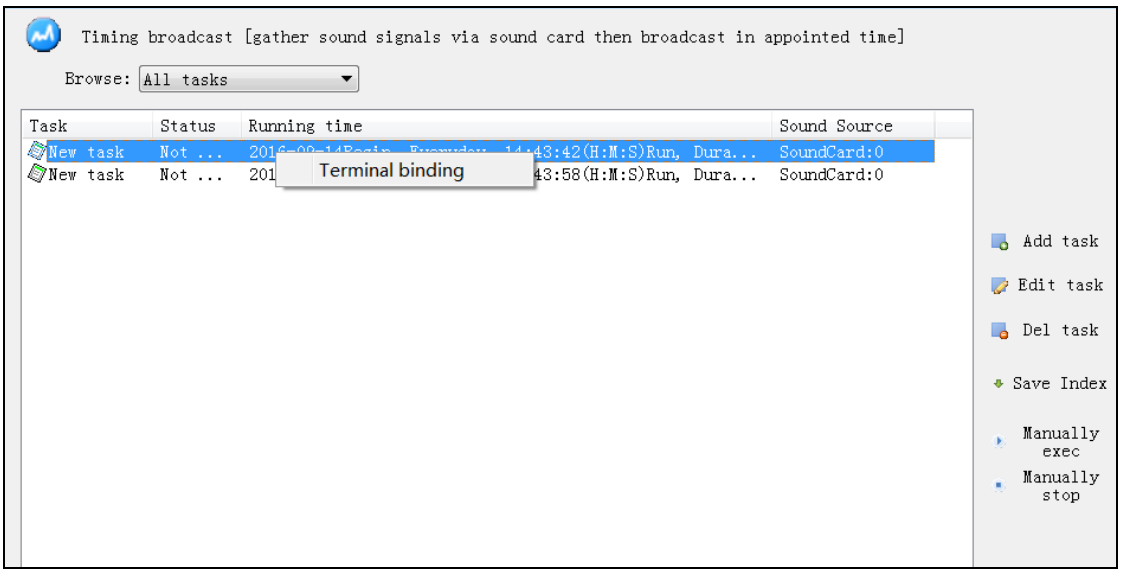
Chapter 5: operating description

5.3 Timing broadcasting

5.3.1 Press the key to trigger timing broadcasting task

Step 1: Configuration key is task key

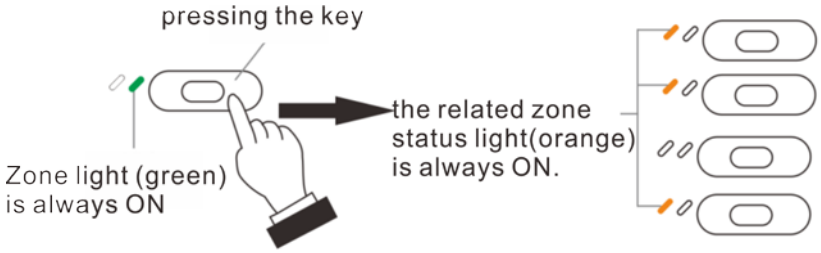
1-1 In the server timing broadcasting task list, right click to binding the terminal.

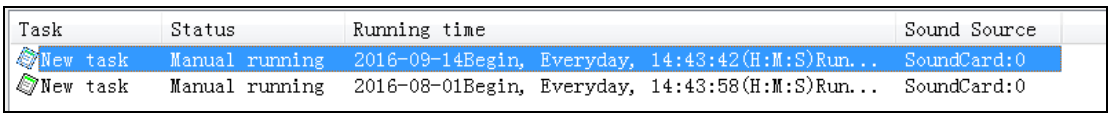


1-2 Binding ID and key value of the terminal in the pop-up dialog box, the specifications please refer to page P5-3.

1-3 The target key defined as the task key in the Web key configuration, the specifications please refer to page P4-4.

Step 2: Pressing corresponding task key, the server will execute timing broadcasting task, the corresponding zone green light and related zone orange light are on.





Step 3: Repressing task key, the task will be stopped, the corresponding zone and related light are off.

5.3.2 Automatically executing server timing broadcasting task

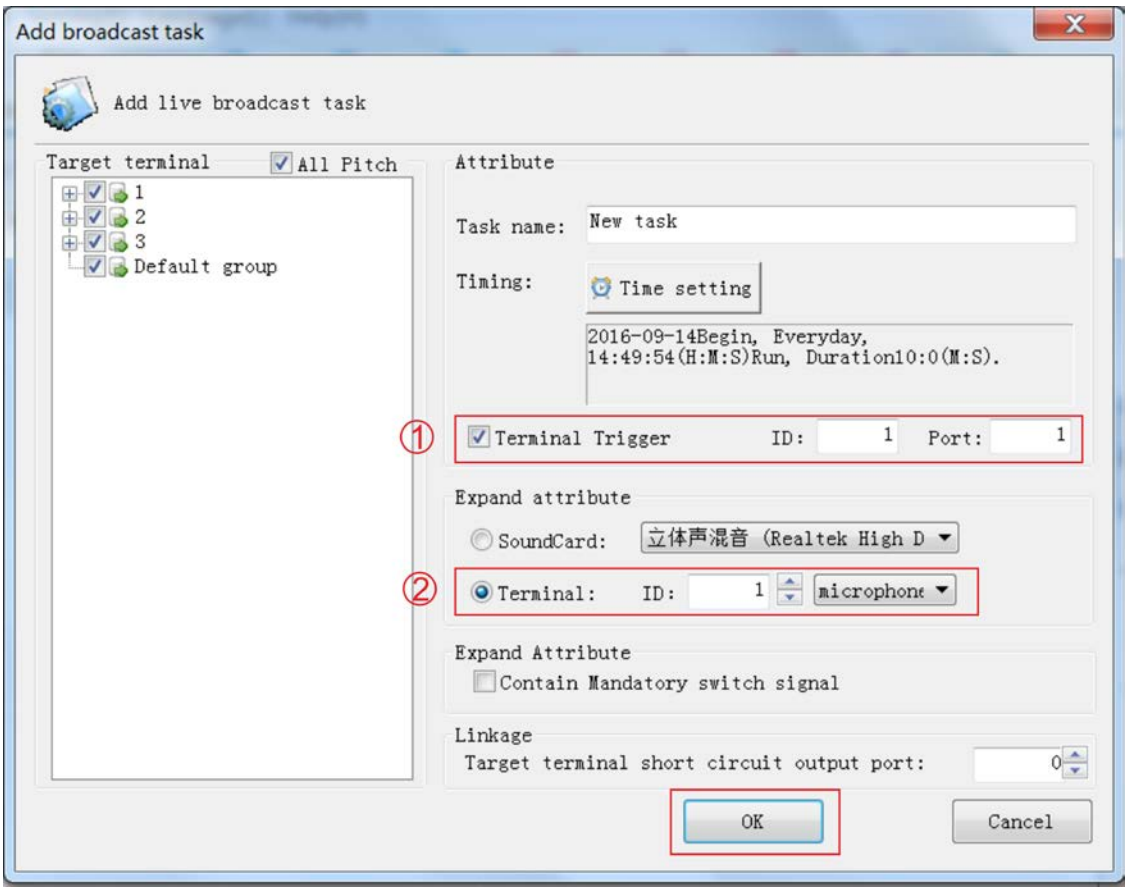
After the addition of server timing ringing task, IP remote control transmitter will automatically broadcasting the server appointed audio in appointed time, the corresponding zone green light and related orange light are on at the same time, the corresponding zone and related light are off after the task finished.

5.3.3 Input controlling to trigger the timing broadcasting task

Step1: Adding the timing broadcasting task in the server.

1-1 Triggering the appointed terminal, and inputting the ID number of the IP remote control microphone;

1-2 Sound source comes from terminal and appointed the sound source (line input or microphone), inputting ID number of the IP remote control microphone.

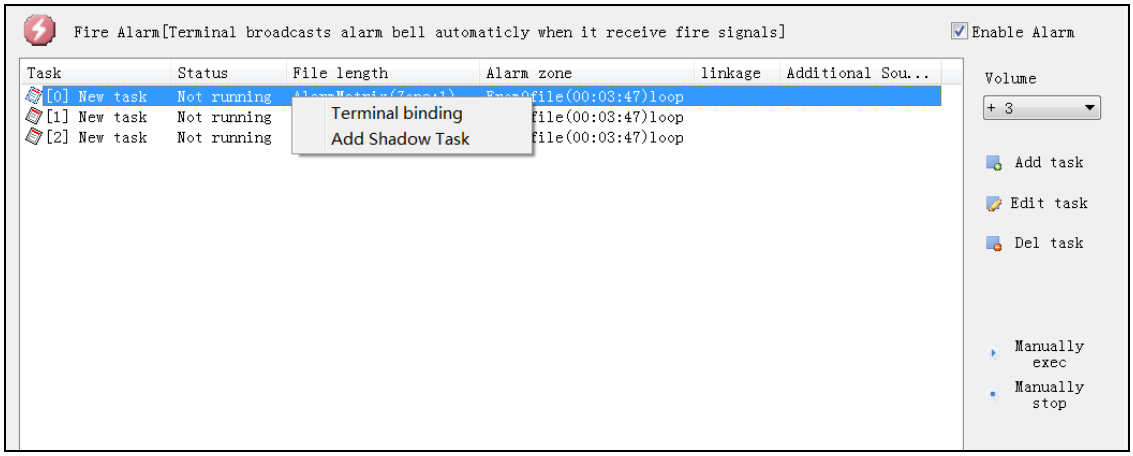


Step 2: When the MIC control input is shorted, the corresponding time broadcasting will be triggered. The MIC will broadcasting the audio of line input in appointed zone, press audio switching key can change the sound source. When IP remote control MIC input controlling is disconnected, the timing mining task will be stopped immediately.

5.4.1 Press the key to trigger fire alarm task

Step 1: Configuration key is task key.

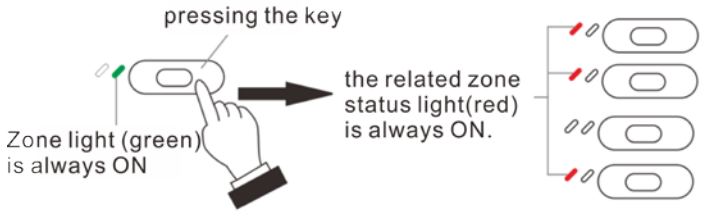
1-1 In the sever fire alarm task list, right click to binding the terminal.

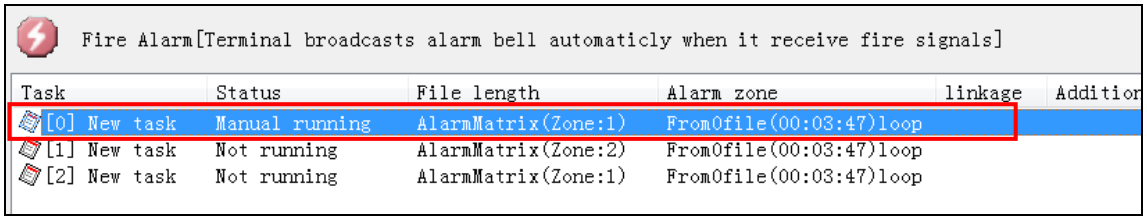


1-2 Binding ID and key value of the terminal in the pop-up dialog box, the specifications please refer to page P5-3.

1-3 The target key defined as the task key in the Web key configuration, the specifications please refer to page P4-4.

Step 2: pressing the corresponding task key ,the timing bell task will be executed by the server, and corresponding zone light(green) will be ON, the related zone status light(red) is always ON.





Step 3: Repressing task key, the task will be stopped, the corresponding zone and related light are off.

5.4.2 Automatically executing server fire alarm task

After adding the timing bell task to the server, the network remote control microphone will automatically broadcast the appointed sound source, and the zone light (green) is always ON, the related zone status light (red) is always ON, after the task finished, corresponding zone status lights will be OFF.

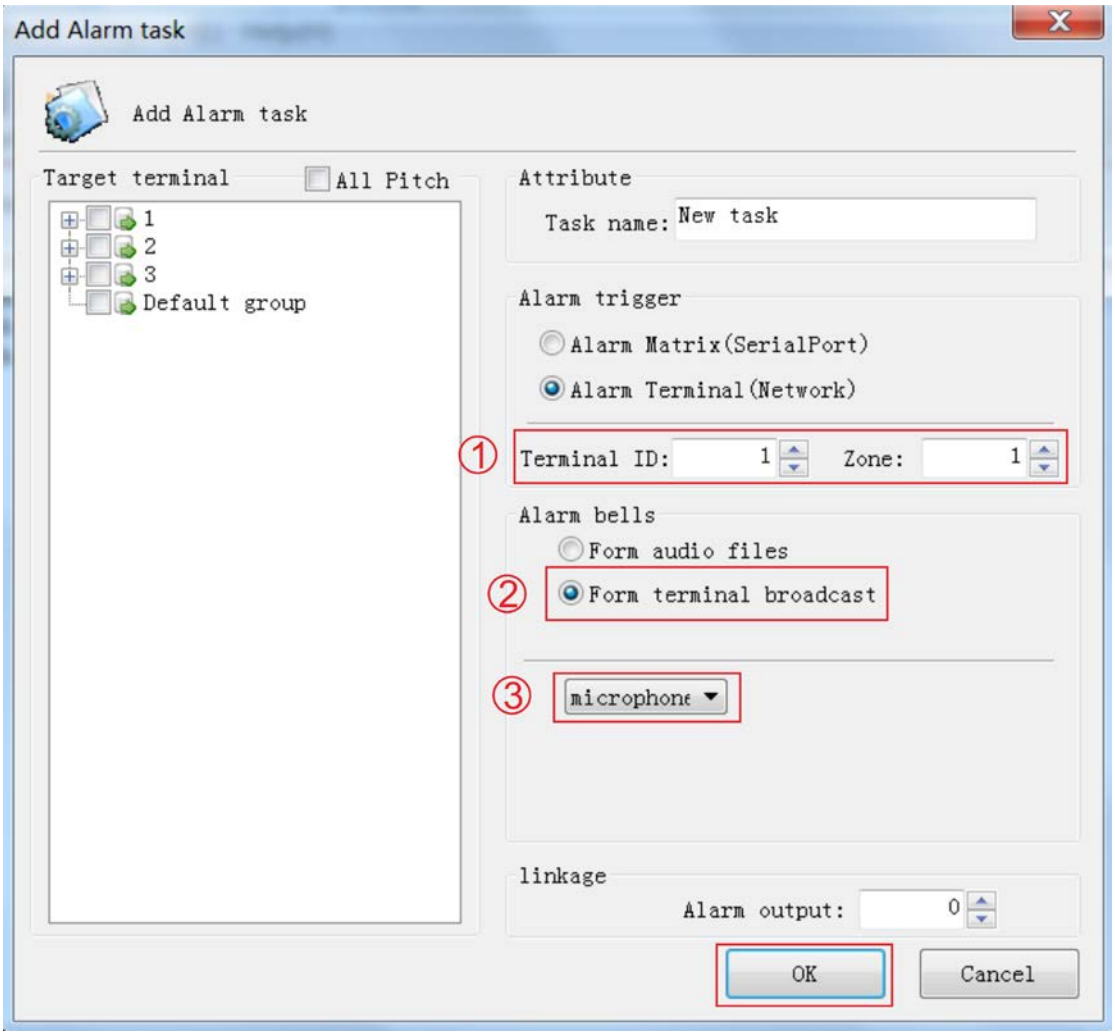
5.4.3 Input controlling to trigger the fire alarm task

Step 1: Adding the fire alarm task in the server.

1-1 Triggering device select alarm terminal, and inputting the ID number of the IP remote control microphone;

1-2 Alarm ringing select “from the terminal alarm”.

1-3 Selecting sound source (line or microphone input).



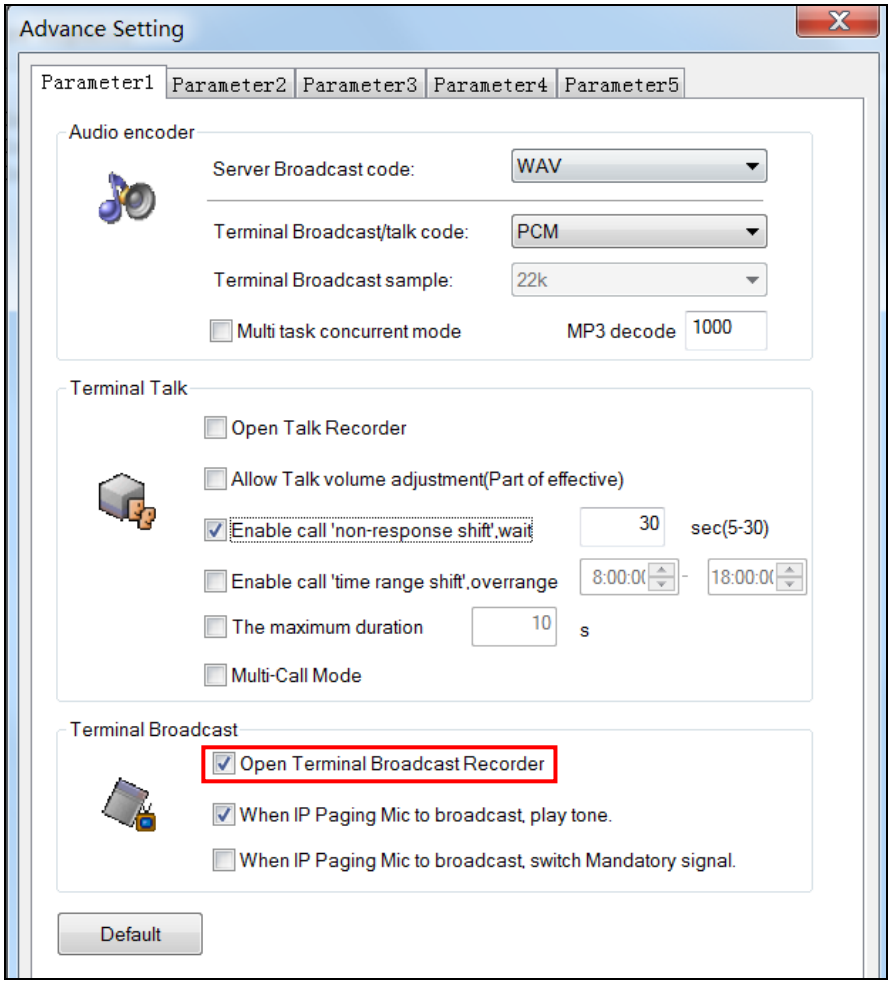
Step 2:The MIC control input is short circuit will trigger the corresponding fire alarm task, the MIC will broadcasting the audio of line input in appointed zone, press audio switching key can change the sound source.

When IP remote control MIC input controlling is disconnected, the timing mining task will be stopped immediately.

5.5 Recording

Server can automatically recording and save all broadcasting OF IP remote control microphone, the user can check the recording files by recording tools.

Step 1: Select “auto-recording in broadcasting” in the server advanced setting.

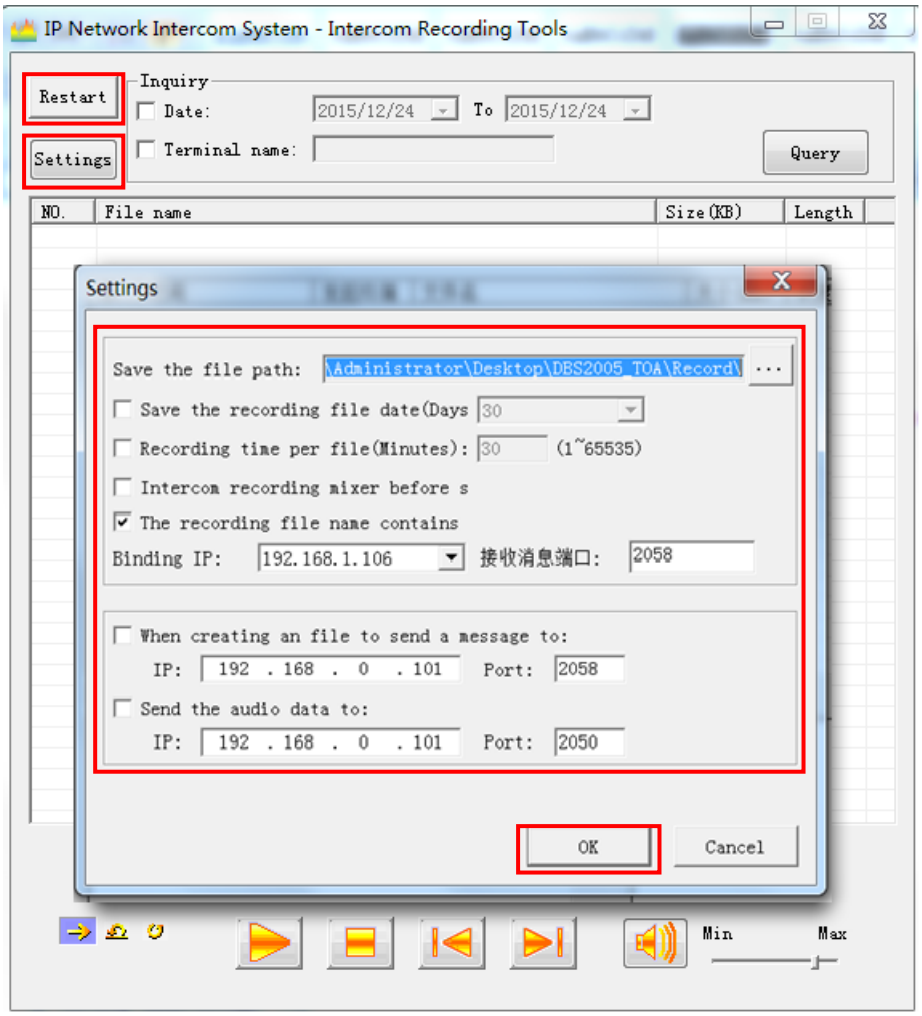


Step 2: Recording tool configuration

2-1 Running recording tool

2-2 Clicking setting, after recording parameters configuration then click “OK”.

2-2 Clicking “restart server” to restart the recording tool.



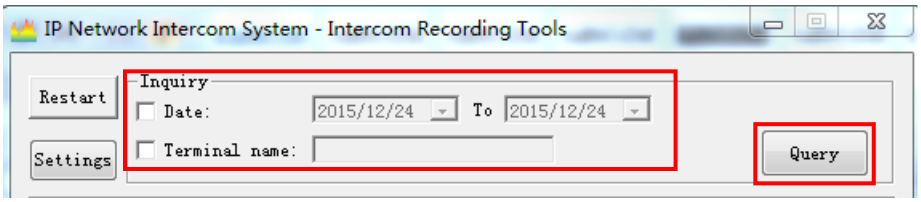
Step 3: Checking and listening recording files.

3-1 Please select screening condition (date or terminal name), and inputting key words.

3-2 Clicking

, the recording tool will indicate the qualified recording file.

3-3 Selecting target file in the recording file list, clicking to listening.



Chapter 6

Appendix

Chapter 6: appendix

6.1Specification

6.1.1 IP remote control microphone IP-100RM

Model number	IP-100RM
Power	Normally input DC24V　maximum adaptation range is DC12~25V
Current consumption	Less than 200mA（IP-100RM）、less than 500mA（connect with 9 RM-110）@24V
Audio input	Balance,1Vrms(Max:2Vrms)@10KΩ
Audio output	Imbalance, 1Vrms @10kΩ　or　imbalance,11.25mW@32Ω
Built-in monitor speaker	Maximum power output: 1.0W
Frequency response	Line input (sampling frequency:22k):20~10HZ Networking broadcasting, line output(mp3/sampling frequency:44k):40~20kHZ Networking broadcasting、loudspeaker output(mp3/sampling frequency:44k):20~20kHZ
Volume control	Microphone volume control, monitor speaker volume control
Input controlling	Optocoupler short circuit input, open-circuit voltage is DC5V, the maximum short-circuit current ≤5mA
Number of functional keys	Single machine 15, maximum to 105 (9 RM-110 connection)
I/F Network I/F	10BASE-T/100BASE-TX,automatic decision
Network protocol	UDP,ARP,ICMP,HTTP,IGMP
Working temperature	0℃~+40℃
Working humidity	Less than 90%RH (no dew point)
Appearance	ABS resin, green gray color
Size	190（W）×76.5（H）×21.5（D）mm（Without microphone）
Optional accessories	Power adapter（24V/1A）1PC

6.1.2 IP remote control microphone extension unit RM-110

Model number	RM-110
Current consumption	Less than 20mA (IP-100RM DC power input)
Number of functional keys	10
Working temperature	0℃~+40℃
Working humidity	Less than 90%RH (no dew point)
Appearance	ABS resin, green gray color
Size	110（W）×76.5（H）×215（D）mm
Accessories	Extension cable ×1 Installation parts A ×2 Installation parts B ×1 Screw ×12

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