

# INSTRUCTION MANUAL

## 2.4G Wireless Conference System



## IMPORTANT SAFETY INSTRUCTIONS



**CAUTION:** To reduce the risk of electric shock do not remove cover (or back panel). No user serviceable parts inside. Refer servicing to qualified personnel only.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user of the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance. Please carefully read the owner's manual.

## INSTRUCTIONS:

All safety and operating instructions should be read before the product is operated.

### **Retain these instructions:**

All safety and operating instructions should be retained for future reference.

This owner's manual should be considered as a part of the product, it must accompany it at all times, and it needs to be delivered to the new user when this product is sold. In this way the new owner will be aware of all the installation, operating and safety instructions.

### **Heed all warnings:**

All warnings on the product and in owner's manual should be adhered to.

Heed all warnings.

### **Follow all instructions:**

All operating and user's instructions must be followed.

Sentences preceded by  symbol contain important safety instruction. Please read it carefully.

## DETAILED SAFETY INSTRUCTIONS.

### **Water and moisture:**

This apparatus should not be used near water (i.e. bathtub, kitchen sink, swimming pools, etc.)

### **Ventilation:**

This apparatus should be placed in a position that doesn't interfere with its correct ventilation. This unit, for example, should not be placed on a bed, sofa cover or similar surfaces that could cover ventilation openings, or placed in a built-in installation, such a bookcase or a cabinet that could block air flow through ventilation openings.

### **Heat:**

This apparatus should be placed away from sources of heat, like radiators, heat registers, stoves or other products (including amplifiers) that produce heat.

### **Power sources:**

- This apparatus should only be connected to a power source of type specified in this owner's manual or on the unit.
- If the supplied AC power cable plug is different from wall socket, please contact an electrician to change the AC power plug.

**Grounding or Polarization:**

- All precautions must be observed in order to avoid defeating grounding or polarization.
- Unit metal parts are grounded through the AC power cord.
- If the AC power outlet doesn't have grounding, consult an electrician for outlet grounding.

**Power cable protection:**

The power cable should be routed in such a way that it will not be walked on or pinched by items placed upon or against it, paying particular attention to cables at their connections, receptacles and wall outlet.

**Cleaning:**

- You can clean the exterior of the unit with compressed air or a damp cloth.
- Don't clean the unit using solvents like trichloroethylene, thinners, alcohol, or other volatile or flammable fluids.

**Non use periods:**

The unit AC power cable should be unplugged from the outlet if it's unused for long periods.

**Objects or liquid entry into the unit:**

Be careful that no objects fall into the unit or that no liquid is spilled inside the unit through ventilation openings.

**Safe power line use:**

- Hold the plug and the wall outlet firmly while disconnecting the unit from AC power.
- When the unit will not be used for a long period of time, please unplug the power cord from AC power outlet.
- To avoid power cable damage, don't strain the AC power cable and don't bundle it.
- In order to avoid damage to the unit's power cable, be sure that the power cable is not walked on or pinched by heavy objects.

**Unit relocation:**

Before relocating the unit, please control the unit is turned off. The power cord must be unplugged from the wall outlet, and all the connecting cables should be disconnected as well.

**Do not open this unit:**

Do not attempt to open or repair this unit yourself. For any problem not described in this owner's manual, please refer to qualified personnel only or consult us or your National Distributor. Any improper operation could result in fire or electric shock.

**Damages requiring services:**

- Do not attempt to perform operations not described in this user's manual.
- In the following cases please refer to an authorized service center or skilled personnel:
  - When the unit works improperly, or it doesn't work at all.
  - If power cord or plug is damaged.
  - If liquid has spilled, or objects have fallen into the unit.
  - The unit has been exposed to rain.
  - The unit doesn't operate normally or exhibits a marked change in performance.
  - If the product has been dropped or has been damaged in any way.

**Maintenance:**

The user shouldn't attempt maintenance not described in this user's manual. All maintenance should be performed by qualified personnel only.

**IMPORTANT SAFETY INSTRUCTIONS:**

- Install this unit following owner's manual instructions.
- Do not install, connect or disconnect power supply when the unit is powered, otherwise there is a high risk of electric shock.
- Do not open the unit, there are no user serviceable parts inside.
- If you detect a particular smell from the unit, please immediately turn it off and disconnect the AC power cord.
- Don't block the unit's ventilation openings.
- Avoid using this unit in overload for a long period.

- Don't force commands (switches, controls, etc.)
- To obtain good speaker wire contact, please tighten the screw terminals firmly.
- ⚠ For safety reasons, do not defeat the grounding connection. Grounding is for user safety.
- Use only connectors and accessories suggested by the manufacturer. .
- This unit should be fitted in an equipment rack (see INSTALLATION) and kept far from:
  - Wet places
  - Direct exposure to heat sources (like sun light)
  - Improperly ventilated places
- Disconnect the power cord during storms or when the unit is not in use.
- ⚠ In order to prevent fire and reduce risk of electric shock, it is necessary to keep the unit far from dripping water. Please don't put cups, vases or other object containing liquids over the unit. In case of interference from source signal, THD value will raise over 10%. Don't place this unit in a bookshelf or in other enclosed spaces.
- We are not responsible for any damage that occurs due to a incorrect installation of the unit.

**Remark:**

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- Content may change without prior announcement
- All technical specifications are guideline data and not guaranteed featured

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## Part 1. 2.4G Wireless conference system description.

Thank you for purchasing this 2.4G wireless conference system. The system uses the world wide common 2.4G band frequency, no need to make any frequency requests at the time of installation to use this system, Wireless Transmission of Control signal and Audio signal using High-Performance DSP Digital coding and Error-Correction processing Technical, achieve the system stable, reliable and secure. System support different conference mode; main unit can connect to the video tracking processor to achieve the video tracking function. Microphone unit power supply by rechargeable battery, convenient and environmentally friendly. The system is easy to operate, free from engineering installation, economical and practical, and is the first choice of conference engineering.

### 1.1 Features.

- Digital encryption Frequency-hopping Wireless Transmission Technical: good confidentiality, High fidelity and High signal-to-Noise ratio. Using the unique new anti-screeching single-pointing high-sensitivity condenser capsule, make the meeting sound almost perfect
- Global public 2.4G ISM band (2400-2483MHz), The signal coverage can be moved arbitrarily, making the venue convenient and flexible.
- An independent data communication algorithm for conference applications, In the range of signals, the response speed of the system will not be affected by the number of attendance units. Users can flexibly increase or decrease attendance units. System can up to 250 microphone units (MAX).
- Support FIFO mode:1-2-3. Limit mode:1-2-3. Chairman only mode different conference mode, main unit can connect to the video tracking processor to achieve the video tracking function for the microphone.
- Use of original Lithium Battery for Power supply, ultra-low power consumption, achieve the 8 hours speaking time; The matching charging box has intelligent charging management circuit, which can protect the battery effectively, prolong the battery life and ensure the safety.
- LCD screen display. Hierarchical menu design makes operation simple and convenient.
- Microphone with touch power switch, glass panel design with built in antenna.

## Part 2. Conference system equipment description.

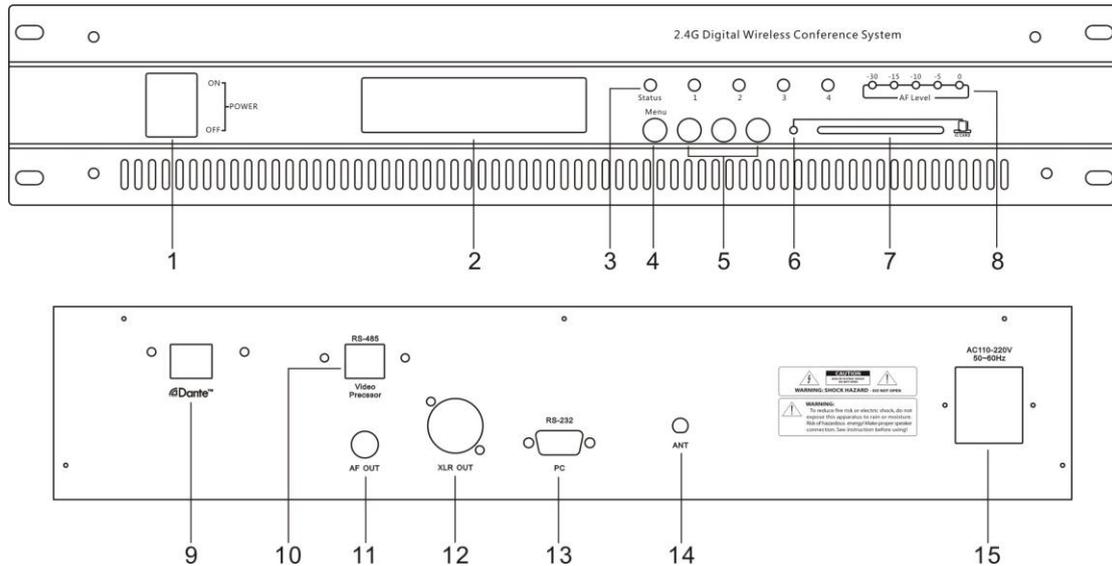
### 2.1 Main unit



#### 2.1.1 Main unit Technical index

- Communication mode: wireless
- Working channel: 4 channels
- Carrier frequency: 2.4GHz (2400-2483MHz)
- Spread spectrum mode: Adaptive frequency hopping spread spectrum, 1000 hops/second.
- Transmitting power: <20dBm
- Receiving sensitivity: -83dBm
- Noise-signal ratio: 95dB
- Frequency response: 50Hz-15kHz
- Power supply: AC110~220V, 50~60Hz
- Output power: 7W
- Working temperature: 0-40
- Dimension: 484\*377\*85mm

## 2.1.2 Main unit schematic



1. POWER switch
2. Display screen
3. Communication connection indicator light (Status. 1. 2. 3. 4) - 1. 2. 3. 4 are indicator lights for speaking channels
4. Menu
5. Secondary menu function key
6. Management IC card indicator lamp
7. Managing IC card Jack
8. AF Level display
9. Dante extension function interface (Dante) - 【Optional】
10. RS-485 data interface – to connect video tracking processor
11. Audio mixed output (AF OUT)
12. Audio mixed balanced output (XLR OUT)
13. RS-232 PC interface
14. 2.4G antenna interface (ANT)
15. Power plug (AC110-220V 50~60Hz)

## 2.2 Microphone unit

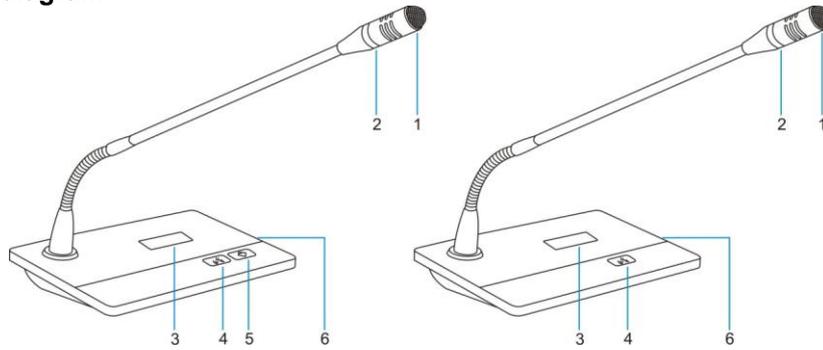


### 2.2.1 Microphone unit Technical index

- Communication mode: wireless
- Carrier frequency: 2.4GHz (2400-2483MHz)
- Spread spectrum mode: Adaptive frequency hopping spread spectrum, 1000 hops/second.
- Transmitting power: <20dBm
- Receiving sensitivity: -83dBm
- Noise-signal ratio: 95dB

- Frequency response: 50Hz-15kHz
- Working distance: 100 meters, antenna emits 120-degree angle without blocking and no interference (by other wireless equipment)
- Power supply: 3.7V rechargeable battery
- Power dissipation: 0.5W
- Working temperature: 0-40
- Quantity of chairman mic and delegate mic in one system ≤ 250
- Touch control ON/OFF switch
- Auto turn off in 25 seconds when communication anomaly
- Battery standby time > 10 hours

### 2.2.2 Microphone diagram



1. Condenser capsule
2. LED lamp
3. OLED display screen
4. ON/OFF button
5. Chairman priority button
6. Power switch button

### 2.3 Special lithium battery

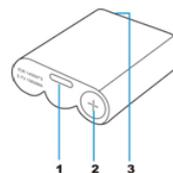


#### 2.3.1 Technical index

- Battery capacity: 1950mAh
- Rated voltage: DC3.7V
- Discharge current: < 500mA
- Charging current: < 700mA
- Speaking time: > 10 hours
- Standby time: > 10 hours
- Charging voltage: DC5V
- Dimension: 47mm×40mm×12mm
- Weight: 54g

#### 2.3.2 Diagram of Lithium Battery

1. Buckle and draw hole
2. Positive electrode (+)
3. Negative electrode (-)



Attention:

1. Impingement, dis assembly or short-circuiting of batteries and incineration are strictly prohibited.
2. Please use original charge case, charging current must not exceed 1A.

3. The battery needs to be fully charged and stored.
4. The battery needs to be maintained regularly, charge and discharge at least one time per three months.
5. Keep the environment ventilated and dry when store and please avoid high temperature.
6. The life of a lithium battery is generally 300~500 charging cycles.
7. Lithium battery with high energy density, miniaturization, lightweight, and high safety.

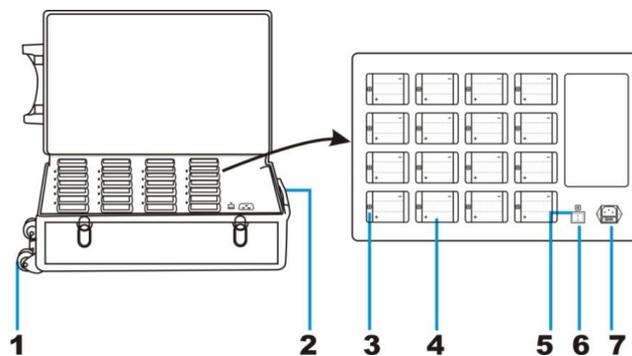
## 2.4 Charge case



### 2.4.1 Technical index

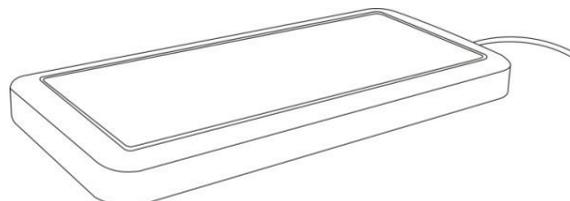
- Power supply: 110V-240V~50Hz/60Hz
- Power: 200W
- Charging quantity: 16pcs
- Maximum charging current per unit: 500mA
- Charging time: about 5 hours (when the battery totally run out)
- State indication: Red light flashing - charging; Green light - charge completed
- Working temperature: 0-40
- Dimension: 620mm×370mm×175mm (Bar length:380mm)
- Weight: 9kg
- With intelligent charge management circuit, protect the battery effectively.
- With telescopic pull rods and pulleys for easy movement.

### 2.4.2 Diagram



1. Pulley
2. Bar
3. Battery charging status indicator
4. Battery slot
5. Power supply indicator lamp
6. Power switch
7. Power plug (AC110V-220V~ 50Hz/60Hz)

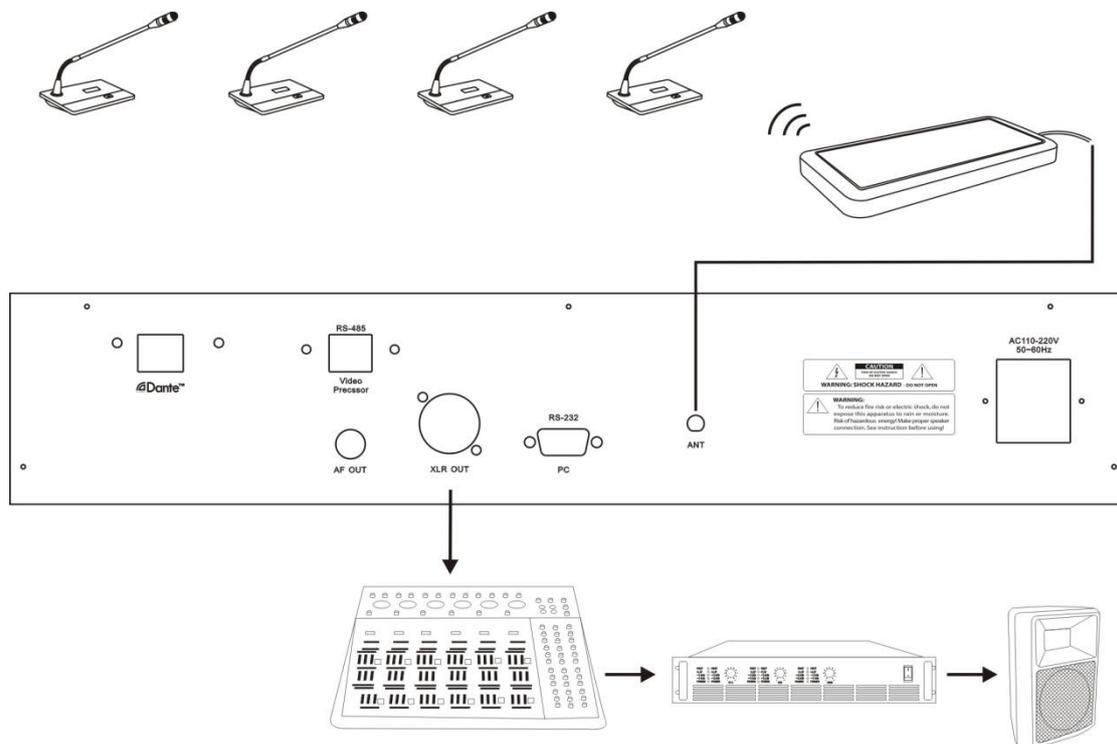
## 2.5 Antenna box



### 2.5.1 Installation requirements

1. The antenna box should install on the wall or ceiling which is unobtrusive height, the antenna faces the center of the hall (conference table).
2. Antenna Box has characteristics of directional receiving signal, the effective range of action is about 60 degree left and right, 30 degree up and down, and within 100 meters in front of the antenna. Try to keep all the microphone units within the scope of the antenna box.
3. The front of the antenna box should avoid Wi-Fi router or other devices that transmit 2.4GHz signals.

### Part 3. System connection diagram



### Part 4. Operation instruction of the system

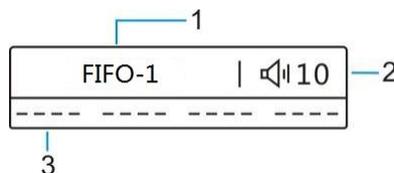
#### 4.1 Main unit operation instructions

##### 4.1.1 Main unit power switch

Turn on: Make sure that the receiving main unit is connected to the power supply, press the switch POWER in the direction of ON to turn on the power supply, and the display screen will light up and enter the normal working state successfully.

Turn off: Press the main unit switch POWER in the direction of OFF to turn off the machine, and the display screen will go out.

##### 4.1.2 Main interface instruction

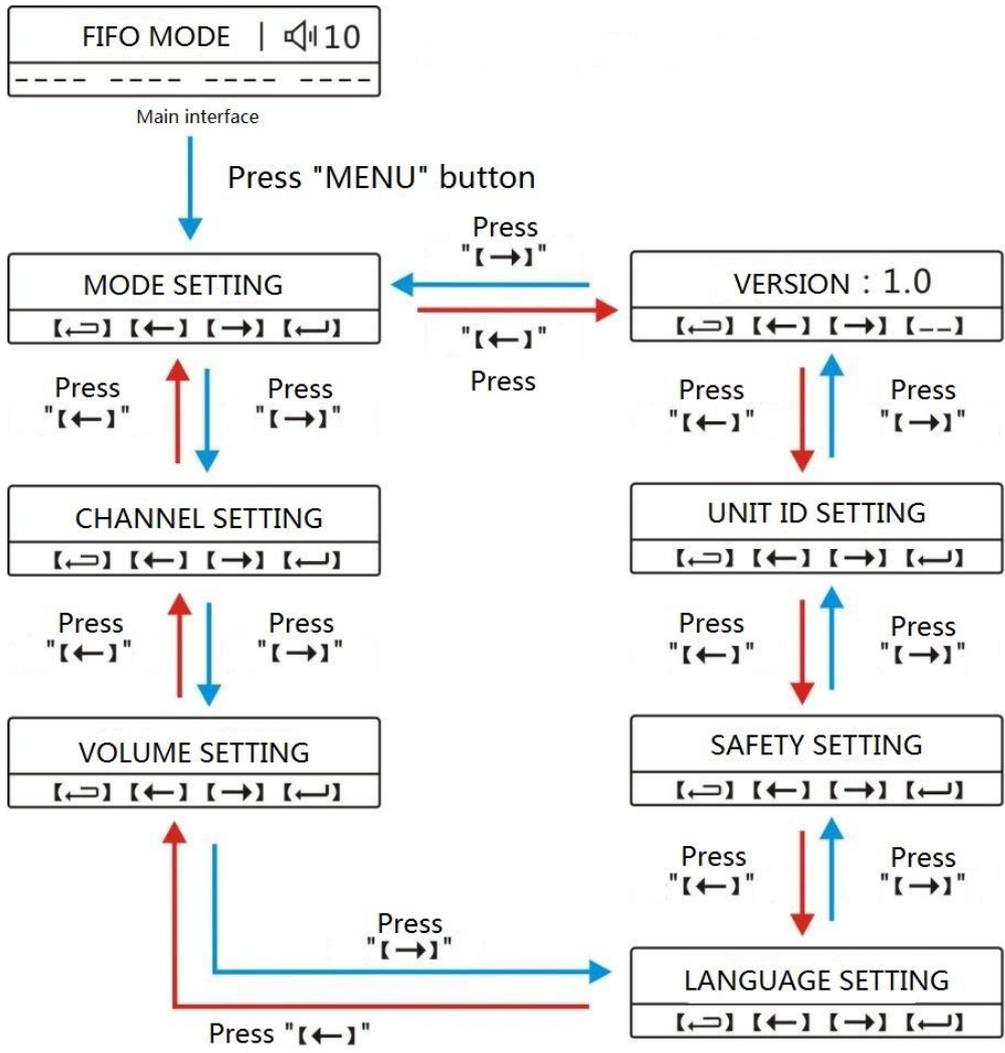


1.Current working mode

2.Main unit volume

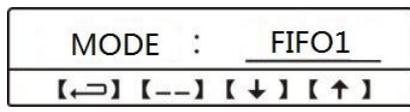
3.Speaking channel status indication (When the microphone unit takes up the channel to speak, it shows the ID number and battery power of the current unit)

### 4.1.3 Screen interface cycle switch



Under the main interface state, Press "Menu" to enter the function settings interface, then press "→" or "←" key to switch over of different function settings cyclic.

### 4.1.4 Working mode setting, FIFO. Limit. Chairman mode setting

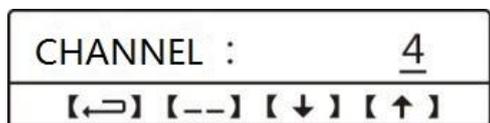


How to set: In the main interface state, Press "Menu" to switch to the work Mode Settings menu page, press "←" key entry mode selection, press "↑" or "↓" to select FIFO mode, Limit mode or Chairman Only mode, After setting up, press 2 times "Menu" key return to the main interface (The main unit will automatically save the selected meeting mode).

➤ PS: When you switch the working mode, the system forces the current microphone unit to be off (include chairman unit)

### 4.1.5 Speaking channel setting

Number of speaking channels (1-4) microphones that can speak at the same time in any mode of work, in which the chairman has priority in possession



How to set: In the main interface state, press “Menu” key, then press “←→” key to switch to the channel Settings menu page, press “←→” key to access channel number selection, press “↑ ↓” or “↑ ↓” to select the needful channel number (1-4), after setting press the “Menu” key return to the main interface (The main unit will automatically save the number of speaking channels which are selected and start executing) .

**PS: Introduction of working mode**

**FIFO-1**

Only 1 microphone is allowed to speak during the meeting, when one microphone is on, operate another microphone to turn on, the system will automatically force to turn off the speaking state of the previous microphone, while keeping only one microphone in the speaking state.

**FIFO-2**

Only 2 microphones are allowed to speak during the meeting, when two microphones are on and speaking. If you operate the 3rd microphone to turn on, the system automatically forces to turn off the first turned on microphone, to keep the whole system only two microphones can be on.

**FIFO-3**

Only 3 microphones are allowed to speak during the meeting, when three microphones are on and speaking, If you operate the 4th microphone to turn on, the system automatically forces to turn off the first turned on microphone, to keep the whole system only three microphones can be on.

**FIFO-4**

Only 4 microphones are allowed to speak during the meeting, when four microphones are on and speaking, if you operate the 5th microphone to turn on, the system automatically forces to turn off the first turned on microphone, to keep the whole system only four microphones can be on.

**Limit-1**

Only 1 microphone are allowed to speak during the meeting, when one microphone is on and speaking, then other microphones will not be able to on and speak, only when that speaking microphone turn off, then you can turn on another microphone to speak. Only one microphone is allowed to speak in the system.

**Limit-2**

Only 2 microphone are allowed to speak at the same time during the meeting, when two microphones are on and speaking, the rest microphone will not be able to on and speak, only when one or both speaking microphone turn off speaking, then you can turn on another one or two microphone to speak, only two microphones are allowed to speak at the same time.

**Limit-3**

The principle is the same as the above Limit mode-2, the only different is 3 microphones are allowed to speak at the same time during the meeting, only three microphones are allowed to speak at the same time.

**Limit-4**

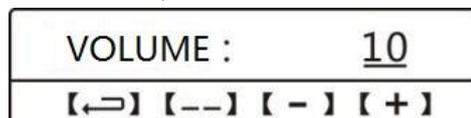
The principle is the same as the above Limit mode-3, the only different is 4 microphones are allowed to speak at the same time during the meeting, only four microphones are allowed to speak at the same time.

**Chairman only mode**

- The system only allows the chairman unit to speak, all the delegate units are not allowing the speak.
- PS: The chairman microphone is not subject to the above meeting modes, it can always stay in the speaking status or keep turning off. In this working mode, the quantity of delegate microphones can speak at the same time will depend on the number of speaking channels.

**4.1.6 Output volume setting**

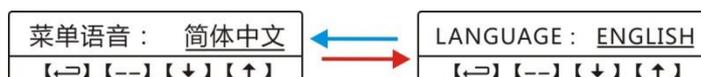
By setting the system volume, user can change the total output volume level of the system, to match the different input level values by other audio equipment (System volume has 10 level for option to select, the original level setting is 10 by manufacturer).



How to set: In the main interface state, press “Menu” key, then press tow times “←→” key to switch to the volume setting menu page, press “←→” key enter the volume selection, press “↑ ↓” or “↑ ↓” to adjust the output volume level, after setting press “Menu” key to return (The main unit will automatically saves the parameters which is selected and starts executing the parameters for the new settings) .

**4.1.7 Menu language setting**

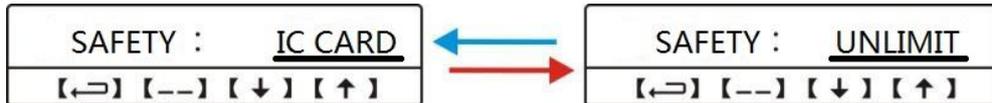
By setting up a menu language, user can change the language of menu display on main unit display screen, (System support 2 languages: **Chinese. English**).



How to set: In the main interface state, press “Menu” key, then press three times “←→” key to switch to the language setting menu page, press “↵” key enter the language selection, press“↑” or “↓”to select the menu language, after setting press “Menu” key to return (The main unit will automatically saves the parameters which is selected and starts executing the parameters for the new settings).

#### 4.1.8 Safety setting

By setting up security actions, user can select IC management Card or unlimited. When select the IC management card mode, user needs to insert the IC management card to set or change anything on the main unit; If the IC card is not inserted correctly (not original IC card), the main unit will not be able to operate. The display screen will show “Please insert IC card”. If setting the unlimited mode, there will be no need to insert the IC card then everyone can operate the main unit.

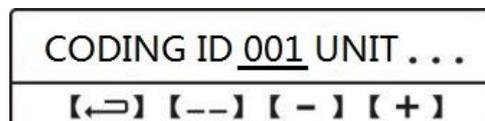


How to set: In the main interface state, press “Menu” key, then press four times “←→” key to switch to the safety setting menu page, press “↵”key to select, press “↑” or “↓”to select the safety setting option, after setting press “Menu” key to return (The main unit will automatically saves the parameters which is selected and starts executing the parameters for the new settings).

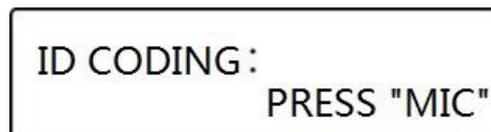
#### 4.1.9 Microphone ID number setting

In the system ID number for each microphone must be unique and must be setting in 1-250 range. Which means in the same system every microphone’s ID number cannot be repeated and cannot be setting over 1-250 range (The system already limits the users only can select in 1-250 range). Otherwise, the system will not work properly.

How to set: In the main interface state, press “Menu” key, then press five times “←→” key to switch to the ID setting menu page, press “↵”key enter to set, the unit ID number can be set sequentially, press “↑” or “↓”to select the starting ID number, Selecting the ID number from the main unit, after the ID number setting information is launched, when choosing the ID number is 001, main unit will shows



At this moment please turn on the microphone power and keep pressing the (MIC) key immediately until the screen shows:



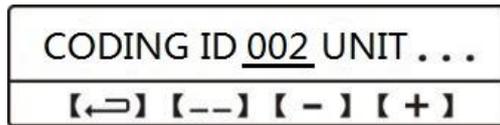
Release the (MIC) key, and press one-time (MIC) key, the screen will show:



After 3 seconds the main unit screen will display:



Now the ID 001 microphone unit is finished the setting, turn off the power of ID 001, the main unit screen will show “setting ID 002...”:



Start setting the next ID 002 microphone unit, keep repeating this operation until all the microphone unit ID setting is finished. After setting press "Menu" key to return (The main unit will automatically save the parameters which is selected and starts executing the parameters for the new settings).

➤ PS: When the system is in normal working, the main unit cannot be staying in ID setting status, Otherwise, the main unit and the microphone unit cannot be used and connected normally.

## 4.2 Microphone unit

### 4.2.1 ID setting

Before the microphone unit and the main unit are used together for the first time, user needs to set the microphone ID number to match with the main unit, also every microphone unit ID number cannot be repeat in 1-250 range. The original setting is finished by the manufacturer.

### 4.2.2 Microphone language setting

Turn on the microphone power and keep pressing the (MIC) key immediately until the screen shows:



Then press the power key again, the screen will show:



Now press the (MIC)key to select the language, after the selection please turn off the power then the microphone will save the setting.

### 4.2.3 Starting up

Press the key (POWER) in right side of the microphone to turn on microphone, the screen will light up and shows:



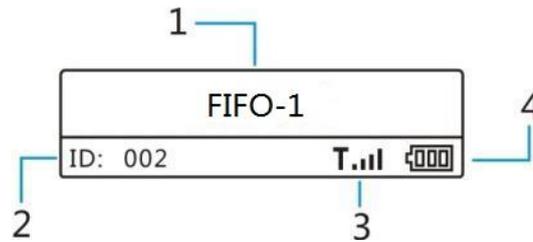
Then the microphone will search the signal and connect to the main unit:



After successful connection will shows:



#### 4.2.4 Main interface description of the microphone



- 1.Current working mode
- 2.Microphone ID number
- 3.Signal strength indication
- 4.Battery power display

If the microphone cannot search the signal it will shows:



And it will auto turn off in 25 seconds.

Press the (MIC) key to speak it will show:



The gooseneck LED lamp will light up, the occupied channel on the main unit communication indicator will shows the yellow light.

#### 4.2.5 To use the chairman priority function

Turn on the chairman's priority mode:

Press the "priority" button one time on the chairman microphone to turn on the chairman's priority status. Now the system only allows chairman microphone to speak, the rest delegate microphones are not allowed to speak. If there's any delegate microphone at the speaking status, the system will force it to turn off speaking.

Turn off the chairman's priority mode:

When turn on the chairman's priority status, press the "priority" button again to turn off the chairman's priority status, and turn off the speaking.

- PS: When the battery is running out, battery power display on the microphone screen will flash, battery should be charged in time or replace a new battery with full power to use the microphone.
- The power will be turned off in half an hour since the battery power display flashing.

## Part 5 Trouble shooting

If the system did not work properly, before contacting the dealer or maintenance center, please check the following list of questions:

Question	Possible cause	Solution
Microphone cannot turn on	Low power of the battery	Charge the battery
Main unit cannot turn on	1. Main unit did not connect to power or bad connection. 2. Power fuse burned.	1. Check power supply connection. 2. Change the fuse.
Microphone cannot connect to the main unit	1. Power of the main unit. 2. Antenna box connect to the main unit or not. 3. Main unit is staying at the ID setting status or not. 4. ID setting between microphone and main unit.	1. Turn on the power. 2. Connect the antenna box to the main unit. 3. Exit the ID setting status. 4. Match the microphone ID number with the main unit.
Battery life decrease	The recharge capacity of the rechargeable battery is reduced, and the recharging capacity is reduced.	To buy the new battery from the dealer.
Battery cannot be charged, charger display light is not on, charging time over 8 hours	1. Charging point filthy. 2. To be placed for a long time after charging. 3. Incorrect use of rechargeable batteries 4. The rechargeable battery can be charged normally in another charging grid.	1. Clean charging point. 2. Use the battery first and then recharge it. 3. Replace another correct new battery. 4. Charger damage, contact the dealer.