OWNER'S MANUAL

INFRARED WIRELESS CONFERENCE SYSTEM

Version: REV1.0 (2016)

[Table of Contents]

Overview

The infrared conference system has all the advantages of infrared communication complete with wireless transceiver microphone units. Wireless infrared technology provides the user with greater flexible whilst configuring the system and freedom of choice when placing microphones, it guarantees conference privacy and protects the system from wiretapping and radio interference. It's the best wireless conference solutions for small-scale conferences.

1. System Configuration and description

Infrared conference system main unit, infrared transceiver unit, infrared chairman microphone, infrared delegate microphone, distributor, battery charger, etc.

1.1 System features

a. Infra-red transmission technology guarantees privacy.
b. Perfect sound quality as CD from the microphone.
c. IR communication system eliminates the need of connecting the conference units. Installation can be done quick and smart without cumbersome arrangements.
d. Fully functions (Discuss & Video tracing), support FIFO (1/2/3), Limit (1/2/3) and chairman only mode, microphones in one system up to 127 units.
e. Microphones can be operated on either their built-in rechargeable lithium-ion batteries or AC power supply. Battery life approx. 6 hours during speech and approx. 30 hours when standby.
f. Microphone LCD can display system and conference information.
g. Excellent immunity to RF interference from mobile phones and RF devices.

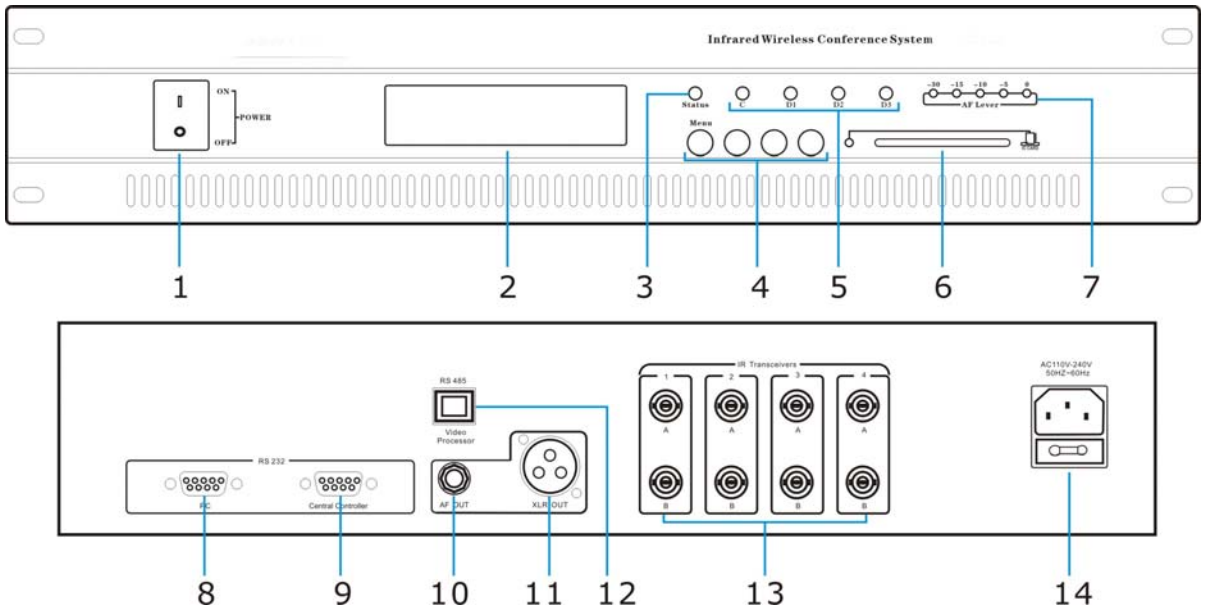
1.2 Infrared conference system main unit

1.2.1 Picture of the actual object

1.2.2 Features of infrared conference system main unit

a. Support Mode: Limit (1/2/3), FIFO (1/2/3), Chairman Only
b. Support video camera auto-track with video processor
c. 160x32 dot matrix LCD display system information
d. Two group audio output interface to support external audio system
e. Installation: 19-inch frame
f. Designed accordance to UL and CE standards
g. If main unit turn off power, microphone will shut off the power within 60 seconds.

1.2.3 Schematic diagram of Infrared conference system main unit



1) Power switch (Press I to turn on the power, power indicator is lighting, press O to turn off the power)
2) LCD (Display current mode, online microphone number, activity microphone number and ID, etc)
3) LED indicator: Data communication indicator, if main unit data communication properly, the blue LED will flashing rhythmically.
4) System menu and function key
5) Audio channel indicator (first channel for chairman mic, others for delegate)
6) Admin card interface
7) Audio Level indicator
8) RS232 data control interface---to PC
9) RS232 data control interface---to central control system
10) Audio out interface
11) XLR audio output interface
12) RS485: External video processor connection interface
13) IR transceiver connection interface A/B (1-4)
14) AC110V 50Hz-60Hz / AC220V 50Hz-60Hz

1.2.4 Parameter of infrared conference system main unit

Items	Parameter
Transmission method	Wireless infrared
Channels	4 audio+ 1 data
Carrier frequency band	4MHz-8MHz
Modulation method	FM/FSK
Receiving sensitivity	-100dBM
Output level	0dBV/+6dBV
Infrared operating distance	＞12M
Frequency response	100Hz-12KHz
S/N Ratio	＞82dB
T.H.D.	＜0.5%
Transmission consumption	0dBM
Communication rate	100KBPS
Signal covering range	Radius 100M
Power supply	AC110V 50Hz-60Hz / AC220V 50Hz-60Hz
Consumption Rating	10W
Operating temperature range	0-40 degree
Dimensions	484×377×85mm
N.W	8kg

1.3 Infrared conference system microphone unit

1.3.1 Picture of the actual object

1.3.2 Features of infrared delegate microphone

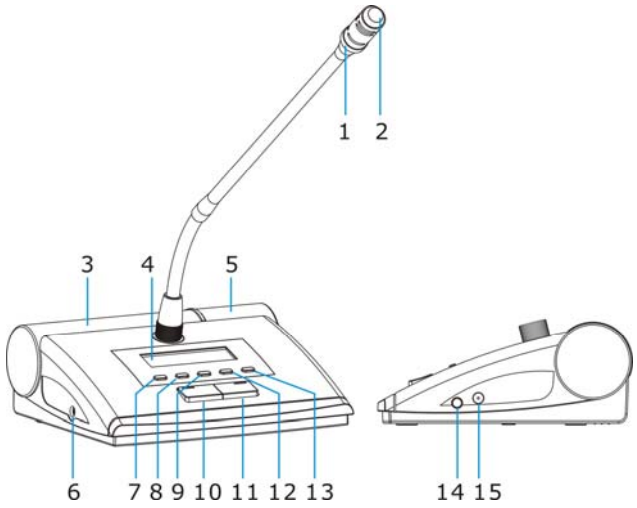
a. Newly digital design
b. Portable table moving and microphone pipe can be pull out. Extended pipe optional.
c. Electric capacity type microphone, equipped with windshield cover
d. LCD display microphone ID, signal level, battery level, microphone state, control channel, etc.
e. Equipped with microphone on/off key and indicator.

f. Equipped with 5 function keys to support microphone id/LCD contrast/Language setting and service calling function.
g. Microphone will shut off the power in 60 seconds to save battery power if system communication is error.
h. LCD will display "IR Signal Weak/Error" if the IR signal is weak when microphone working.

1.3.3 Features of infrared chairman microphone

Including the functions of the delegate unit, chairman unit has other following functions:
a. Chairman microphone can turn on any time.
b. In one system microphones just support one chairman microphone and the ID number should be 1.
c. Priority function: chairman can turn off delegate microphones any time.
d. Chairman only mode: Delegate microphone can not be turned on again after chairman microphone press priority button. The chairman need quit this mode first, and then delegate microphone can be turned on again.

1.3.4 Schematic diagram of infrared microphone



1) Annular red indicator lamp to show the microphone state.
2) Unidirectional electret MIC
3) IR transmission sensor
4) LCD display
5) IR receiving sensor
6) Earphone monitor 3.5mm jack
7) Menu/Back key: Press this key to enter menu setting or back after setting
8) Monitor volume leave -
9) Monitor volume leave +
10) MIC ON/OFF key
11) Chairman Priority
12) Service Calling function key
13) Mute function key
14) Microphone power switch
15) DC power input

1.3.5 Parameter of infrared conference system microphone unit

Items	Parameter
Transmission method	Wireless infrared
Channels	4 audio+ 1 data
Carrier frequency band	4MHz-8MHz
Modulation method	FM/FSK
Infrared radiator consumption	+10dBM
Receiving sensitivity	-100dBM
Mic sensitivity	-44dB±2dB
Frequency response	100Hz-12KHz
S/N Ratio	＞82dB
T.H.D.	＜0.5%
Reference speaking distance	10~30cm
Consumption Rating	8W
Operating temperature range	0-40 degree
Dimensions	168×145×60mm
Length of gooseneck	400mm (optional)
N.W	1.2kg (with battery)
Battery	LIP battery12V/4000MAH

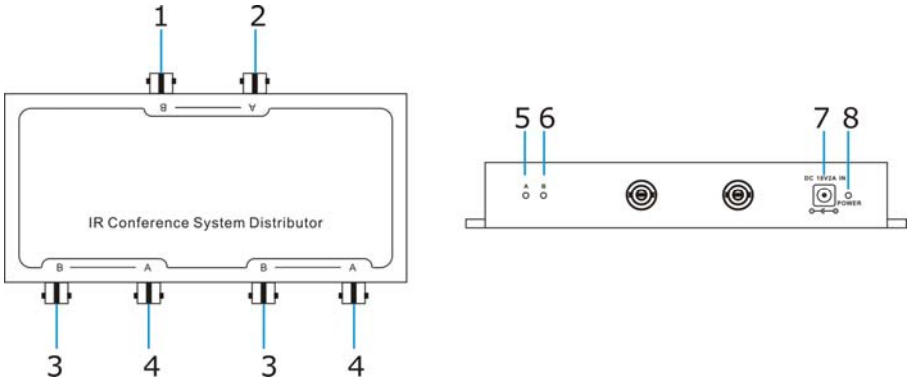
1.4 Distributor

1.4.1 Picture of the actual object

1.4.2 Features of distributor

a. Adopt impedance balancing branch connector (2 group input, 1 group output)
b. Low insertion loss computation
c. Perfect plating surface treatment with excellent shielded function

1.4.3 Schematic diagram of distributor



1) IR signal TNC terminal B: IN
2) IR signal TNC terminal A: IN
3) IR signal TNC terminal B: OUT
4) IR signal TNC terminal A: OUT
5) LED indicator for group A cable: Red
6) LED indicator for group B cable: Green
7) DC power jack
8) Power indicator LED

1.4.4 Parameter of distributor

Items	Parameter
Carrier frequency band	4MHz-8MHz
Insertion loss computation	＜1dBM
Input/Output Impedance	50Ω
Input terminal	2
Output terminal	4
Terminal type	TNC
Dimensions	80×65×20mm
Power Supply	DC12V/2A
N.W	670g

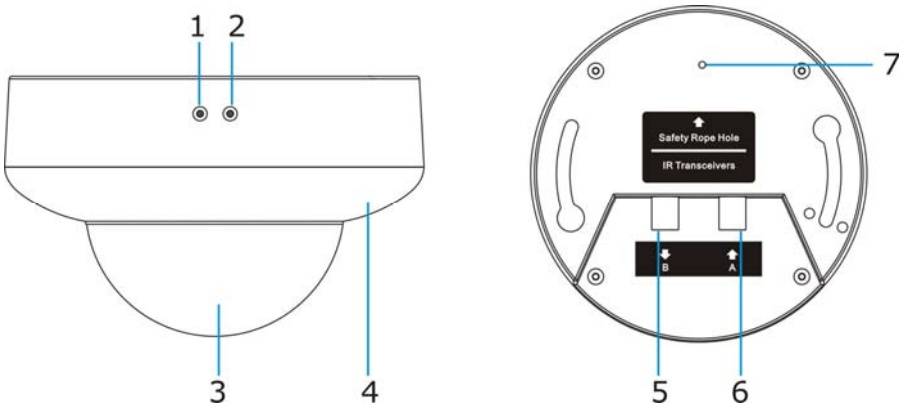
1.5 Infrared transceiver unit

1.5.1 Picture of the actual object

1.5.2 Features of transceiver unit

a. Adopt mounting hook installation, easy to install.
b. Wide-angle, transceiving range is approximately 150 degrees.
c. Signal gain more than 35dBM
d. Adopt low consumption electro circuit

1.5.3 Schematic diagram of transceiver unit



1) LED indicator for group A cable: Red
2) LED indicator for group B cable: Green
3) IR signal receiving sensor
4) IR signal transmission sensor
5) IR signal output TNC terminal B
6) IR signal input TNC terminal A
7) Safety rope hole

1.5.4 Parameter of infrared conference system transceiver unit

Items	Parameter
Carrier frequency band	4MHz-8MHz
Power supply	DC24V from Main unit
Rated current	380mA
Receiving sensitivity	-100dBM
Gain	40dBM
Input/Output Impedance	50Ω
Terminal type	TNC
Dimensions	Φ145×100mm
N.W	1.71kg

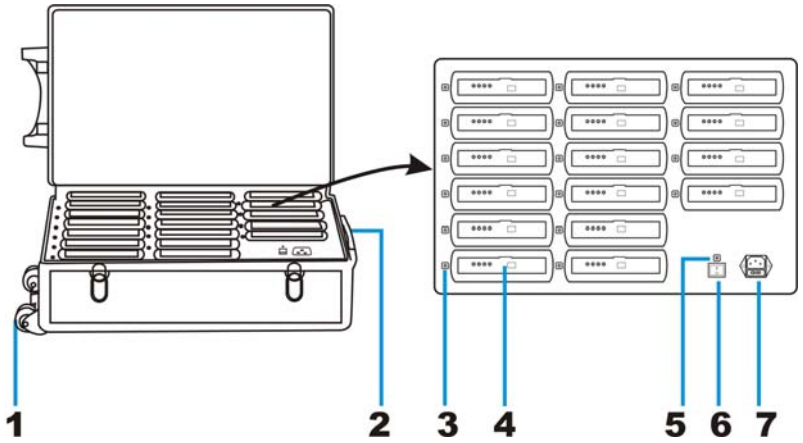
1.6 Battery charger

1.6.1 Picture of the actual object

1.6.2 Features of battery charger

a. Input Voltage: AC 110V~220V
b. Charges 10 PCS of LIP battery per charging
c. Intelligent charging management electro circuit to protect the LIP battery
d. Equipped with extendible handle and pulley, easy for moving.

1.6.3 Schematic diagram of battery charger



1) Pulley
2) Extendible handle
3) Charging status indicator LED
4) Battery holder
5) Power indicator
6) Power on/off switch
7) AC adapter jack (AC110V-220V～ 50Hz-60Hz)

1.6.4 Parameter of battery charger

Items	Parameter
Power supply	110V-240V/50Hz~60Hz
Consumption Rating	200W
Charge quantity	10
MAX charging current of each	700mA
Charging time	About 8~10 hours
Charging status	Red LED flashing –Charging, Green LED –Full
Operating temperature range	0-40 degree
Dimensions	620×370×260mm
N.W	10.74kg (without battery)

1.7 Infrared conference system LIP battery

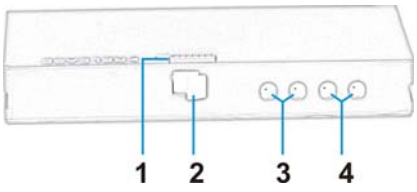
1.7.1 Picture of the actual object

1.7.2 Features of LIP battery

a. Excellent safety performance, light weight & High capacity ratio.
b. Improved safety: more resistant to overcharge; less change for electrolyte leakage.
c. High Capability: Have nearly double the capacity with half the weight of NiCad or NiMH battery packs
d. Easy to install

1.7.3 Schematic diagram of LIP battery

1) Battery detach/lock button
2) Battery locker
3) Negative
4) Positive



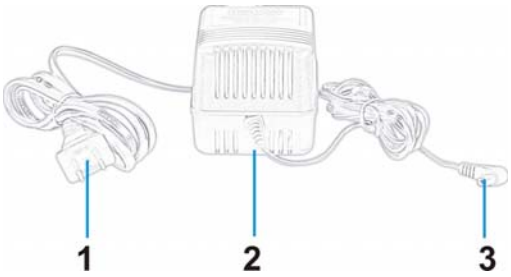
1.7.4 Parameter of LIP battery

Items	Parameter
Rated voltage	DC12V
Discharge current	＜500mA
Charging current	＜700mA
Time of speaking	＞6 hours
Time of standby	＞25 hours
Charging voltage	DC15V
Dimensions	130×75×20mm
N.W	250g

1.8 AC power adapter

1.8.1 Picture of the actual object

1.8.2 Schematic diagram of AC power adapter



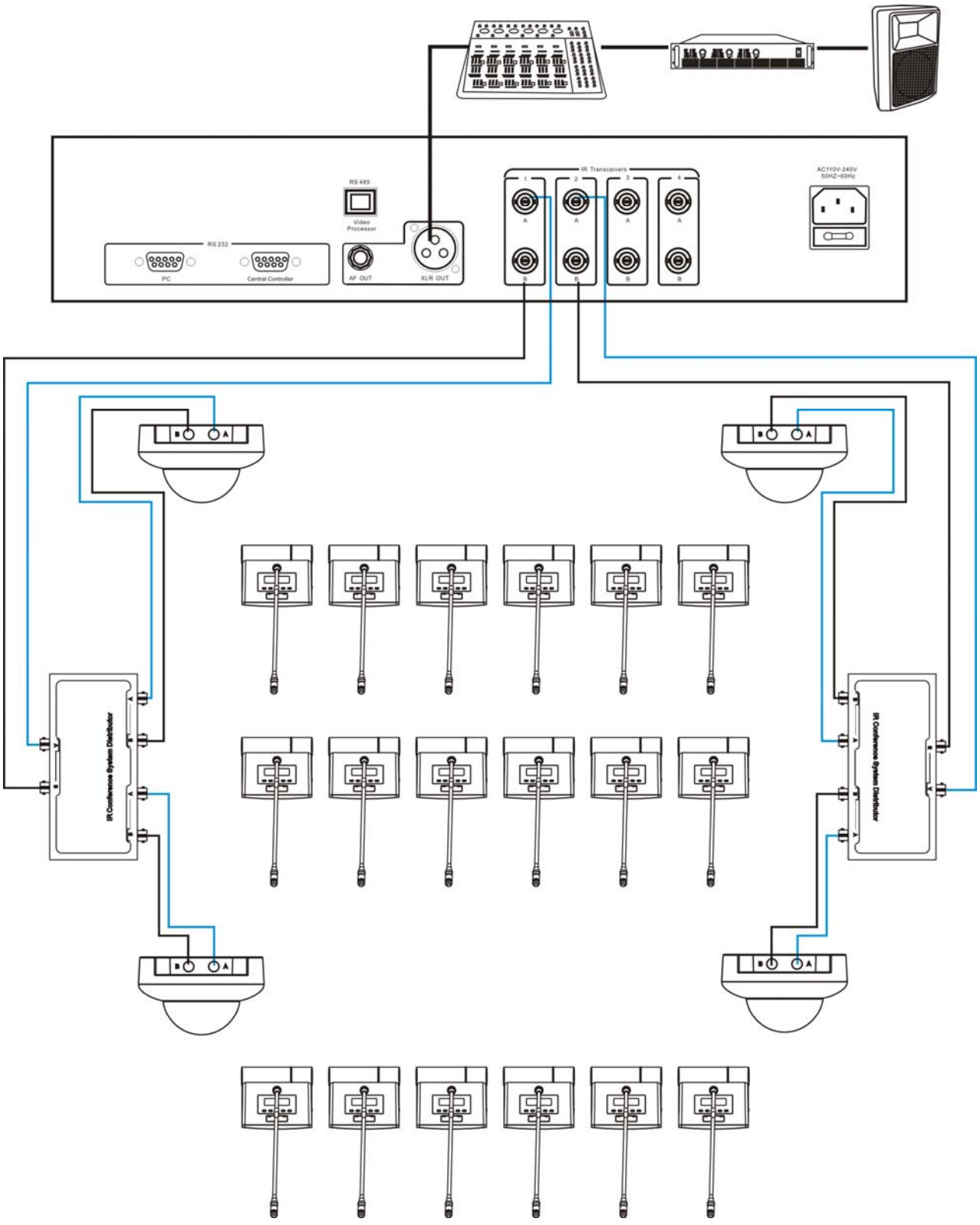
1) AC Power plug
2) Transformer
3) DC plug

1.8.3 Parameter of AC power adapter

Items	Parameter
Input voltage	AC110V/220V 50Hz~60Hz
Output voltage	DC 18V 600mA
Dimensions	98×70×55mm (only transformer)
N.W	750g

2. System installation and setting

2.1 System connection diagram



2.2 CAUTION

- If the units demonstrate any problems, such as abnormal sound, smoke, heat from or damage to power cables, disconnect the power plug from the outlet and contact your sales representative.
  If the power plug blades are distorted or discolored, do not use the unit
  (Main unit, Battery charger)
- Uncoil the power cables before use, Do not bundle the cables during use, or fie with nails. (Main unit, Battery charger)
- Do not pull on the cable. Hold the plug section and insert/remove it in a straight line, damaged cables may result in electric shock, malfunction, or fire.
  (Main unit, Battery charger)
- Do not place anything on the power cables. Do not route them under a rug or furniture.
  (Main unit, Battery charger)
- Do not cover the units with cloth or place them in locations with poor ventilation. Doing so traps heat, and may result in electric shock or fire
- If you do not use the units for long periods of time, disconnect the power plugs from the outlet
  (Main unit, Battery charger)
- Do not disassemble the units. Touching the inside of the units may result in electric shock
- Do not expose the units to any strong shock
- Do not expose the units to direct sunlight, heat from heating appliances, high temperatures, or dust
- Do not expose the units to high humidity or moisture
  Water that accidentally enters the inside of the units may result in electric shock, malfunction, or fire
- Do not touch the power cables or plugs with wet band
  (Main unit, Battery charger)
- Main unit is a class I device. Be certain to connect to an AC outlet with a protective grounding connection
- Main unit can be separated from the AC receptacle by turning off the unit by the front power switch. In case of emergency, turn off this switch or unplug the power cable from the AC receptacle

2.2.1 CAUTION on handling of the microphone unit

- Do not grasp the microphone to lift or pull on the microphone unit: pick up the unit by its base
- Slowly bend and straighten the flexible part of the microphone. Do not bend it with excessive force
- Do not drop the unit
- If you do not use the unit for long periods of time, remove the battery
- The dedicated lithium-ion battery should be used
- Do not cover the infrared section
- When the microphone units are too close together, high sound volume may cause acoustic feedback, In this case, increase the space between the conference units or

turn down the volume

- After the battery has been removed and replaced, confirm that the power LED turns off

2.2.2. CAUTION on installation

- After mounting the IR transceiver units, be certain that they are securely fastened
- Do not install the IR transceiver units or the microphone units near infrared-emitting objects such as direct sunlight, incandescent lamps, halogen lamps, inverter fluorescent lamps, or plasma displays
- Noise may be generated by interference regardless of the operating distance between the IR transceiver unit away from infrared-emitting objects
- Do not place any obstructions around the microphone units

2.2.3 CAUTION on battery charger handling

- If the charging terminal is dirty, poor contact will prevent the battery from being charged properly. Periodically clean the charging terminals
- The battery charger may become hot during charging. Use it in a well-ventilated area
- After the battery is fully charged, turn off the battery charger or remove the batteries

2.2.4 CAUTION on battery handling

- The battery is dedicated to the microphone unit. Do not use it for other applications
- Use only the designated battery charger
- If the battery leaks and the liquid contacts your skin or clothing, immediately flush with clean water
- If the battery leaks and the liquid contacts your eyes, immediately wash thoroughly with clean water and seek medical assistance
- Do not throw the battery into fire or overheat it, Doing so may result in a fire
- Do not disassemble or modify the battery
- Do not short-circuit the + and – terminals with any metal or wire. Do not carry or store the battery with metal products such as a necklace.
- If you discover battery leaks, discoloration, distortion, or the other problems, do not use the battery
- Dispose of used batteries properly as industrial waste or contact our business office in your neighborhood

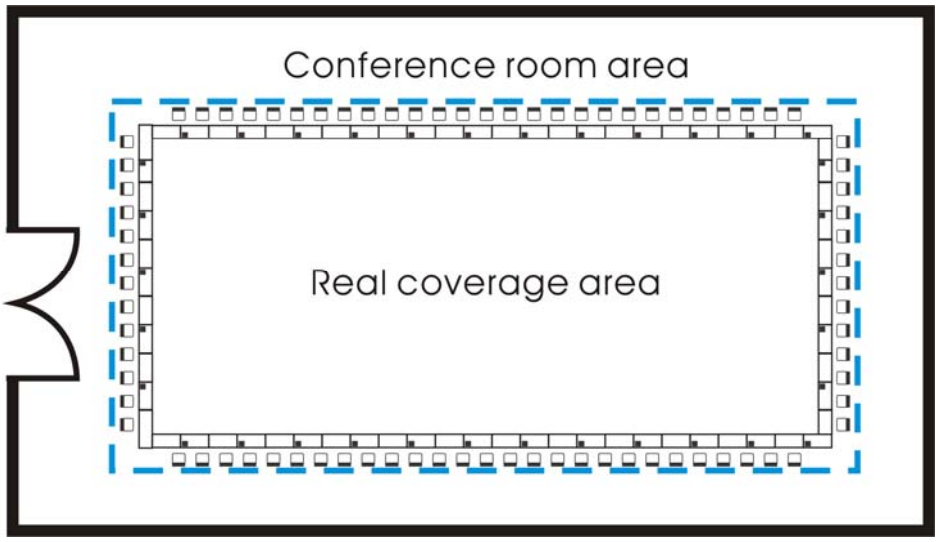
2.2.5 CAUTION on handling the AC adapter

- If the unit exhibits any problems, such as abnormal sounds and smoke, pull the power plug from the outlet and contact your sales representative
- Do not pull on the cable. Hold the plug and insert/remove it in a straight line. Damaged cables may result in electric shock, malfunction, or fire
- Do not cover the units with cloth. Doing so traps heat and may result in electric shock or fire
- Do not handle the adapter with wet hands
- If you do you use the units for long periods of time, disconnect the power plugs from the outlet

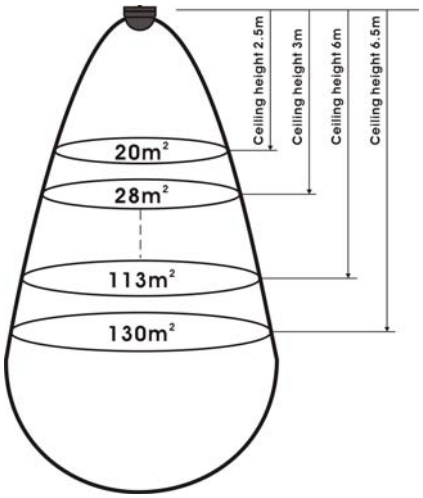
2.3 Identify room layout

2.3.1 Check coverage area

Real coverage area of conference room (usually coverage area of conference room is smaller than the conference room area)



2.3.2 The relationship between ceiling height and infrared emitting and receiving coverage area.



Ceiling height	Coverage area/transceiver unit
2.5 m	20 m^2
3 m	28 m^2
3.5 m	38 m^2
4 m	50 m^2
4.5 m	63 m^2
5 m	78 m^2
5.5 m	95 m^2
6 m	113 m^2
6.5 m	130 m^2

Note: The height mentioned about is the distance from ceiling to desk.

2.3.3 Check quantity of transceiver unit

Please check the ceiling height and coverage area of one transceiver unit with above information (2.3.2), to make sure real coverage area can receive the signal well.

Calculate formula: (A: transceiver quantity, B: Real coverage area, C: Coverage area of one transceiver unit)

$A \geqslant B/C$

Note: IR transceiver unit quantity may increase according to the actual installation place

2.3.4 System configuration.

Description	Model No.	Max Qty	Marks
IR Main Unit		1	
Chairman Microphone		1	
Delegate Microphone		≤126	
IR transceiver		≤16	2 pieces 10 meter coaxial cable
Distributor		≤12	2 pieces 5 meter coaxial cable
External Antenna		1	
Battery Charger			
LIP Battery			
AC adaptor			
Admin Card			2 pieces

2.4 Installation and connection of IR main unit

2.4.1 IR main unit installation

a. Put on the table or install in 19 inch frame

b. Please keep away from high-power and strong radiation equipment, or it may influence the equipment performance.

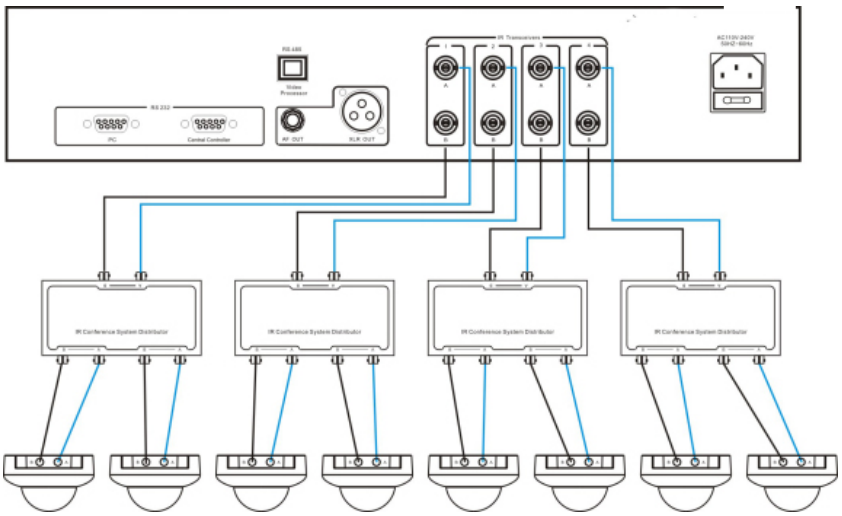
c. Use it in a well-ventilated area

2.4.2 IR main unit to IR transceiver unit

Connect two coaxial cables to the TNC terminal (transceivers A/B) of IR main unit; the other side connects to the TNC terminal of IR transceiver unit (A/B). If system install more than 4pcs IR transceiver unit, the other side should connect to TNC terminal of the distributor first, then connect the IR transceiver unit to the TNC terminal.

Please note: a. coaxial cable should be 50Ω.

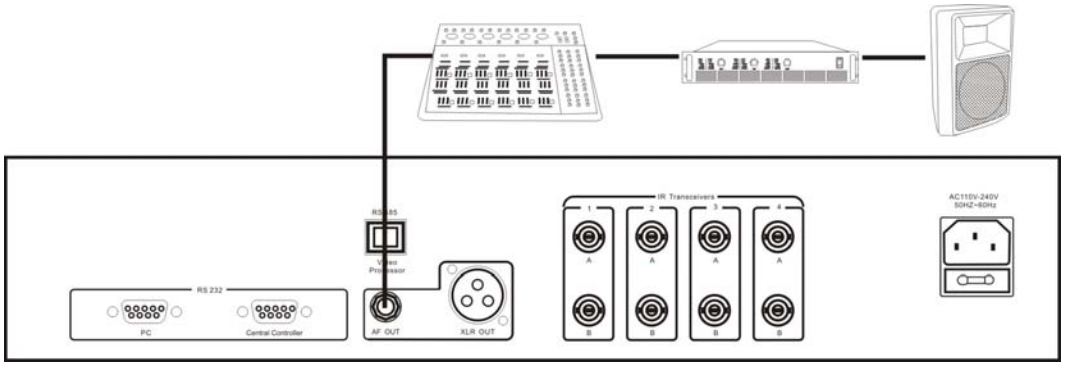
b. The TNC terminal connection interface should be same (main unit, transceiver and distributor A to A, B to B)



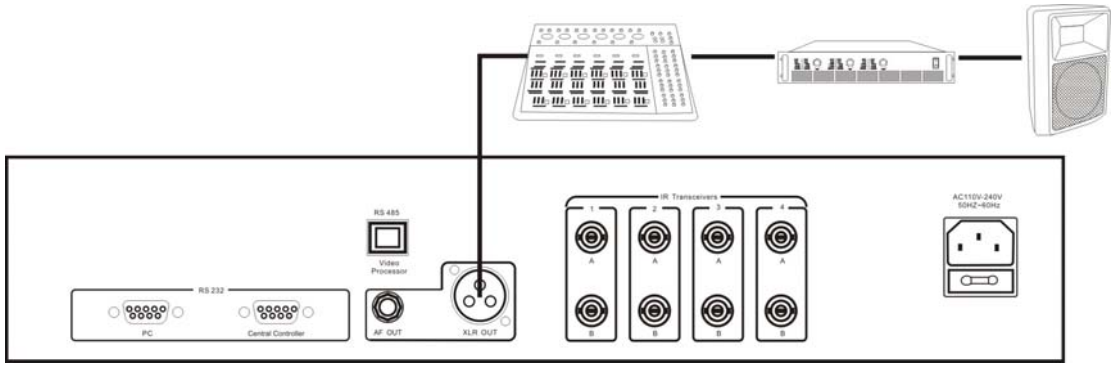
Please read 2.5 to get detailed information of IR transceiver unit installation method.

2.4.3 IR main unit to sound system

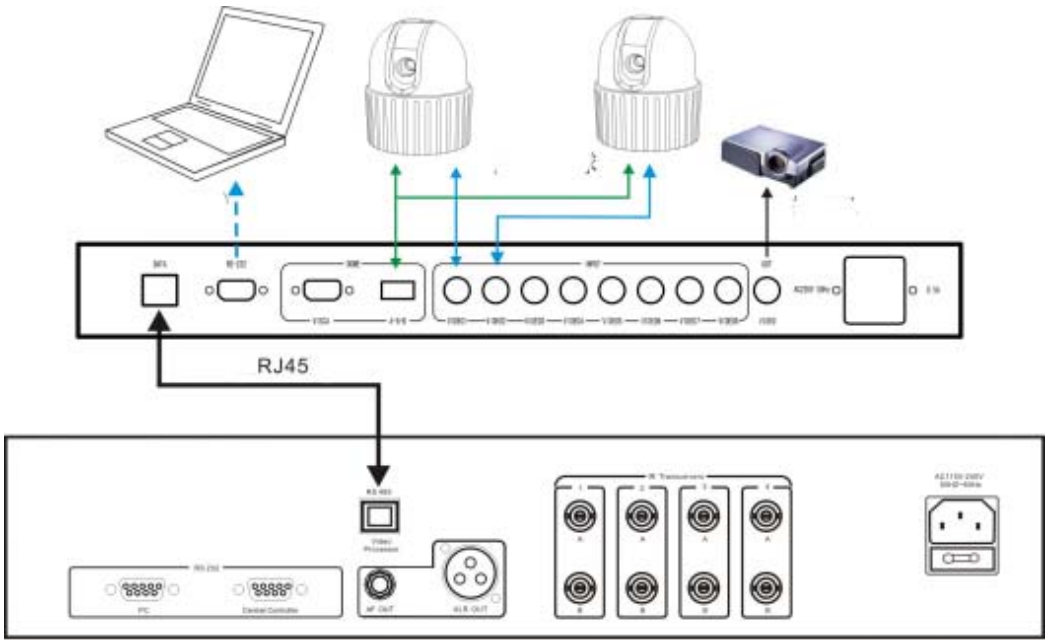
a. Mono output: Please connect AF OUT interface of IR main unit to input interface of sound equipment by Φ6.3 audio cable



b. Dual track: Please connect XLR out interface of IR main unit to input interface of sound equipment by audio cable



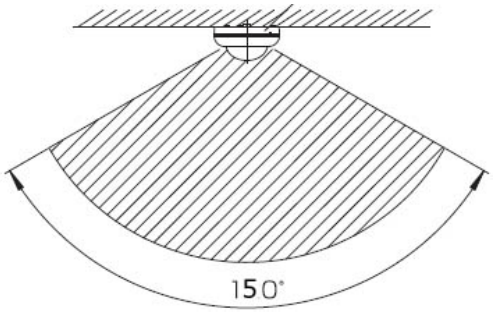
2.4.4 IR main unit to video processor

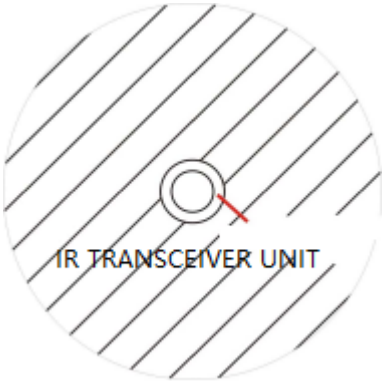


2.5 Installation of IR transceiver unit

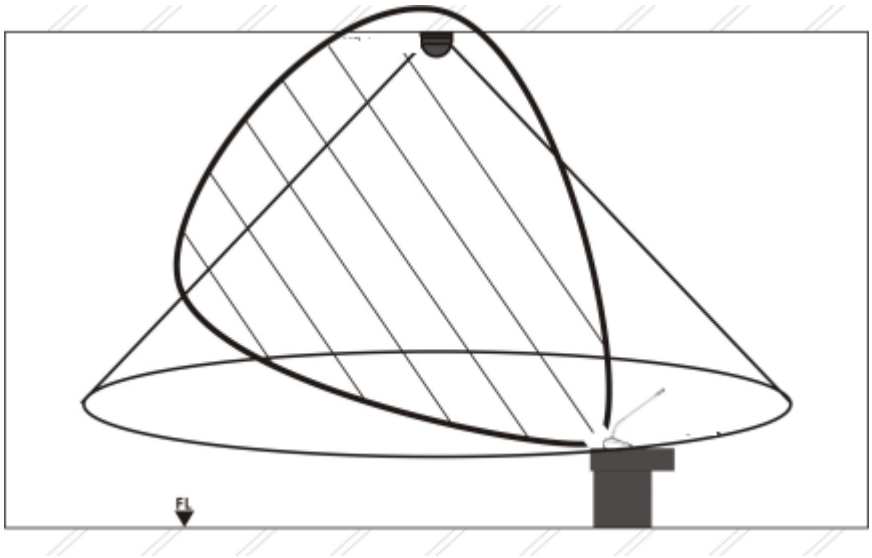
2.5.1 IR transceiver operating range

a. Infrared operating distance is approximately 10 m and the transceiving range is approximately 150 degrees.

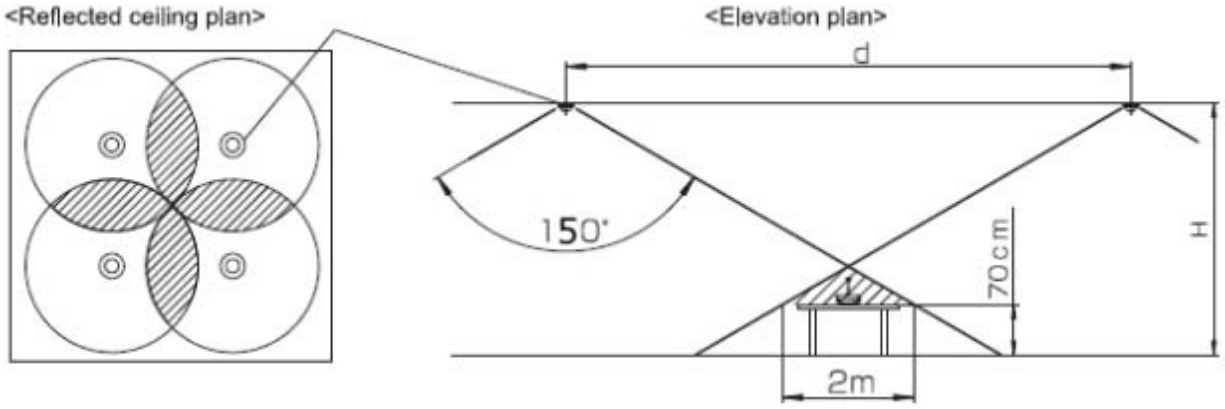




b. Infrared operating range of the IR transceiver unit and the microphone unit



c. When install IR transceiver units on ceiling

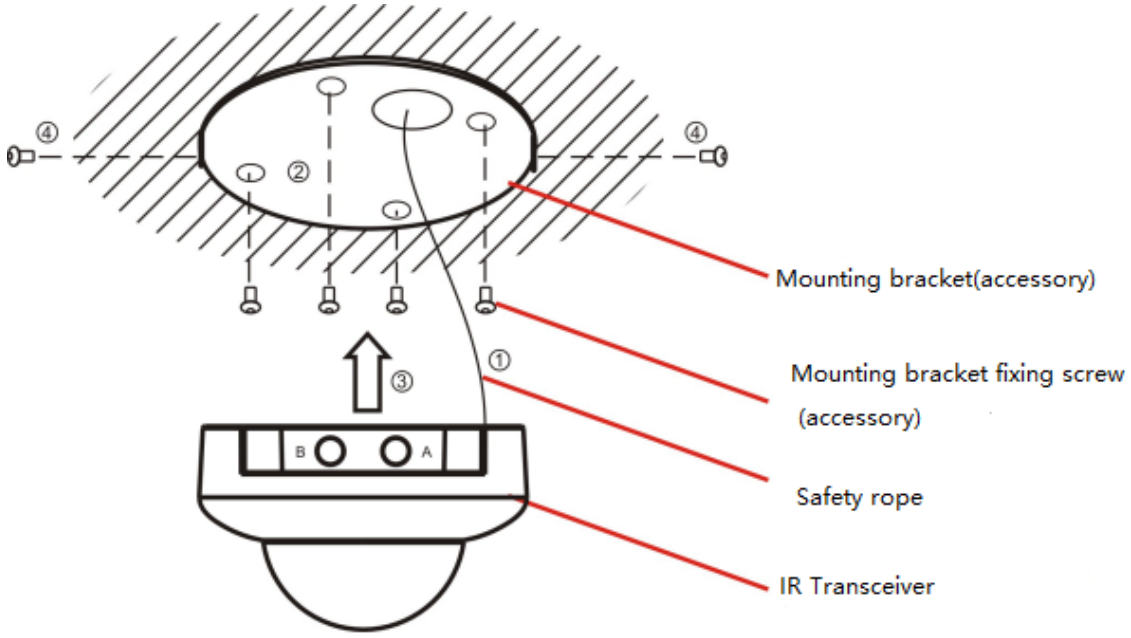


H= the height of the ceiling (M)

D= the distance between IR transceiver units (M)

Be sure to overlap the infrared operating areas by approximately 2M

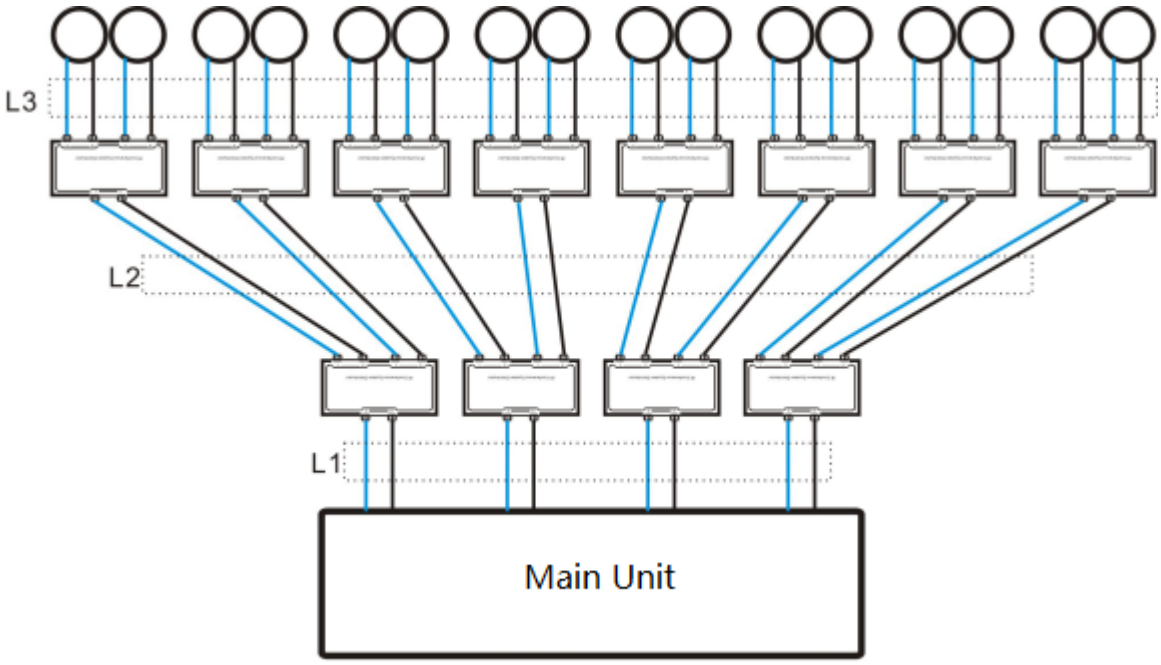
2.5.2 Installation diagram of IR transceiver unit



Checking the mounting hook position, mount the IR transceiver unit on the mounting bracket. Be sure that the IR transceiver unit is securely fastened.

2.5.3 Wiring between IR transceiver unit and main unit when using distributors

If the IR signals of each IR transceiver unit are not in the same phase, the transceiving level may decrease. To match the signal phase, the length of the corresponding cables and should be the same; main unit and distributor terminals can not be vacant. The main unit can support 16 pcs transceivers maximum

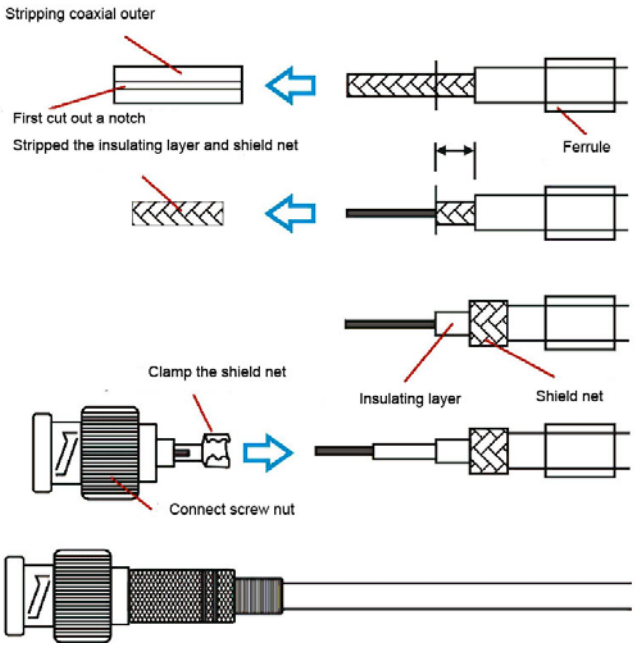


Cable length to the IR transceiver unit L4=L2+L3+L4
Difference in length among L4, L2+L3+L1 should be within +/-2 meters

Distance from IR transceiver unit to IR main unit should be less than 100 meters or more than 2 meters L4=L2+L3+L1≤100M L4=L1+L2+L3≥2M

*** TNC connector installation method**

Because the interconnection coaxial cable (50Ω) of IR transceiver unit is used for transmit IR signal and IR transceiver power (DC12V), please make sure the circuit not shorted between IR signal and power when install the IR transceiver, or it will burned out the fuse (0.5A) of IR transceiver unit on the rear panel of IR main unit.



a .Please stripping the coaxial cable (50Ω) outer, shield net and insulating layer with above sketch map
b .Insert the wire and connect to the center pin, soldering it
c . Insert the shield net and insulating layer to screw nut connector.
d .Connect ferrule to the screw nut connector's anti-shedding position
e. Fasten it with plier

2.5.4 Caution item

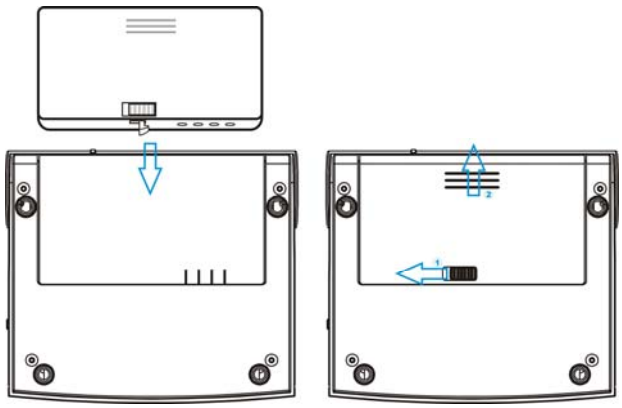
a. Infrared operating distance varies depending on the color of the ceiling and walls.
b. Noise may be generated by interference regardless of the operating distance between the IR transceiver unit and the microphone unit; in this case, move transceiver unit away from infrared-emitting objects.
c. Do not place any obstructions around the microphone units.
d. Block direct sunlight from the unit using curtains or blinds.
e. When installing the IR transceiver units on the ceiling, install the units at least 2 to 3 meters away from the windows or the wall.
f. Install the IR transceiver units more than 50cm from fluorescent lamps.
g. In addition, if the IR transceiver units are installed near the infrared-emitting sources

list below, the system may malfunction or noise may be generated. When installing the IR transceiver units, and the microphone units, take care to avoid placing them near the following infrared-emitting and noise sources:

- Lighting equipment
- Projector (liquid crystal, DLP), OHP, incandescent bulbs
- Mercury lamp, halogen lamps, and inverter fluorescent lamps
- Plasma displays
- Infrared devices such as the remote control, infrared microphones and infrared LAN
- Dimmer controls
- Digital equipment like the digital power amplifier and cable wiring to this.(such as speaker output wiring of the digital power amplifier)
- Up to 16 IR transceiver units can be installed of 1 main unit, each channel can support 4 pieces transceivers (total 4 channels)

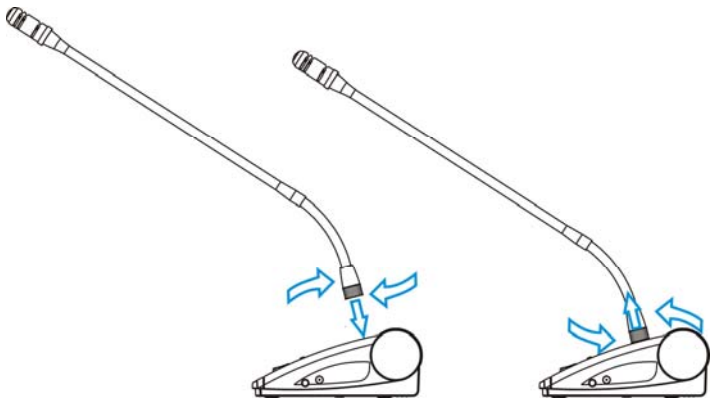
2.6 Installation of IR microphone unit

2.6.1 Mounting and dismounting the battery



a. Mounting battery: Put the battery on the bottom side of the microphone unit; insert the battery in the direction of the arrow to fasten it.
   *Listen for the click sound and make sure the battery is securely inserted.
b. Dismount battery: Press the battery detach/lock button in the direction of the arrow and take it out by press on the battery detach/lock button.
c.

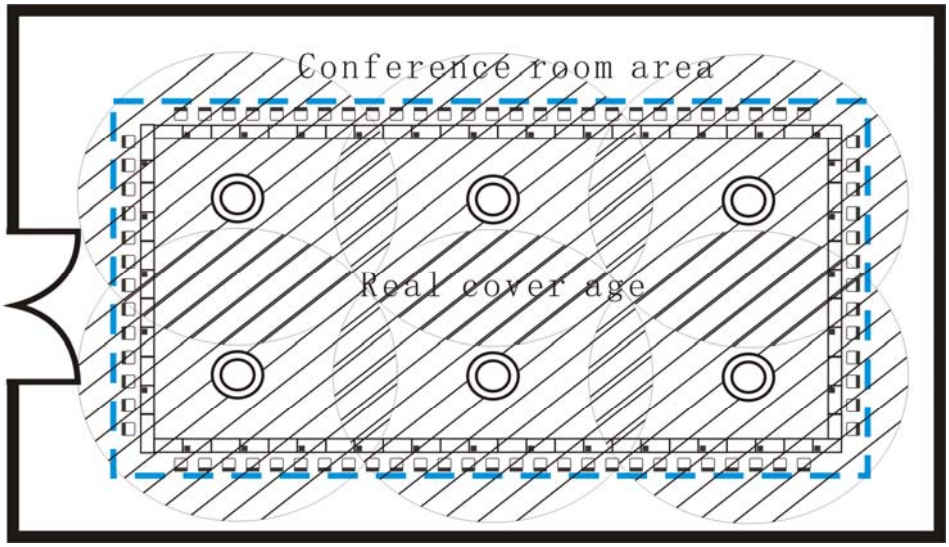
2.6.2 Mounting and dismounting the microphone



a. Mounting microphone: Insert the microphone into the microphone mounting socket in a straight line, and then rotate the microphone clockwise to fasten it securely.
b. Dismounting microphone: Rotate the microphone counterclockwise, then pull the microphone upward to dismounting

2.6.3 Examples of square arrangements

Example:
Conference room area: 30x20=600 m^2
Real coverage area: 25×15=375 m^2
Height of the ceiling: 4.5 m
Minimum quantity of transceivers: A≥B/C (see 2.3.3) 400/63≈6 pieces

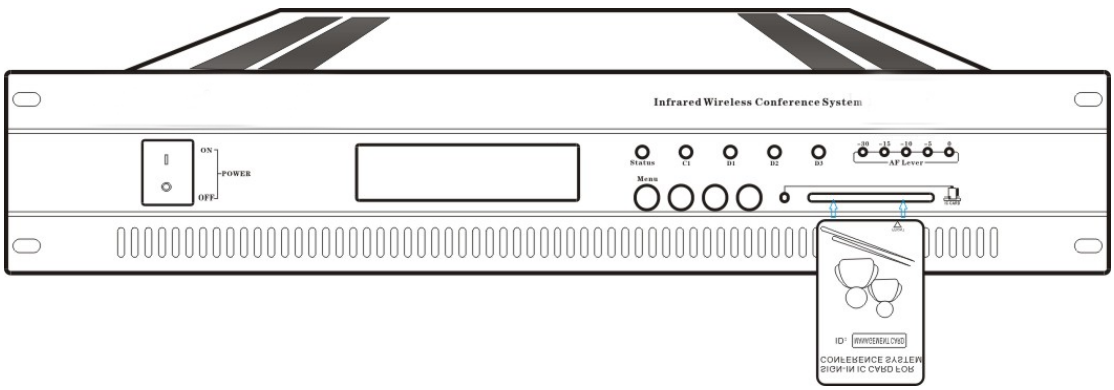


* Please contact us if you need more detailed information during your installation.

2.7 System setting

2.7.1 Main unit setting

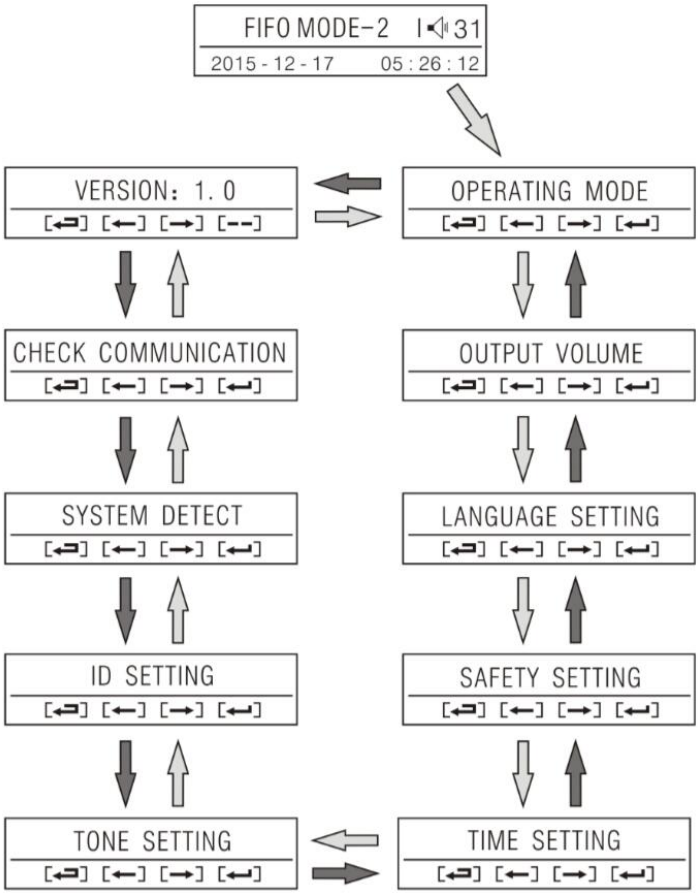
Please insert Admin card to the main unit before setting (Default setting is the system must set with admin card), or user can not change the setting of main unit.



There are four function keys on main unit, following is the system setting interface

a. System mode setting:

System support six modes setting by main unit (FIFO MODE- 1, FIFO MODE-2, FIFO MODE-3, LIMIT MODE-1, LIMIT MODE- 2, LIMIT MODE-3), user can set these mode by setting keys.



- **LIMIT MODE-1:** System only allowed 1 piece delegate microphone turned on at the same time, if other delegate microphones want turn on, user should turn off that microphone first.

- **LIMIT MODE-2:** System only allowed 2 pieces delegate microphones turned on at the same time, if other delegate microphones want turn on, user should turn off 1 or 2 microphones first.

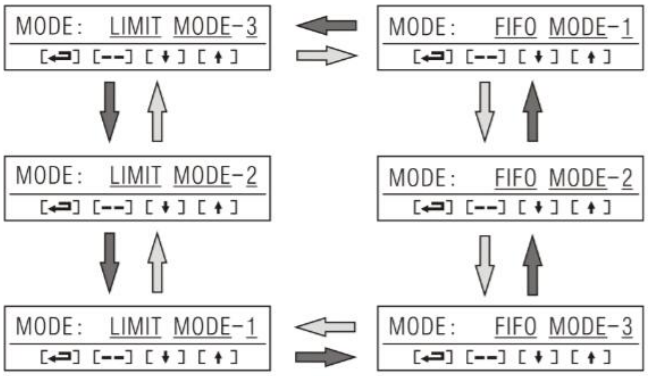
- **LIMIT MODE-3:** System only allowed 3 pieces delegate microphones turned on at the same time, if other delegate microphones want turn on, user should turn off 1, 2 or 3 microphones first.

- **FIFO MODE-1:** System only allowed 1 piece delegate microphones turned on at the same time, if other delegate microphone turns on, system will turn off the first on microphone automatically. First in, first out, first indicate, first offer.

- **FIFO MODE-2:** System only allowed 2 piece delegate microphones turned on at the same time, if other delegate microphone turns on, system will turn off the first on microphone automatically.

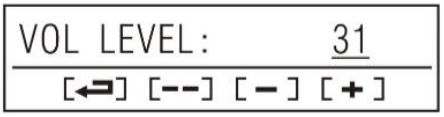
- **FIFO MODE-3:** System only allowed 3 piece delegate microphones turned on at the same time, if other delegate microphone turns on, system will turn off the first on microphone automatically.

➢ Please note: Chairman microphone is not limit in these mode, chairman microphone can be turned on and off independently. When press chairman microphone priority key, it will turn off all delegate microphones and these delegate microphones can not be turned on again The chairman need to press on/off key again to quit this mode first, and then delegate microphone can be turned on again.

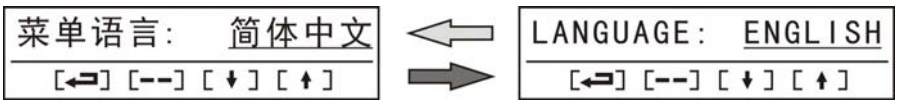


Method to setting the mode: FIFO 1/2/3,LIMIT 1/2/3
Press " Menu" key switch to mode setting interface, and then press "Enter" key to enter system mode selecting interface. Press (🡻) or（🡹）to select the mode: FIFO MODE-1, FIFO MODE-2, FIFO MODE-3, LIMIT MODE-1, LIMIT MODE-2,LIMIT MODE-3, press "Menu" key to back, system will exit and save the current setting automatically.

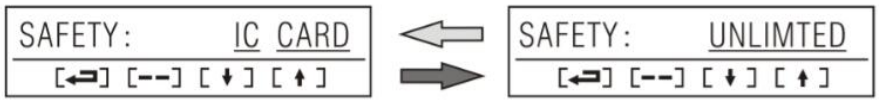
b. Volume setting: User can set the system output volume level to match different audio equipment, output level from 1-31 (default level is 31)
Method to setting the volume level: Press " Menu" key, and press key (⟶) one time switch to output volume level setting interface, and then press key ⟵ to enter level setting, press (-) or (+) to set the level, and press "Menu" key to back, system will exit and save the current setting automatically.



c. Language Setting: User can set system LCD language (Chinese and English)
Method to setting the language:Press " Menu" key, and press key (⟶) two times switch to language setting interface, and then press key ⟵ to enter language setting, press (🡻) or (🡻) to select the language, and press "Menu" key to back, system will exit and save the current setting automatically.

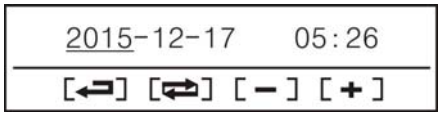


d. Safety Setting: User can select the system safety mode (IC CARD or UNLIMITED). If select IC card, user must use Admin card to setting the main unit, or he/she can not use setting function. And LCD will display" Please insert IC card". If select "No Limit", user can set the system function without Admin card. (Default setting is IC CARD")
Method to of safety setting:Press " Menu" key, and press key (→) three times switch to safety setting interface, and then press key ↵ to enter safety setting, press (↓) or (↑) to select the mode, and press "Menu" key to back, system will exit and save the current setting automatically

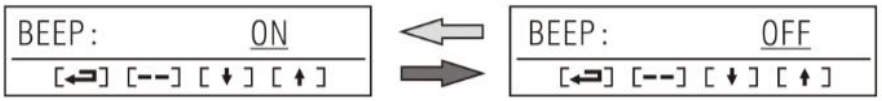


e. System Time setting: the time can be displayed one main unit and microphone LCD.

Display mode: xxxx(year)-xx(month)-xx(day), xx (hour):xx (minute)
Method to setting the system time:Press " Menu" key, and press key (→) four times switch to time setting interface, and then press key ↵ to enter time setting, press (⇄), (↓) or (↑) to select , and press "Menu" key to back, system will exit and save the current setting automatically



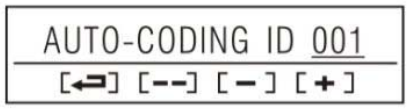
f. Tone setting: There is a warning chime if user open tone setting. Such as operate without Admin card, microphone battery low and service call.
Method to setting the tone:Press " Menu" key, and press key (→) five times switch to tone setting interface, and then press key ↵ to enter tone setting, press (↓) or (↑) to select , and press "Menu" key to back, system will exit and save the current setting automatically



g. MIC ID setting: System Mic ID number should be set from [001] to [127]
[Example] If you have 50 units, their ID numbers should be set from [001] to [050], if any units have the same ID number, the system will not work properly. ID number of chairman microphone should be [001], one system only allowed one piece chairman microphone
Method to setting mic id:
Option 1:Press " Menu" key, and press key (→) six times switch to ID setting interface, and then press key ↵ to enter AUTO-CODING, press (-) or (+)

to select the first ID which will start, then main unit send the ID coding information to microphone, all microphone OLED display will show " ID SETTING: 001?", press key ↵ on that microphone if u confirm the ID, and then this microphone OLED display will show "ID=001" and main unit will auto-generate the next ID number, the rest of mic OLED display will show the new ID "ID SETTING: 002?" , press key ↵ on that microphone if u confirm the ID, please finish all microphone ID setting step by step and press "Menu/BACK" key to back, system will exit and save the current setting automatically.

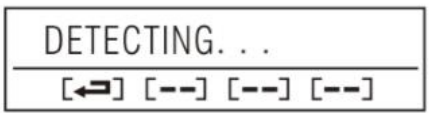
Option 2: Turn off microphone power first, hold and press " Menu" key and then turn on the microphone power, microphone OLED display will show ID setting interface, please use key (↓) or (↑) to select the ID and exit by key "MENU/BACK"



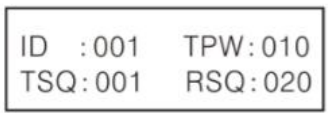
Main unit display

Microphone display

h. System detecting: User can set the best microphone position with the help of this mode
Method to setting:Press " Menu" key, and press key (→) seven times switch to system setting interface, and then press key ↵ to enter, please turn on the microphone when you debug the microphone position. TSQ (Microphone transmission signal) and RSQ (microphone receiving signal) can not be 0, the number is bigger, the mic position is better, TPW is the microphone current TX power, system will debug the TX power according to the transmission signal level automatically to optimize the communication, Automatic adjustment level is 10dB.



Main unit display



Microphone Display

i. Communication checking: User can detect the data communication between main unit and microphone with the microphone ID number.
Method to checking:Press " Menu" key, and press key (→) eight times switch to system communication checking interface, and then press key ↵ to enter, press (-) or (+) to select the first ID, if the main unit numerical value of data same as microphone numerical value (001-015 circulatory), without any break, it means the communication between main unit and microphone is good.

Main unit display

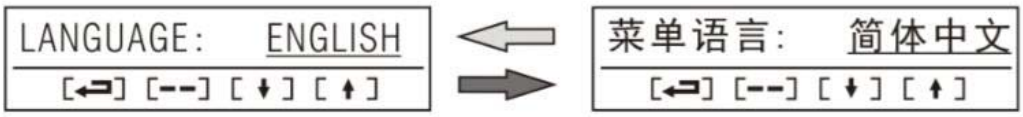
Microphone Display

j. System Version: User can check the system version by press " Menu" key, and press key (⟶) nine times switch to system version interface

2.7.2 Microphone parameter setting

There are five function keys on microphone" MENU/BACK, VOL -, VOL +, CALL, MUTE", and in menu interface will change to "BACK, LEFT, RIGHT, UP, DOWN".

a. Language Setting: The microphone OLED display support Chinese and English language
Method to setting: Press "MENU/BACK" key to enter language setting interface, user can select the language with function key " ▼ or ▲ ", and then press the key "BACK", microphone will save the setting and exit automatically.



b.Version: User can check the system version by press " Menu" key, and press key ◀ or ▶ switch to this version interface.

c. Volume output level: User can set microphone output volume level with the key "VOL - and VOL +" (total 31 levels, default is level 31), system will save the setting and exit in 5 seconds automatically.

d: Call: User can press the key :CALL" to send service call command to main unit if main unit open tone function (BEEP ON), main unit will give the warning tone when receive the command, the warning tone will off if operator press the menu key on main unit. The microphone will back to main interface when send the command sent successful. Please note this function is not available when microphone is on.

Microphone display

Main unit display

e. Mute function: User can cut the microphone speaking with mute key when microphone is on, and microphone will back to speaking state when release this key.

2.7.3 Video camera tracking function

Regarding the video camera tracking function, please read the video processor manual.

3. How to use this system

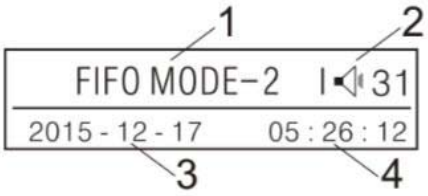
3.1 How to use the main unit

3.1.1 Powered on/off the main unit

Powered on the main unit: Please connect the power cable and turn on the transmitter with power switch, main unit LCD will lighting, system will self-detect and enter the main interface.

Powered off the main unit: Please turn off the main unit with power switch, main unit LCD will off.

3.1.2 Main unit LCD display



1) Current system working mode
2) Current output volume level
3) Current date
4) Current time

3.1.3 Panel indicator

1) Status indicator (Blue)
   a. The indicator will light if there has signal from microphone to main unit
   b. If the microphone battery low (less than 10%), this indicator will flash.
   c. If main unit receive the call service command from microphone, this indicator will light till press menu key to release.

2) Channel indicator (C1, D1, D2, D3, red/yellow): this indicator can show the current microphone working channel, if the communication between microphone and main unit is normal, LED will display yellow color, if the communication is error, the LED will display red color.

3) AF Level: this LED will display current speaking audio level

3.1.4 Warning

1) When microphone press key "CALL" to send call service command , main unit LCD will show the message (see following pic) and will give warning tone if main unit open "BEEP" function, the warning tone will send 1 time in every 10 second till operator press menu key to release.

2) If microphone battery capacity is low (less than 10%), main unit LCD will show the message (see following pic) and give a warning tone till operator press menu key to release.

3.2 How to use the microphone

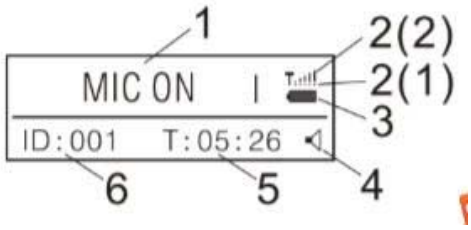
3.2.1 Powered on/off the microphone

Powered on the microphone: Please turn on the microphone with power switch (hold and press 1 second), microphone OLED display will lighting and show welcome interface.

Powered off the microphone: Please turn off the microphone with power switch (hold and press 5 seconds), microphone OLED display will off.

- User can turn off the main unit first, this time there is no signal and data communicate between main unit and microphone, after 15 seconds microphone OLED display will show the message " Auto-off in 60 seconds"

3.2.2 Microphone OLED display



1. Display microphone current status

a. MIC ON: Microphone on, user can speaking

b. MIC OFF: Microphone off,the microphone can not pick up sound

c. SIGNAL ERR: Microphone can not receive data from main unit by transceiver

d. RESTRICTED: It means system active microphone already achieve the maximum quantity (maximum active microphone quantity set by main unit)

e. C. Only: Delegate microphone can not be turned on again after chairman microphone press priority button. The chairman need quit this mode first, and then delegate microphone can be turned on again.

2 (1) Data signal level

T :Data communication not established or signal disconnect
T.. :Data signal very weak
T... :Data signal weak
T.... :Data signal strong
T..... :Data signal very strong

2 (2) Audio signal level

T..... :Audio communication not established or signal disconnect
T:!... :Audio signal very weak
T:!!.. :Audio signal weak
T:!!!. :Audio signal strong
T:!!!! :Audio signal very strong

3. Li-polymer battery capacity status

 =Battery capacity full.
 =Battery capacity about 60%
 =Battery capacity about 30%
 =Battery capacity less than 10%, please charge the battery
 =Battery charged by DC power and microphone was powered by external DC power
 = Battery full, microphone was powered by external DC power.

- If  and  icon alternately flashes, it means the Li-polymer battery is in abnormal state, please check the mic microphone use correct battery or the battery contact plate is good.

4. Monitor

User can monitoring other speakers when insert headphone and OLED display will show  icon.

5. Time

Microphone OLED display will show the current time (synchronization with the main unit)

6.ID display

The ID number in one system must be unique.

3.2.3 Turn on / off the microphone

User can turn on/off the microphone with on/off key, chairman microphone has one more function key"PRIROITY" (please read 2.7.1-a and 3.2.2-1-e). Chairman microphone ID must be 1.

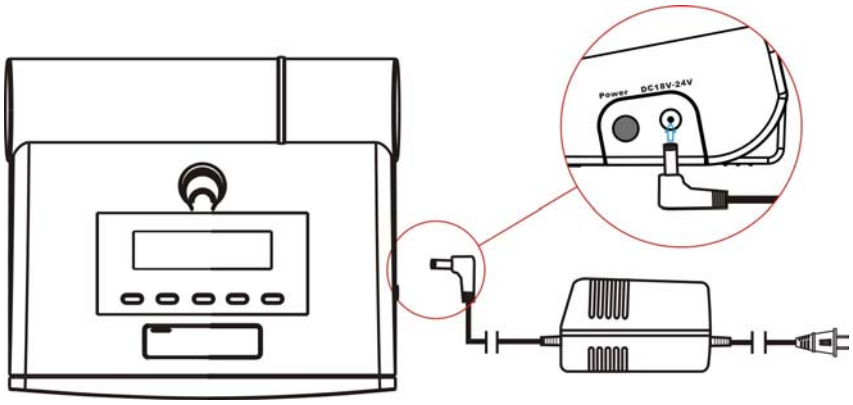
- When microphone transmit (audio) signal disconnect, yellow LED will change to red

color on the main unit, if the transmit signal disconnect time up to 15 seconds, system will turn off this microphone, red LED on the main unit will off, if the transmit signal connect again before turned off, system will cut the microphone audio out (MUTE) first and then reload the audio signal again, red LED will change to yellow again.

- When microphone receiving (data) signal disconnect, microphone OLED display will show " SIGNAL ERR", yellow LED will change to red color on the main unit, if the receiving signal disconnect time up to 15 seconds, system will turn off this microphone, and microphone will be powered off after 60 seconds if the communication still disconnect, red LED on the main unit will off, if the receiving signal connect again before microphone turned off, system will cut the microphone audio out (MUTE) first and then reload the audio signal again, red LED will change to yellow again.
- When battery capacity is not enough to powered the microphone, microphone will turn off first and then powered off automatically to protect the battery. Microphone OLED display will show" Battery Low, auto-off in XX seconds".

3.3 Charge the battery by DC power adapter

User can use DC power adapter to charge the battery directly with microphone,DC power adapter can charge the battery and supply power to microphone at the same time.

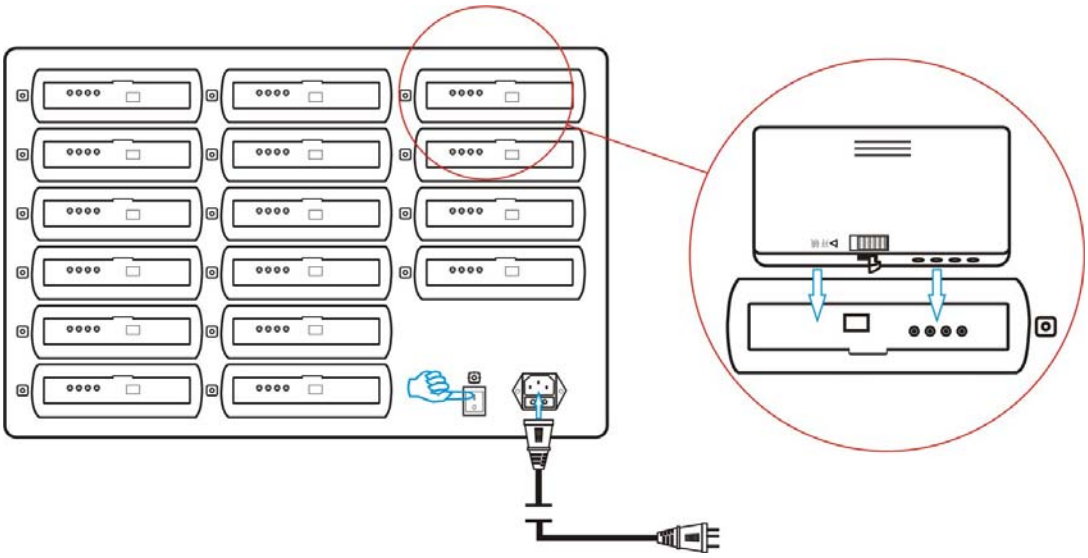


3.4 Charge the battery by charge box

The charging units can recharge up to 16 pieces battery at one. The charging unit contains the power supply with automatic voltage selection. The charging electronics and a charging indicator LED are integrated in each battery. The charging circuitry checks if a battery pack is present and controls the charging process.

Ensure that the charging unit is connected to the power and that it is switched on. Place the battery firmly in the charging compartments. The charging indicator should illuminate. The indicator show the charging status of each battery:

Red LED flashing –Charging in progress; Green LED –Full Charged



Notice!

- It is preferred to switch on the charging unit before inserting the battery. Battery can be inserted or removed without damage while the charging unit is switched on.
- Charge the batteries to full capacity before using them for the first time.
- Continuously charging the racier will not damage the batteries. Batteries can therefore safely be left in their charging positions when they are not used in one month.

4 Troubleshooting

Situation	Check	Solutions
The microphone unit can not powered on.	★ Battery capacity is low	★ The batteries must be charged before initial use ★ Charge before use ★ Use DC power adapter to supply the power directly to microphone
The main unit can not powered on.	★ Is power plug inserted into the outlet? ★ Fuse burned out	★ Insert power plug into the outlet ★ Change fuse
Microphone LCD display ”SIGNAL ERROR”; the button on the microphone unit do not work.	★ Is the correct ID number set ★ Is the unit exposed to sunlight or spot lights ★ Is there any obstruction between the microphone unit and the IR transceiver unit? ★ Is the power LED illuminated on transceiver unit? ★ Is the power LED illuminated on transceiver unit? ★ Distance from microphone to transceiver more than 12 meters	★ Set the correct ID number from [001] to [127] ★ Install it and avoid exposure to sunlight or spotlights. ★ Install them so that they can see each other directly. ★ Refer to the installation diagram. Use them within the operating range. ★ Connect the cable between the main unit and the IR transceiver units properly.
Operating time of the microphone unit battery is short.		★ The battery is dying (*1) ★ Purchase a new battery
The microphone unit battery can not be charged. ★ The charging lamp does not light ★ The charging lamp is flashing ★ Charging does not complete after 12 hours	★ Are the charging terminals dirty? ★ Has the battery been left for a long time after charging? ★ Can other batteries be charged?	★ Clean the charging terminals ★ Use the battery and then charge it again. (*2) ★ Replace it with new one

*1. The battery life is usually approximately 300 charge cycles.

*2. If the battery power supply less than 7V, the charge function of battery will not active with the charge box, please charge the battery with microphone directly by DC power adapter about 5 minutes in order to active the battery again, then the battery can charge with charging box again.

*3. If system warning that battery capacity is low, user should turn off that mic and charge the battery.

*4. Take out the battery if the microphone will not use for a long time.