




**UR-112D**

Dual Channel True Diversity Wireless Microphone

Installation and Operation

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Thank you for choosing a RELACART professional wireless microphone system. You have joined thousands of other satisfied customers. Our years of professional experience of design and manufacturing to ensure our products' quality, performance and reliability.

## 01 Safety Operation and Notice

1. Please read instructions for safety operation carefully before installation and operation. Please save your safety operation guide for future reference.
2. Do not scratch, bend, twist, stretch or heat the power cord as this may cause damage to the power cord, resulting in a fire or electric shock.
3. Do not open the device shell, otherwise it may cause electric shock. If you need to repair, maintain or repair, please contact your local agent.
4. Do not touch the power plug with wet hands as this may cause a fire or electric shock.
5. Do not attempt to modify this device. Failure to do so may result in personal injury or product malfunction.
6. Do not use this equipment near water.
7. If the power cord is damaged (such as a broken wire or bare core), obtain replacement parts from your dealer. Continued use of the equipment with a damaged power cord may result in fire or electric shock.
8. To move the device he power, unplug the power cord, and unplug all connecting cables as this may damage the cable, resulting in a fire or electric shock.
9. Before cleaning the device, unplug the power cord and unplug all connecting cables. Please clean it with a dry soft cloth.
10. If the device is not in use for a long time, turn off the power, it is best to unplug the socket.
11. With the power plug and appliance coupler as the disconnecting device, it should be kept easy to operate.
12. For the safe use of the equipment and adequate ventilation, the minimum clearance around the equipment should be maintained at a distance of 5 cm or more.
13. DO NOT cover the Ventilation holes, such as: newspaper / fabric / curtains and other items.
14. Equipment should not be placed on a bare flame source, such as: lit candles.
15. Battery should not be exposed to sunshine, roasted or other high temperature overheating environment.
16. Do not throw the waste battery, please put in the designated bins.
17. Water protection rating: IPX0
18. The device can be used normally in tropical / temperate climates.
19. This product is only suitable for safe use at the altitude of 2000m and below.
20. This symbol "⚡" indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
21. All Relacart products will be afforded one year free maintenance except for man-made damage, such as:
  - the device is damaged by man-made factors.
  - the device is damaged by improper operation.
  - some components are damaged or loss after the self-disassembly.

## 02 System Performance Feature

UR-112D series is a dual-channel true diversity wireless microphone, true diversity receiving mode is more stable, automatic signal selection, eliminating receiving dead angle, to avoid the phenomenon of frequency drop. This series is specially designed for singing, with wide frequency response, rich sound quality, roundness and fullness, and powerful vocal expression. Cordioid directional sound pick-up, high sensitivity, while reducing environmental noise pick-up, high fidelity timbre, suitable for karaoke, bars, nightclubs, clubs, and small to medium size performance.

### Key Features:

- International EIA STANDARD 1U metal chassis, combined with new-style compact and elegance LCD display.
- UHF 521.25MHz~936.85MHz operating frequency range, with AFS (Auto Frequency selection) function, dual-channel reception, frequency-selective greater.
- Press the "AFS" (Auto Frequency Selection) button 3 sec and the receiver will auto-scan and lock on to an open, interference-free frequency.
- Press [IR] button to upload automatically the receiver frequency to the transmitter.
- Stable PLL (Phase Lock Loop frequency control) design ensures transmission reliability, "Noise Lock" squelch effectively blocks stray RF.
- Each channel with 32 adjustable frequencies, total 64 adjustable frequencies for dual channels, 24 frequency groups provides 768 selectable frequencies for users.
- 134MHz transmitter, four different frequency bands transmitter can be used at random, which is very convenient for debugging and management.
- The hardware circuit of the whole system is controlled by a microcomputer, and the selected computer technology is used to calculate the frequency of no interference with each other, so that the performance of the whole system is more stable, and it is not easy to occur the phenomenon of frequency offset and interruption.
- Bright and easy-to-read LCD display show RF/AF signal strengths, transmitter battery consumption, can set channel, frequency, frequency group, user name, mute level, etc.
- Accurate low consumption circuit design, battery life is twice as common one.
- Can match EH-60B/W handheld microphone, ET-60 bodypack transmitter, UD-1 desktop microphone.

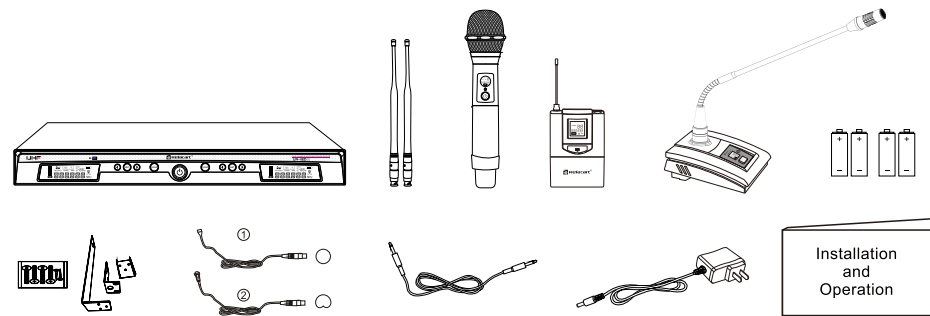
## 03 Receiver Installation Method

### Installation:

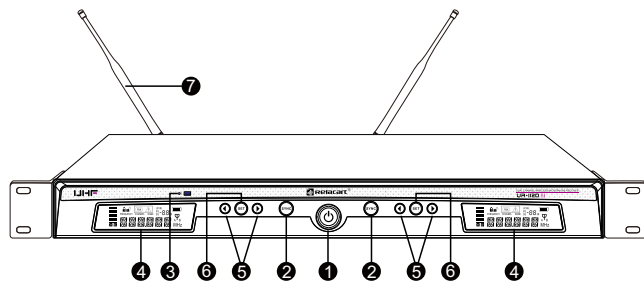
- ① For better operation the receiver should be at least 3ft (1m). above the ground and at least 3ft (1m). away from a wall or metal surface to minimize reflections.
- ② Attached a pair of UHF antennas to the antenna input jacks, the antenna are normally positioned in the shape of a " V " (both 45° from vertical) for best reception.
- ③ Keep antennas away from noise sources such as computer, digital equipment, motors, automobiles and neon lights, as well as away from large metal objects
- ④ Keep open space between the receiver and transmitter for better reception.
- ⑤ The transmitter should be at least 6ft (2m). from the receiver

## 04 Packing List

- ◆ Wireless microphone receiver \*1
- ◆ Wireless transmitter \*2
- ◆ BNC Antenna \*2
- ◆ External power adapter \* 1
- ◆ 1 meter audio cable \*1
- ◆ 1.5V AA battery \*4
- ◆ 1 U rack mount kit (screw) \* 1 set
- ◆ Installation and operation \* 1

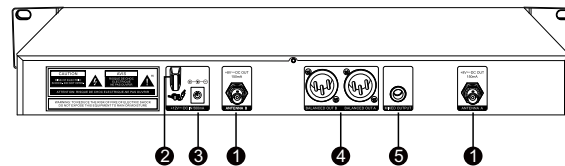


## 05 Receiver Front Panel Function Introduction



- 1 Power switch: Turn on the receiver of power supply, long press to turn off the receiver.
- 2 "SYNC" button: When the infrared frequency window of the receiver and transmitter is aligned, press the "SYNC" button, synchronization of transmitters via IR interface from receiver.
- 3 Infrared data transfer window (IR) : Transmit channel data from the receiver to the transmitter, so that they are in the same frequency, in order to realize the synchronization.
- 4 LCD display: Display working channel or frequency, RF/AF, diversity strengths, transmitter battery level, mute and operation menu.
- 5 "◀ / ▶" allow control button: Press the allow button to edit the menu parameter values; Long press "▶" button to enter [AFS] auto- scan function and the receiver will auto- scan and lock on to an open, interference-free frequency.
- 6 "SET" button: Press to step through menus, choose operating frequency and select receiver function options.
- 7 1/2 wavelength BNC antenna: Used to receive radio transmitter for transmission.

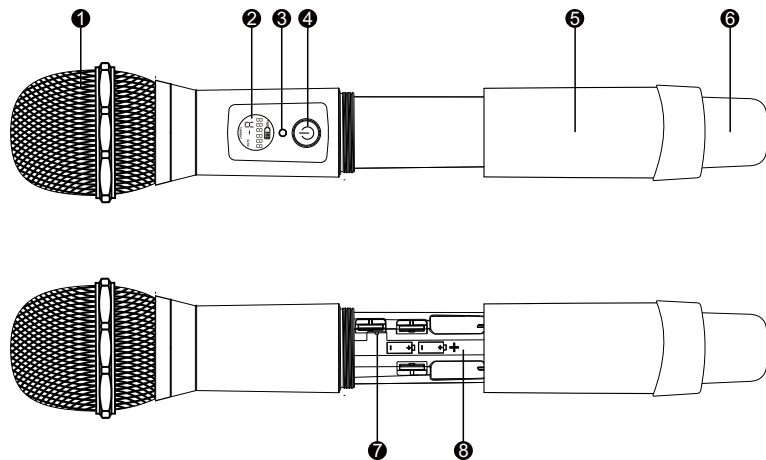
## 06 Receiver Rear Panel Function Introduction



- 1 RF antenna diversity BNC input connector: suitable for connection of antenna A and antenna B, and supports DC 8V/150mA power output.
- 2 Anti-pull device: used to fix the connecting cable of the external power adapter.
- 3 DC IN socket: connect to external power adapter.
- 4 Balanced audio output port (dual channel independent): The XLR port can be used to connect a standard 2 conductor shielded cable the receiver output to a balanced microphone level input on a mixer.
- 5 Unbalanced audio output port (dual channel independent): The 6.3mm port can be connected to an aux- level input of a mixer or power amplifier.

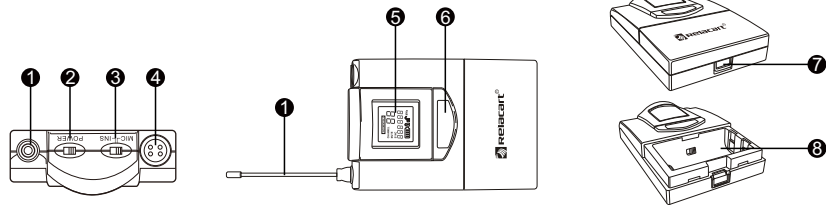
## 07 Transmitter Function Introduction

Handheld microphone (EH-60B/W)



- 1 Microphone Head: It is the important part to transfer sound into audio signal. The microphone head is separate to change other microphone head if needed.
- 2 LCD display: display the frequency, channel, mute and battery life. Battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the batteries should be replaced immediately.
- 3 Infrared data receiving window (IR): Synchronization of transmitters via IR interface from receiver.
- 4 Power Button/Mute Button: Press the power button to turn on the transmitter, press the power button 1.5 second enter the mute status, press one more time to close the mute function. Long press 3 seconds to turn off the transmitter.
- 5 Battery cover: Unscrew it can reveal the battery compartment; When installing or replacing, the battery cover must be opened.
- 6 Handheld transmitter tail cover: integrated antenna transmission output port.
- 7 RF power switch: HI is 40 mW, LO is 10 mW.
- 8 Battery compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended. Please remember to replace both batteries.)  
Warn: Observe correct polarity as marked inside the battery compartment to avoid damage to the internal electric parts.

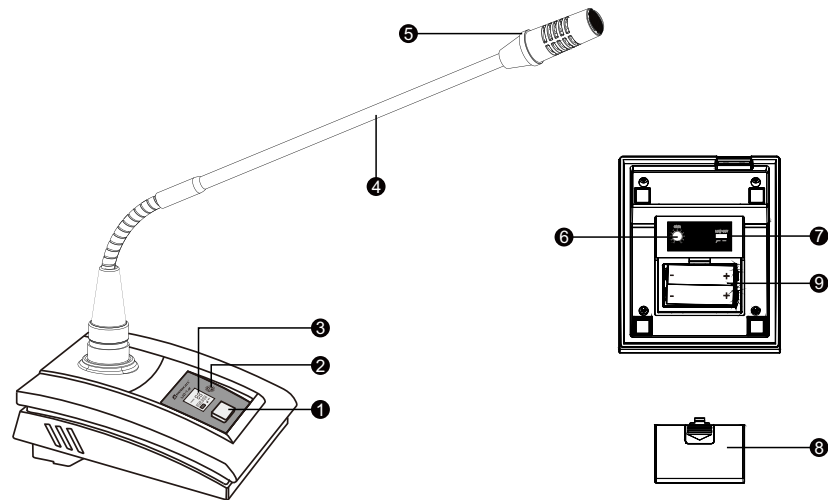
## Bodypack transmitter (ET-60)



- ❶ Antenna: For transmitting a bodypack radio carrier.
- ❷ Power toggle switch: Toggle this switch to turn on or off power supply of the transmitter.
- ❸ AF/INS audio input selection switch: The transmitter can be connected with an audio input device (microphone or instrument connection cable) at the top part-the input socket. "MIC" is used for microphone input and "INS" is used to connect to guitar with instrument connection cable.
- ❹ 4-pin mini XLR plug: Connect to 4-pin lavalier microphone or instrument cable.
- ❺ LCD display: display the frequency, channel, lock and battery life. Battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the batteries should be replaced immediately.
- ❻ Infrared data receiving window (IR): Synchronization of transmitters via IR interface from receiver.
- ❼ Battery Door Switch: Open the battery door by sliding the switch.
- ❽ Battery Compartment: Pull to open the battery door and insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended. Please remember to replace both batteries.)

Warn: Observe correct polarity as marked inside the battery compartment to avoid damage to the internal electric parts.

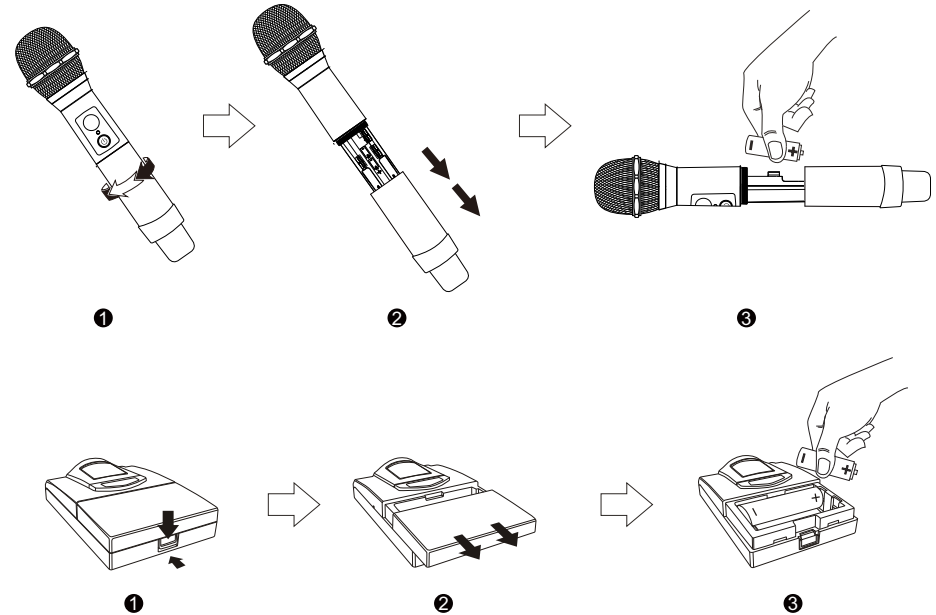
## Gooseneck conference microphone (UD-1)



## 08 Transmitter Battery Installation

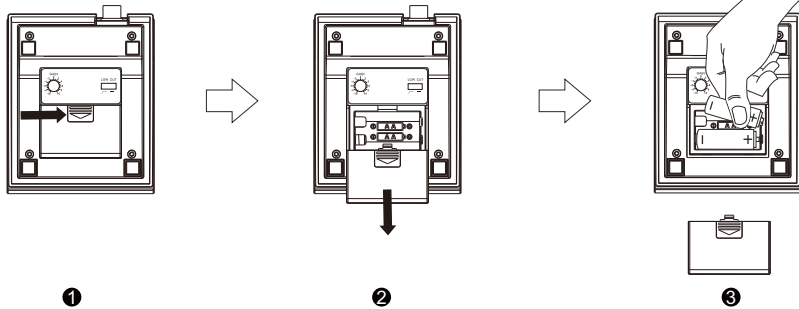
- 1 Power Button/Mute Button: Press the power button to turn on the transmitter, press the power button 1.5 second enter the mute status, press one more time to close the mute function. Long press 3 seconds to turn off the transmitter.
- 2 Infrared data receiving window (IR): Synchronization of transmitters via IR interface from receiver.
- 3 LCD display: Display the frequency, channel, look and battery life. Battery indicator displays a maximum of 4 bar segments. When it leaves 1 bar segment, the batteries should be replaced immediately.
- 4 Microphone rod: bending gooseneck design, can flexibly put the pickup head to any position.
- 5 Speaking Aperture: When you open the microphone to speak, this instruction light bright.
- 6 Gain knob: adjust the input signal size.
- 7 Low cut switch: cut off the low-frequency signal below 150Hz.
- 8 Battery Door Switch: Open the battery door by sliding the switch.
- 9 Battery Compartment: Insert 2 fresh 1.5V AA batteries. (Alkaline type is recommended. Please remember to replace both batteries.)

Warn: Observe correct polarity as marked inside the battery compartment to avoid damage to the internal electric parts.





## 09 System Setup



### Receiver Setup

1. Make sure the transmitter is off before turning on the receiver.
2. Press the power switch on the receiver, LCD backlight will turn bright, and the normal display will be in 1-2 seconds. If the screen shows more than two signals, which means that there is a frequency interference from outside, please change the other operating frequency.
3. Change the operating frequency by manual or by auto-scan mold:
  - a) Set the operating frequency by manual: press ◀/▶ to change the frequency, after the selected frequency flashes 4 times, the receiver will enter the selected frequency and show it on the LCD screen.
  - b) AFS Auto Frequency Scanning: long press ◀/▶ or 3 seconds, the receiver will auto scan about 30 seconds and lock on to an interference-free frequency.
4. Enter the main menu: long press SET button 3 seconds to enter the main menu. Press ◀/▶ button to select the following menu: SQUELCH (squelch level control: 10 ~ 30dB), LIST (group or channel select), NAME (devices can be named freely), LEVEL (electronic volume adjustment: -06 ~ +18dB), SCAN (Automatic frequency search), TOOLS (secondary menu Settings) and EXIT (exit menu Settings).

**(1) SQUELCH (squelch level control):** Selecting "SQUELCH", then touch SET Button to enter edit mode, the small data flashes to indicate edit, touch ◀/▶ button to scroll through the available choice for the function. The squelch level is adjustable in ten 5dB steps, providing a 50dB range. Press SET Button to confirm the desired choice, then LCD return to its previously displayed contents. Finally press "SET" to confirm.

(Receiver squelch threshold is factory preset. When the transmitter too far away from the reception range or receiver does not receive enough transmit power, you can adjust by yourself. Note that unless absolutely necessary, please do not adjust the squelch threshold, if adjusted too low will produce excessive noise, system operation will not stable.)

**(2) LIST (devices can be named freely):** Selecting "LIST", then press SET to enter edit mode, press ◀/▶ button, to change the group (01-10) and channel (09-12). According to the change of different channels, the group and channel are also different, Finally press SET to confirm.

**(3) NAME (devices can be named freely):** Selecting "NAME", then touch SET button to enter edit mode (System consented name is UR-112D), when the first number flashes, touch ◀/▶ arrow button to choose any number (0-9) or letter (A-Z) or character. After the first number has been picked up, press SET button, then the second letter flashes, and repeat the first step operation till the sixth letter is programmed. Touch SET button to confirm the desired choice, then LCD returns to its previously displayed contents.

**(4) LEVEL (electrical level adjustment -06 ~ +18dB):** select LEVEL, then press SET to enter the edit mode, press ◀/▶ button, the adjustable electronic volume (-06 ~ +18dB). Finally press SET to confirm.

**(5) SCAN (auto frequency scan):** Selecting "SCAN" function, press SET button will auto scan about 30 seconds and lock on to an open, interference-free frequency. After finish scan LCD returns to its previously displayed contents.

**(6) TOOLS (Secondary menu Settings):**

**1. DESKTOP (frequency, channel, name, SQ or Level display):** Selecting "DESK", then touch SET Button to enter edit mode, touch ◀ arrow button, "FREQUENCY" flashes, if stopping on "FREQUENCY", the LCD will display the RF frequency; touch ▶ arrow button, "CHANNEL" flashes, if stopping on "CHANNEL", the LCD will display the operational channel. Press SET Button to confirm the desired choice, then LCD return to its previously displayed contents. Finally press "SET" to confirm.

**2. PILOT (pilot switch):** select PILOT, then press SET to enter edit mode, press ◀/▶ button, can select ON or OFF (on or off pilot). Finally press SET to confirm.

**3. R-LOCK (lock operation):** Selecting "R-LOCK", then touch SET button to enter edit mode, touch ◀/▶ arrow button, it displays "ON", if stopping on "ON", the system enters lock mode, the user can not use any button for any control; touch ▶ arrow button, it displays "OFF", if stopping on "OFF", the user can do any control by any button. Press SET button to confirm the desired choice, then LCD returns to its previously displayed contents.

R-LOCK ON: Press SET button in 3 seconds, touch ◀/▶ arrow button to choose R-LOCK, then press button, if stopping on "OFF", press SET button, system returns to normal setting.

**4. REVISI (display version):** select "REVISI", then press SET to enter version mode, display current version information.

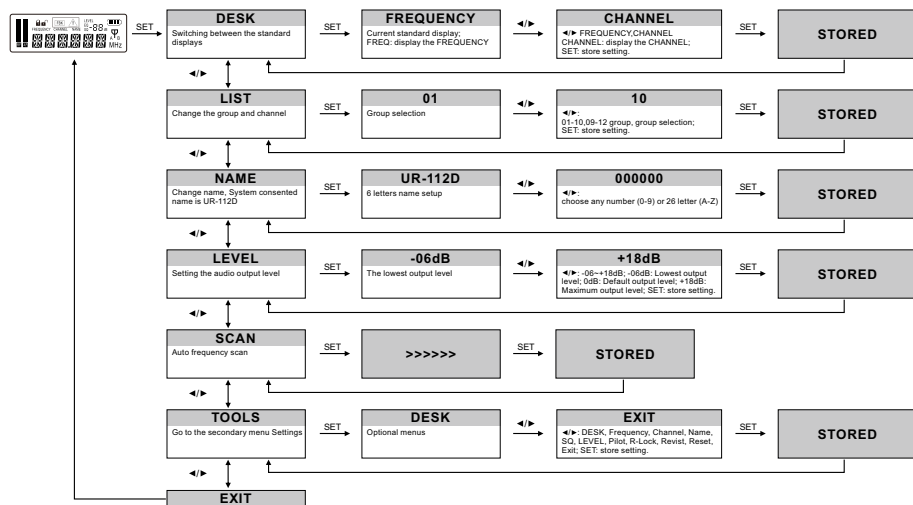
**5. RESET ( Device reset ):** select "RESET", then press SET to enter edit mode, press ◀/▶ button, can select YES or NO. Finally press SET to confirm.

**6. EXIT:** Exit the secondary menu Settings.

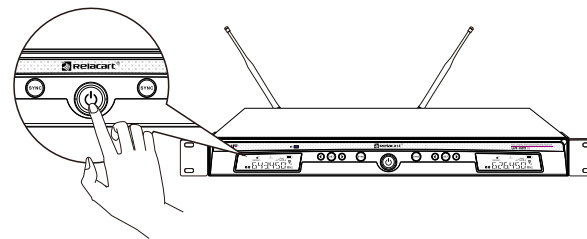
**(7) EXIT :** Exit the menu Settings and return to the main interface.

## 10 User-friendly steps

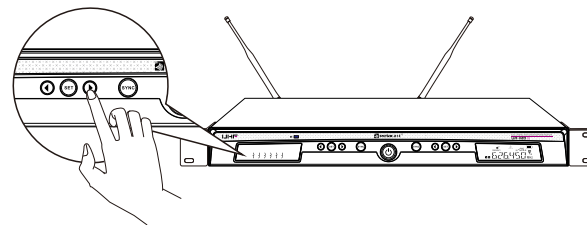
### Operating menu of the Receiver:



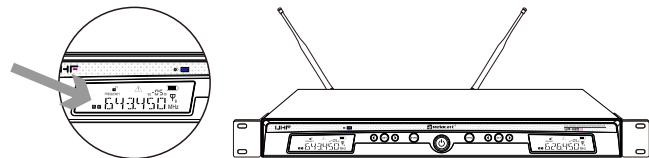
1. After connecting the antenna and the power cable, press the power button to turn on the receiver. When the display is lit, the power is turned on successfully. (As shown below)



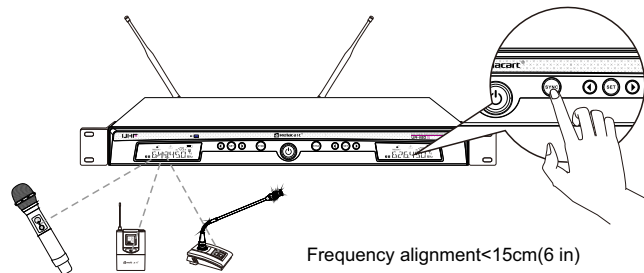
2. Long press "⏻" button on the receiver to enter Automatic Frequency Search (AFS) function. (As shown below)



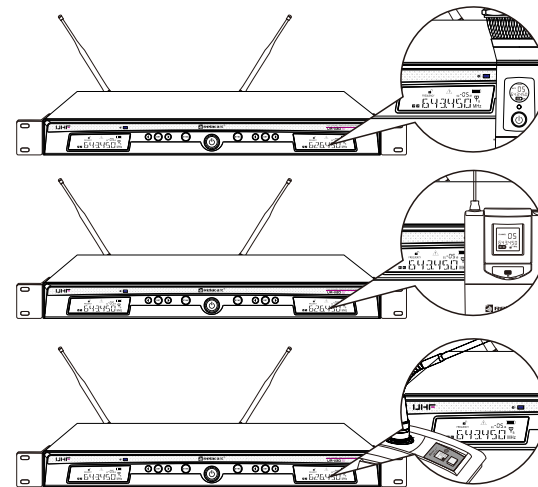
The searched channel automatically calculates the interference-free frequency. The "RF" light on the receiver display is 0 grid. If not, you can repeat this action until a clean channel is found. (As shown below)



3. The transmitter's infrared window facing to the receiver IR port. Press the "SYNC" button. (As shown below)



The frequency of the transmitter and the receiver are synchronized. When talking with the microphone, the "AF" signal in the display jumps to indicate that there is an audio output. (As shown below)



Channel display (receiver and transmitter display the same frequency)

# 11 Technical Specification

## UR-112D Dual Channel Receiver

Main Frame Size:	EIA standard 1U
Receiving Channel:	Dual Channel
Frequency Stability:	±0.005% (-10° C ~ 50° C)
Carrier Frequency Range:	521.25MHz ~ 936.85MHz
Modulation Mode:	FM
Oscillation:	PLL synthesized
Sensitivity:	6dBμV, S/N >60dB at 25 deviation
Bandwidth:	32MHz
Max Deviation Range:	±45KHz
S/N:	>100dB
T.H.D:	<0.5%@1KHz
Frequency Response:	63Hz — 18KHz ±3dB
Operating Range:	50M typical (in open space)
Power Supply:	DC 12V/7W
Dimension (mm):	410 (W) x 206 (D) x 43 (H)
Weight:	Approximately 1.8Kg

## EH-60B/W Wireless handheld microphone

Carrier Frequency Range:	521.25MHz ~ 936.85MHz
Oscillation:	PLL synthesized
Harmonic radiation:	≤45dBm
Bandwidth:	Band HF: 139MHz (797MHz ~ 936MHz) Band AD: 134MHz (662MHz ~ 796 MHz) Band EJ: 97MHz (554MHz ~ 651MHz)
Max.Deviation Range:	±45KHz
Microphone Element:	Cardioid Dynamic/Cardioid Condenser
RF Power Output:	10mW/40mW
Battery:	AA x 2
Current Consumption:	110mA typical
Battery Current/Life:	Approximately 11 hours
Dimension(mm):	52(Φ) x 255(L)
Weight:	285g (w/o battery)

## ET-60 Wireless bodypack transmitter

Carrier Frequency Range: 521.25MHz ~ 936.85MHz

Oscillation: PLL synthesized

Harmonic radiation: ≤50dBm

Bandwidth: Band HF: 139 MHz (797 MHz ~ 936 MHz)

Band AD: 134MHz (662 MHz ~ 796 MHz)

Band EJ: 97MHz (554MHz ~ 651 MHz)

Max.Deviation Range: ±45KHz

Input Connector: 4-pin mini-XLR connector

RF Power Output: 10mW/40mW

Battery: AA x 2

Current Consumption: 110mA (typical)

Battery Current/Life: Approximately 11 hours

Dimension: 84(H) x 66(W) x 23(D)

Weight: 116g (w/o battery)

## UD-1 Wireless Gooseneck conference microphone

Carrier Frequency Range: 521.25MHz ~ 936.85MHz

Modulation PLL: PLL Synthesized

Harmonic Radiation: ≤50dBm

Bandwidth: Band HF: 139MHz (797MHz ~ 936MHz)

Band AD: 134MHz (662 MHz ~ 796MHz)

Band EJ: 97MHz (554MHz ~ 651MHz)

Max. Deviation Range: ±45KHz

RF Output Power: 13mW

Battery: AA x 2

Current Consumption: 130mA (Typical)

Battery Current/Life: Approximately 9 hours

Microphone Lengths (mm): 340 / 420 (default) / 480

Weight: Approximately 830g (w/o battery)

Color: Nickel Black