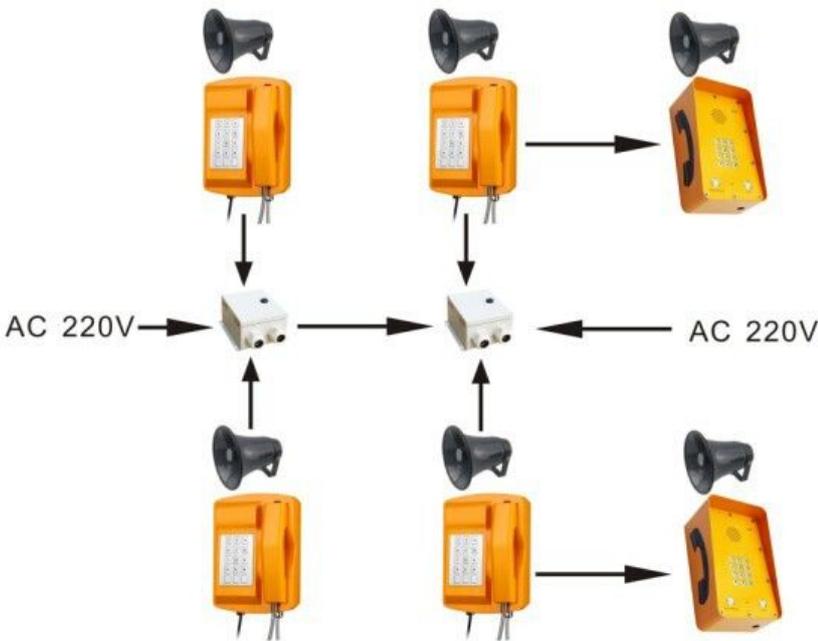




**Industrial Multi-Party Paging System PA3**

**User Manual**



# Industrial Duplex Multi-Party Paging Broadcasting System User Manual

## Chapter 1 System Introduction

### 1.1 System Features

The “Multi-Party Talk” Paging system PA3 is designed for communication in industrial environments.

A: It is suitable for high noise, corrosive atmospheres, hazardous areas and extremes of temperature, dust and humidity create hostile environments.

B: The “Multi-Party Talk” system have two operations: the first one is group calling through pick-up handset and pressing one button to auto-dial; The other one is two-way private intercom in one line or more two-way groups calling and can be allowed up to 99 persons communication at most.

C: The system also can be connected to external network, and the extension can call other phones outside of the network.

- 1.** To initiate communication or broadcast over the system to all other station, the operator at one of the station lifts the handset from the cradle, presses \* to call and speak to all the other party.
- 2.** All the stations rings and auto-answers. All the other user at all other station can joins the conversation by lifts the handset and speaking into the handset. The system allows all party simultaneous conversation without cross-talk or interference. After conversation each station will auto off to release the line.
- 3.** To initiate communication or broadcast to one of the other station, the operator at one of the station lifts the handset from the cradle, presses ID

number (extension number) which you want to call, and speak to them.

After conversation each station will auto off to release the line.

**Features:**

- Hand in hand cable connection to save cable
- Two-way, all-party communication
- Wall mount, desktop, models
- Indoor, outdoor and hazardous location models
- Center power supply (all in one) available in 110VAC~ 230VAC within  
Distance Maximum to 7KM within 30 extensions
- If over 30 extensions and over 7KM, each station need AC power supply  
110VAC~ 230VAC
- Automatic broadcasting with 8W loud speaker
- Analogue system auto answer and auto stop
- Self healthy check
- LCD display for caller ID and the dialing number.
- Last number repeat dial
- ID number programmable
- 2 speed dialing keys

**Specification:**

1. Robust SMC die-cast body, vandal resistant and tamper resistant
2. Weather resistant to IP66 standard, service temperature range from:-35°C to +75°C
3. Magnetic reed hook-switch
4. Cable line powered. No external power or battery back up required.
5. Lightning protection to ITU-T recommendation K.21
6. Handset: made of special SMC, high anti-knock resistance, Weatherproof, armored cable optional,
7. Hearing Aid compatible receiver
8. Extension integrity wiring to enable the other station to check if the telephone unit is still operational for Self healthy checking
9. 7 minutes time out
10. Easy installation/ replacement

**Application:**

Popular applications include oil and gas platforms, nuclear power plants, shipbuilding, chemical plants, oil refineries, steel company, subway tunnels, and other large infrastructure projects

## 1.2 system composition

It is comprised of wall mount telephone station, desk telephone station, IIC explosion proof user telephone, outline telephone station, unidirectional broadcast telephone station, line equalizer, communication cable, AC 220V powered, etc.

## 1.3 System Power Supply

AC 220V centralized power.

## 1.4 Telephone station type

Indoor wall mount telephone station outdoor wall mount telephone station desk telephone station, IIC explosion proof user telephone, outline telephone station, unidirectional broadcast telephone station.

## 1.5 Telephone station Capacity

Telephone station Capacity system: 2 99.

## 1.6 Transmission distance

Systems for the effective transmission distance: 26Km .

# Chapter 2 Technical characteristics

## 2.1 Using Environmental conditions

- Environment temperature  $-30^{\circ}\text{C}$   $+70^{\circ}\text{C}$  (outside wall mounting telephone station)
- $-10^{\circ}\text{C}$   $+35^{\circ}\text{C}$  (inside desk mounting telephone station)
- Relative humidity  $\leq 90$
- Environmental noise  $\leq 110\text{dB}$  (outside wall mounting telephone station)
- Barometric pressure 70Kpa 106Kpa

## 2.2 Main Features

### Broadcasting Feature

There are 3 to 6 channel. After pick up the hook;

- 1.press L1 +outline number: calling out ling。
- 2.press L2 or L3, press #+ID number: single calling(calling by one to one).
3. Press L2 or L3, press #+99999: whole calling.
4. Press L2 or L3, press #+ group number: group calling
5. Press L2 or L3, press speed dial number at least three second. When hear the dial tone can release the button.

Open broadcast system function to make a broadcast call,

#### 2.2.1 Duplex call

After the called user pick up the hook. Caller can make a duplex calling through the handle microphone or press the hands-free button.

#### 2.2.2 Channel switching

After the called user pick up the hook. Caller can make a duplex calling through the handle microphone.

#### 2.2.3 Channel switching

Rotary Switches operate 3 6 communication channel selection.

#### 2.2.4 Boardcasting mute setting

Maintainer can setting the call volume via the mute switch on the motherboard;

### 2.2.5 Using PSTN to make outline telephone communication

Outline user can make a boardcasting calling and communication via outline telephone station to PSTN.

### 2.2.6 Expansion easy to use

Each station works independently. All the telephone station work via 8-14 core cable in parallel. If any one station failure does not affect the normal operation of other user stations. Users can according demand to expand station or relocation. It's unlimited.

## 2.3 The Main Index

### 2.3.1 Working power supply

Power voltage : AC 220V $\pm$ 10% 50Hz $\pm$ 5% .

Power Static state  $\leq$ 3W, Dynamic time for desk telephone station  $\leq$ 10W, wall mounting telephone station $\leq$ 25W.

### 2.3.2 Communication Channel

- Out up : RMS: 2V (Load impedance 33 $\Omega$ )
- Output amplitude limits: RMS: 1.5V (Load impedance 33 $\Omega$ )
- Gain: 70dB Adjustable over
- Frequency response: 250-5500Hz $\pm$ 3dB
- Distortion degree:  $\leq$ 5 , 1000Hz

### 2.3.3 Desk type telephone station broadcasting part

- Output amplitude: 2W (Load impedance 8Ω)
- Gain: normality 50dB, The adjustment range (40-68dB)
- Frequency response: 250-5500Hz±3dB
- Distortion degree: ≤5 (Test frequency: 1000Hz, Output amplitude: 3W)
- Input impedance: 50KΩ
- Output impedance: 8-16Ω

### 2.3.4 The parts of outdoor wall-mounted telephone station broadcasting.

- Output amplitude: 15W (load impedance 8Ω / 16Ω);
- Gain: Normal 58dB, adjustable range (40 ~ 68 dB);
- Frequency response: 250 ~ 5500Hz ± 1.5dB;
- Distortion: ≤5% (test frequency: 1000Hz, the output amplitude: 12W);
- Input impedance: 50KΩ;
- Output Impedance: 8 ~ 16Ω.

## 2.4 System transmission distance

System transmission distance of the system effective transmission distance:

26Km.

## 2.5 The number of channels

The system has one broadcast channel, Five call channels, you can choose the communication channel by turning the switch of the call station, then up to 3 to 6 simultaneous calls to the user.at the same time.

## 2.6 Security

### 2.6.1 Dielectric strength

Then call station can withstand 50Hz, 1500V AC voltage without breakdown and arcing phenomena

### 2.6.2 Insulation resistance

Then call station at room temperature, the insulation resistance of AC power connector to the metal chassis equipment not less than  $2M\Omega$ .

### 2.6.3 Leakage Current

The leakage current of call station is less than 3.5mA.

## Chapter 3 Structure

### 3.1 Desktop call station

The call station make up by the desk telephone and power junction boxes, of which the telephone Dimensions: L: 250 (mm), W: 225 (mm), H: 115 (mm), the power junction box Dimensions L: 210 (mm), W: 305 (mm), H: 125 (mm), As Figure 1.

The telephone can external connect a 5W speaker if needed.

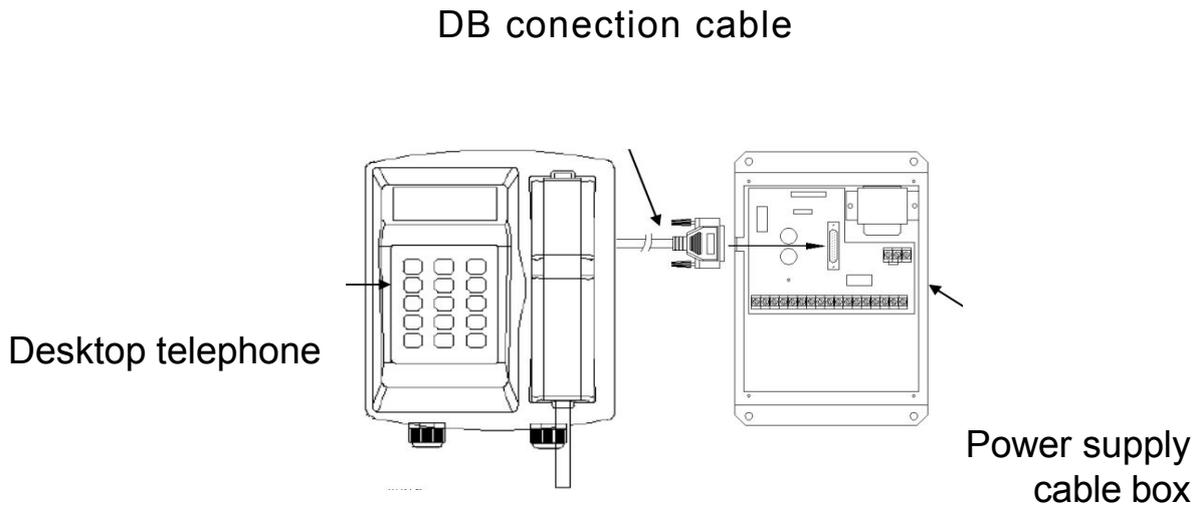


Figure 1

### 3.2 Indoor wall mounted telephone

The call station make up by the indoor wall-mounted telephone and 15W loud speaker, then wall mounted telephone Dimensions: L: 290 (mm), W: 185 (mm), H: 118 (mm), As Figure 2.

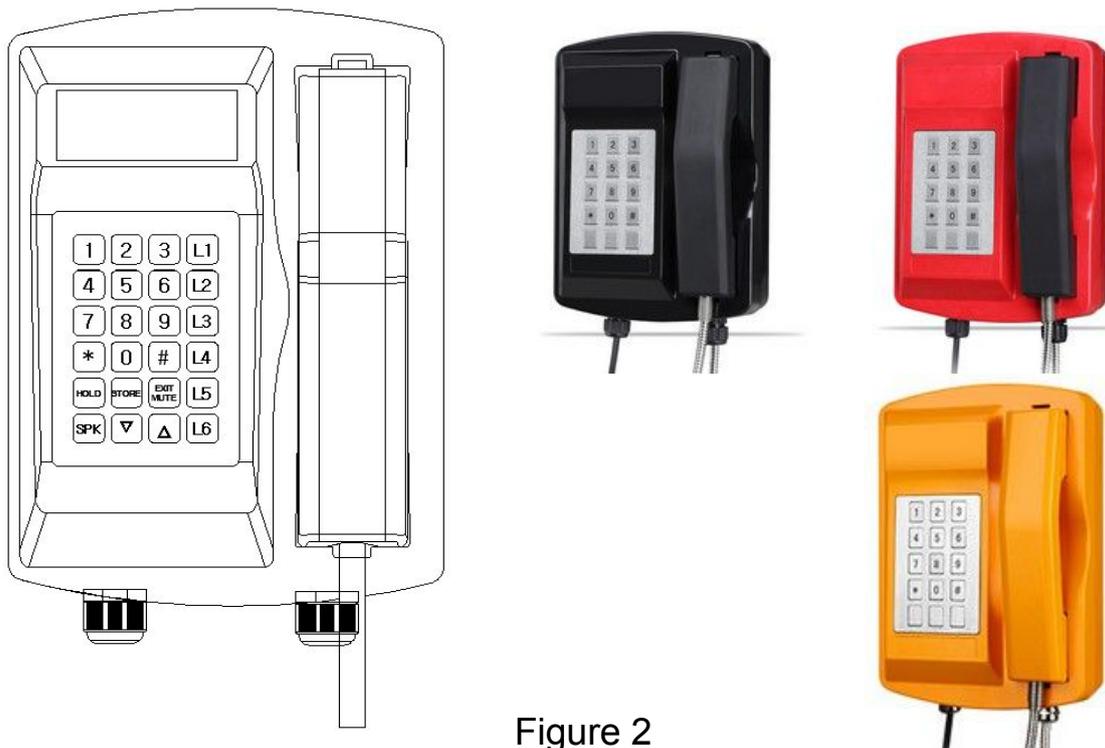
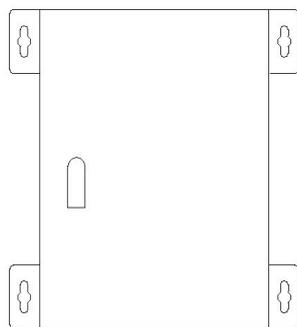


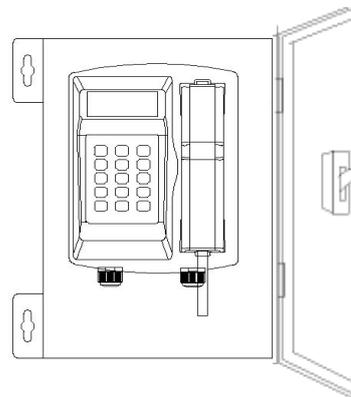
Figure 2

### 3.3 Outdoor wall-mounted telephone station

Consisted by the indoor wall-mounted telephone, protective box and 15W speaker. Protective box Dimensions: L: 400 (mm), W: 300 (mm), H: 150 (mm), Dimensions shown in Figure 3.



protective box



Indoor wall mounting telephone

Figure 3

### 3.4 Outside line telephone station

Dimensions:400(mm) , W : 300(mm) , H : 150(mm)

### 3.5 Cable junction box

We have 3 models,JB-3,JB-1,KNB11,with internal terminal plate,The line has been completed in the internal connection,can be configured according to site requirements,Dimensions shown in Figure 4.

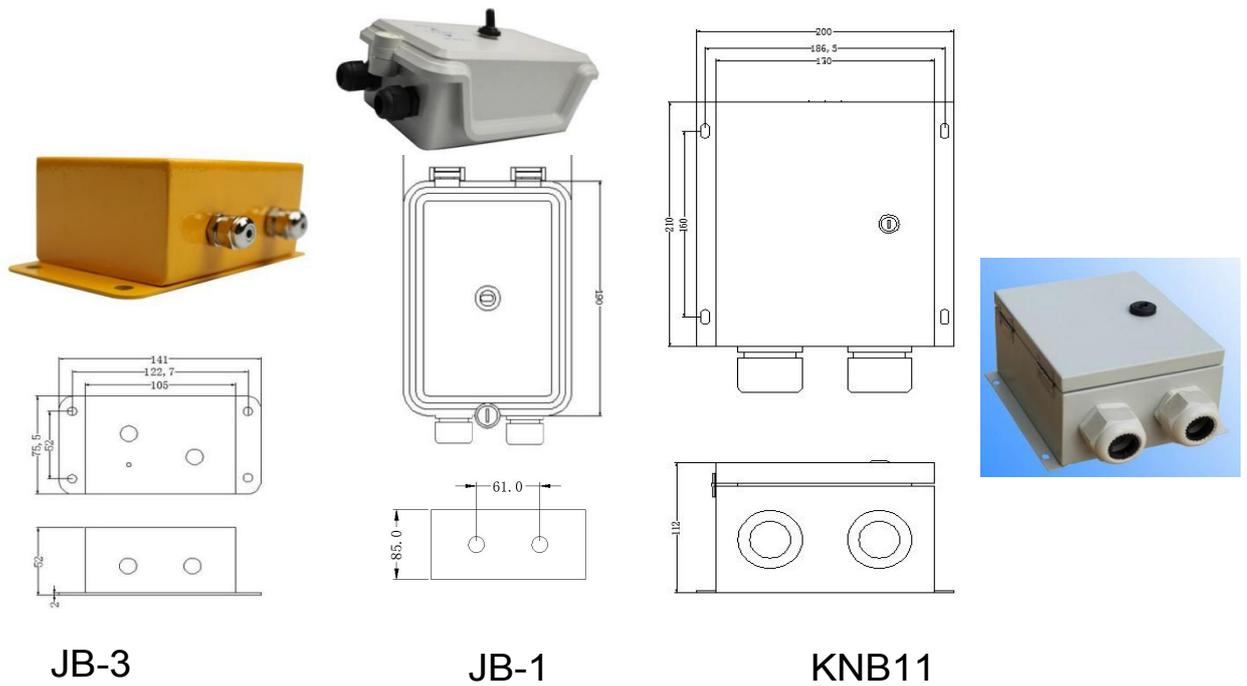


Figure 4

## Chapter4 Fitting and Adjustment

### 4.1 Installation requirements

#### 4.1.1 Indoor wall-mounted telephone and Outdoor wall-mounted telephone station

The bottom should be 1.25 meters above the ground when installing, connected 15W speakers should be installed 2.5 meters above the ground, shown in Figure 5.

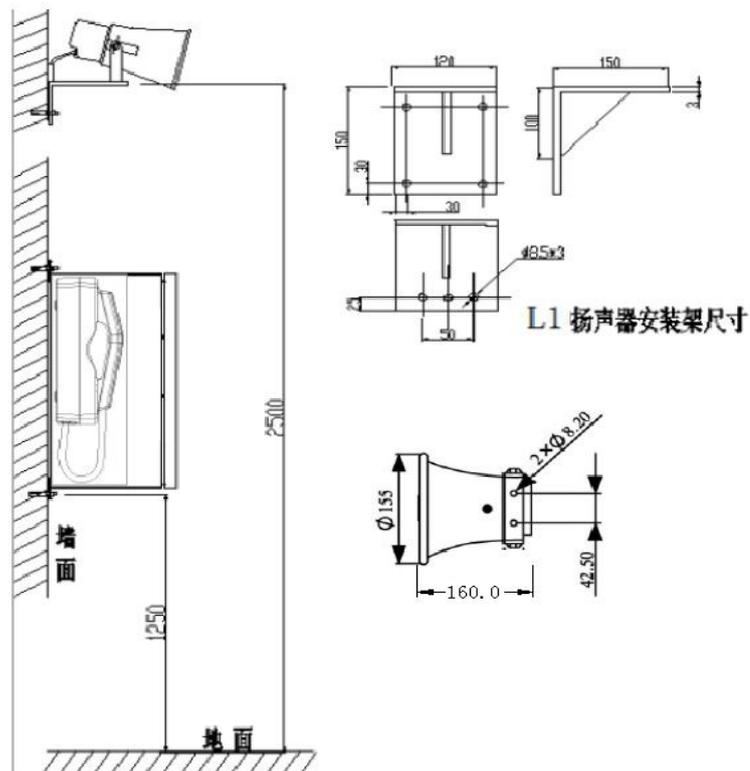


Figure 5

#### 4.1.2 Outside line telephone station

Outside line telephone station junction box will be installed in control room be convenient for installation and maintenance.

#### 4.1.3 Earth Wire

Indoor wall-mounted telephone station, Outdoor wall-mounted telephone station, Power supply wiring box, Cable junction box, the metal shell to be reliably grounded when installing.

## 4.2 Piping, cable laying

4.2.1 To meet the industrial and mining complex, harsh field environments, the cable should be metal piping laying.

4.2.2 System uses special all shielded cable.

4.2.3 To avoid electromagnetic interference, the wiring on the cable channel or cable tray, should avoid high-voltage, high-current, high magnetic field environment. Implementation of the relevant provisions of the communication cabling.

4.2.4 Using metal spring hose to connect cable pipes with terminal

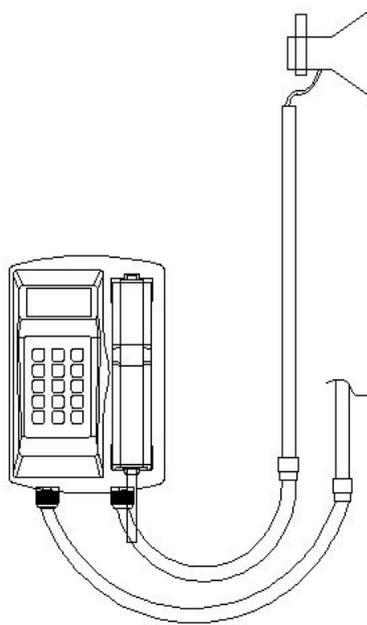


Figure 6

### 4.3 system connection

4.3.1 On the cable before terminals work, the core wire which is connected to the same terminal need to be compression joint by Y-shaped terminal or round-shaped terminal to ensure good conductivity properties

4.3.2 Line sequence should be defined before connecting 8 to 14 core cable, to ensure that each terminal are in line with pre- defined easy on-site installation and future maintenance ;

4.3.3 System connection diagram shown in Figure 7 .

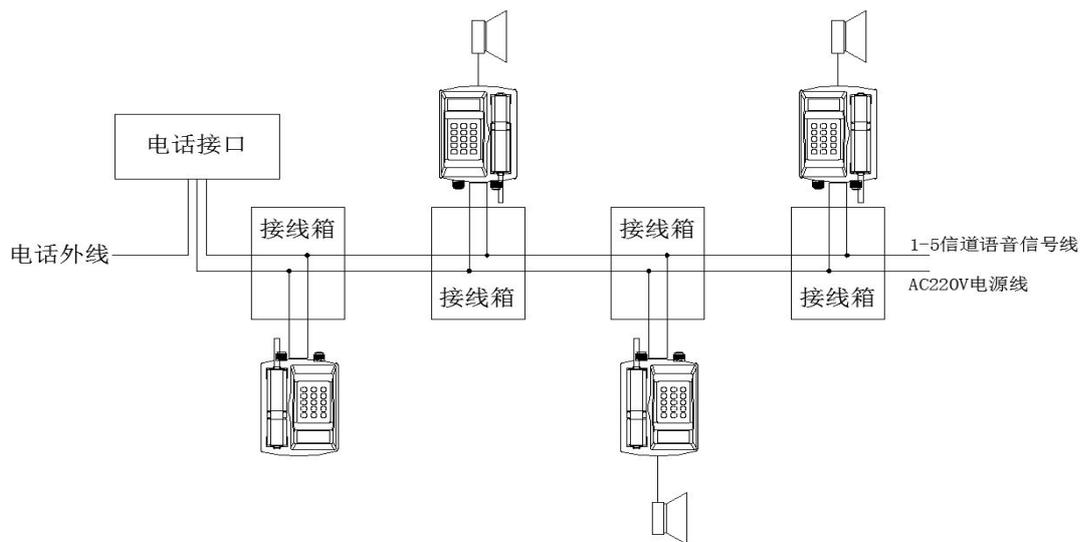


Figure 7

4.3.4 All the terminals power ground wire must be connected to the grounding line when connected,as shown in Figure 8

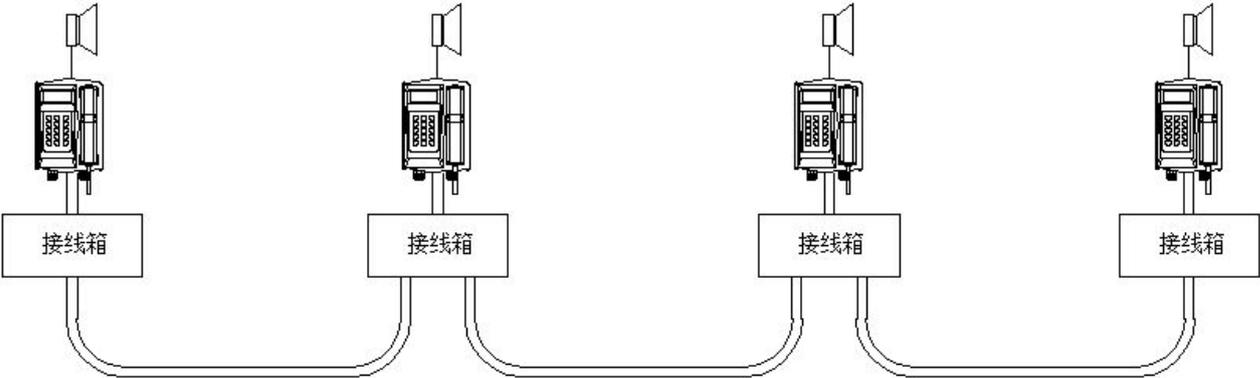


Figure 8

4.3.5 Cable shield electromagnetic interference is mainly used to isolate the site , should be connected in a single- grounded, Figure 9 Figure 9

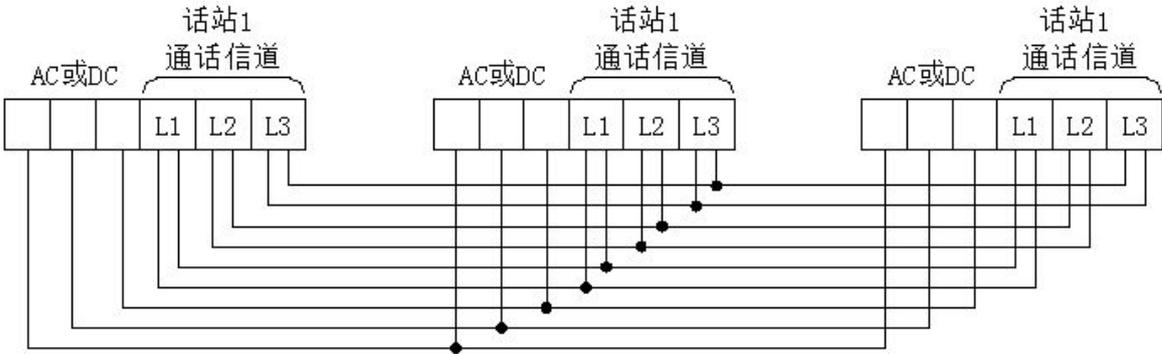


Figure 9

### 4.3.6 System configuration diagram, Figure 10

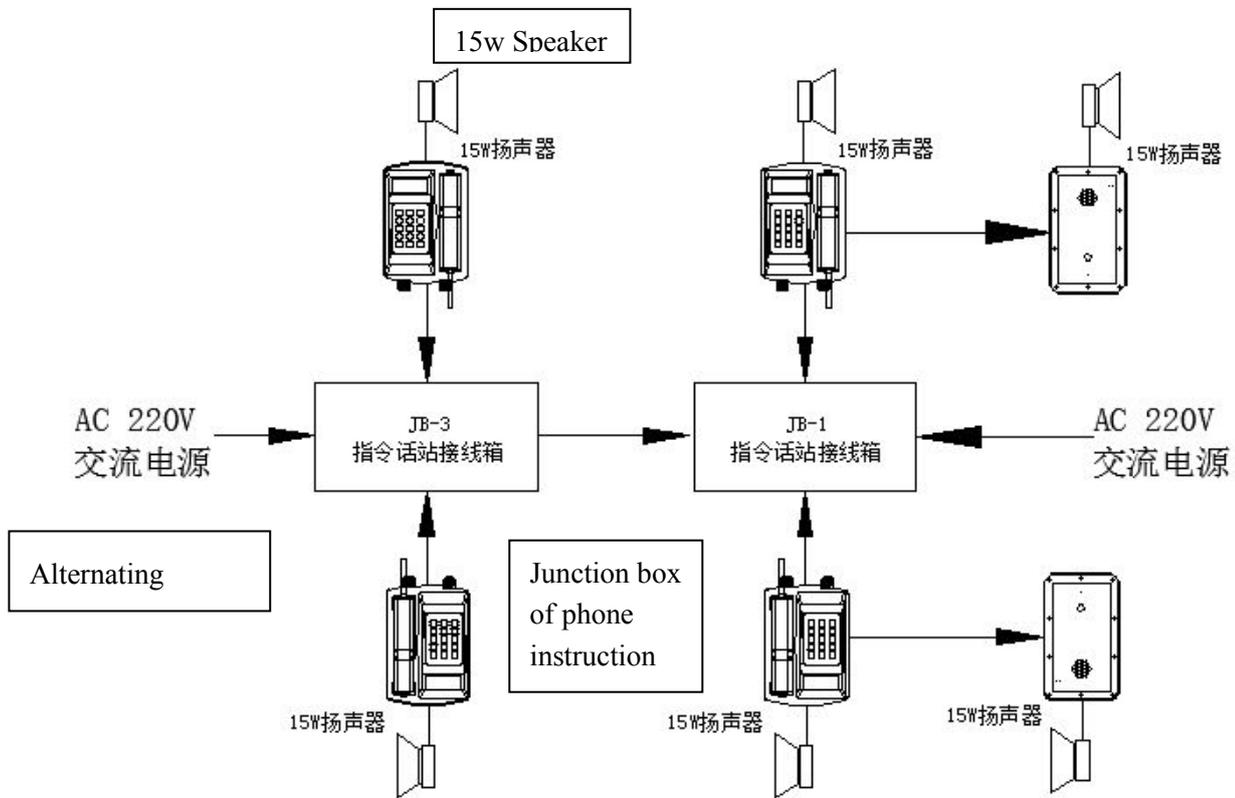


Figure 10

## 4.4 Equipment commissioning

### 4.4.1 Adjustment after installing the desktop phone

Main volume adjustment after installing desktop phone Figure 11, which adjust potentiometer clockwise to increase the volume.

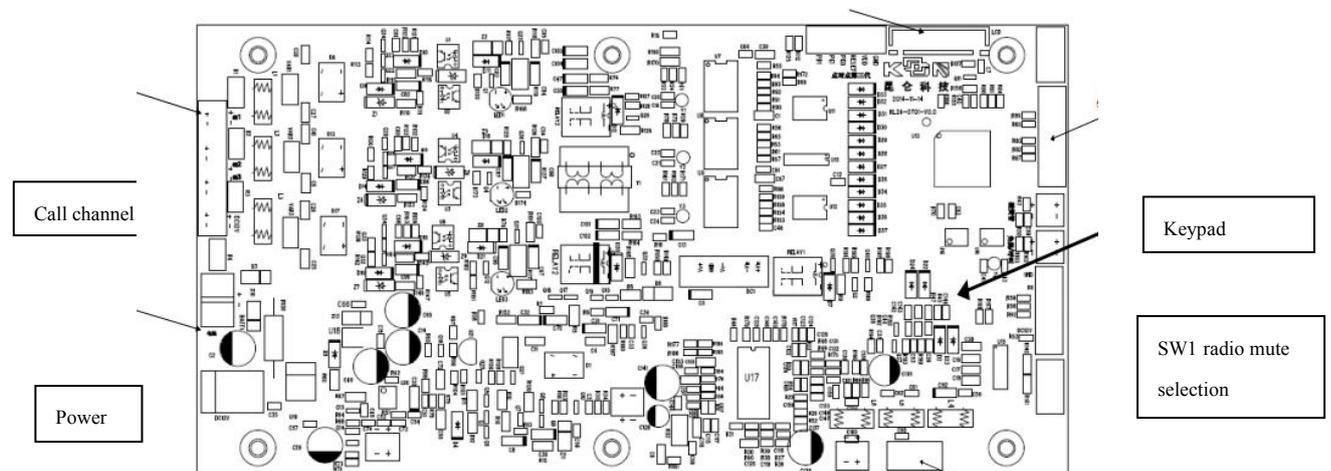


Figure 11

## Chapter 5 The Use and Operation

### 5.1 Desktop phone and wall-mounted phone

#### 5.1.1 Call Status

User A calls user B, remove the handset, the system enters the broadcast call status, then all broadcast channels open, User A's call can be heard through the speakers.

#### 5.1.2 Call state

User B hear the broadcast call, remove the handset, then talk with the user A duplex.

#### 5.1.3 Hook state

After the call, hang up the call two sides, release the occupied channels, and complete the entire operation. The phone possess automatic hang up function, the caller hangs up first, automatically hang up after receiving called hook signal, the user can also choose set six minutes limit call.

#### 5.1.4 Broadcast volume adjustment

Control volume buttons on the keyboard ' $\triangle$   $\nabla$ ' to adjust the volume.

### 5.2 Other

The use and installation of explosion-proof phone, wireless phone users, external electrical and other telephone equipment, see the relevant instructions.

### 5.3 Repair and Maintenance

To protect the user's safety, please do not open a device cabinet to avoid electric shock, not all components inside the device needs to be maintained. If there is abnormal situation, please contact our company or the agency, we will be happy to serve you.

### 5.4 Optional phone

Our company provide a variety of special telephone, customers can choose the appropriate phone according to the actual needs, when there are special needs, you can communicate with us, and customized the phone with corresponding demand, welcome to visit our website

<http://www.koontech.com> to select all phones.

Explosion-proof phone KNEX1 Firefighting phone KNZD-46 Emergency phoneKNZD-O9A



KNEX1



KNEX2



KNZD-46



KNZD-09A