

# WIRELESS MICROPHONE SYSTEM

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## 1. Introduction

Thank you for purchasing our product. This wireless microphone system operates in VHF band frequency with crystal controlled. Please read this instruction manual carefully before operating the system. This manual covers the function and operation of the wireless microphone system.

## 2. Safety

- Do not spill liquid on the appliance and do not drop it on a hard concrete floor.
- Do not place the appliance near heat sources such as radiators, amplifier, or etc. Do not expose it to direct sunlight, extremely dust, excessive moisture, or vibration.
- Take out the battery from transmitter, if the appliance has been not used for a longer period. This will avoid the damage resulting from a defective leaking battery

## 3. Environment

- Do not throw used batteries into a fire or garbage bin with domestic rubbish. Be sure to dispose of used batteries in accordance with local waste disposal rules.
- When disposing the equipment, remove the batteries, separate the case, circuit boards, and cables, and dispose of all components in accordance with local waste disposal rules.

## 4. Wireless Top Ten

- Before setting up, make sure that the transmitter and receiver are tuned to the same frequency.
- Do not use two transmitters in the same frequency.
- Every wireless microphone needs its own receiver.
- Use good quality batteries to avoid the damage resulting from a defective leaking battery.
- Turn the volume control on the receiver to adjust receiver output level to match input level requirements of a mixer or amplifier.
- Use the gain to adjust the sensitivity of the transmitter's audio to the level of the connected lapel microphone or instrument.
- If undesirable noise occurs, adjust the antenna or SQUELCH control on receiver in clockwise to suppress it. The higher squelch control, the lower the sensitivity of the receiver and decrease the service area of the system.
- While checking sound, move the transmitter around the area where you use the system to look for dead spots. If you find any dead spot, change the receiver position. If it does not work, avoid such places.
- To avoid interference, do not put the receiver too near metal object and avoid obstructions between transmitter and receiver.
- Avoid the interference from TV, radio, other wireless appliances and etc.

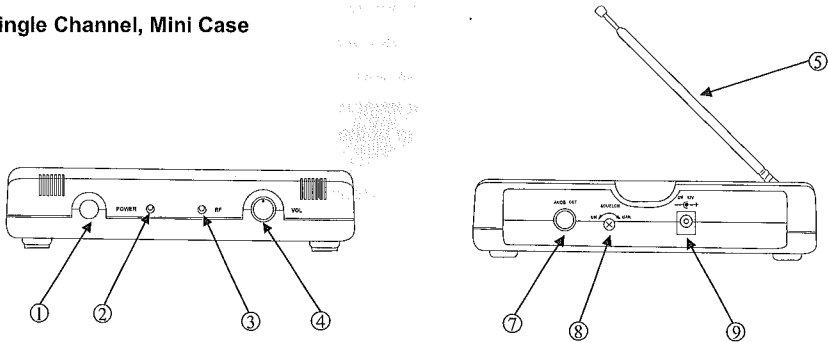


## 5. Product Description

### 5.1 Receiver

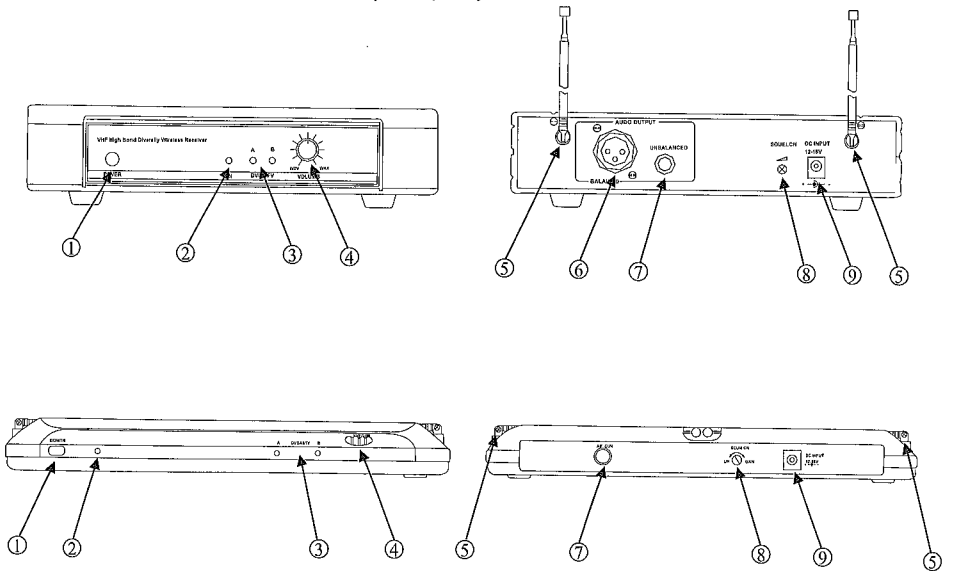
This is a stationary receiver for use with our VHF transmitters (DC3V operating voltage). The receiver operates in VHF band frequency with quartz locked controlled. Powered by 12V DC.

#### Single Channel, Mini Case



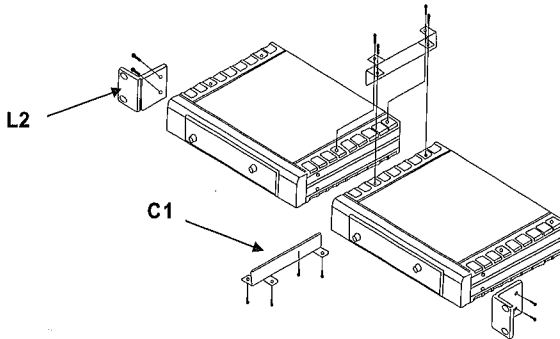
#### Diversity Type, Single Channel

With two antennas ensures the reception quality.

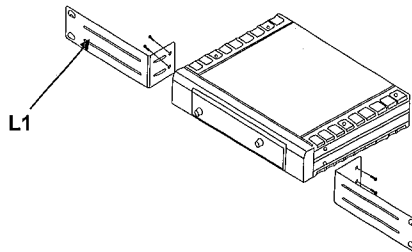


1. **Power:** Power on pushbutton switch.
2. **Power Indicator:** The indicator LED lights when the receiver is ready to operate.
3. **RF Indicator:** This LED lights to indicate that signal is being received.
4. **Level Control:** This rotary control adjusts the receiver's output level from the microphone to line level for matching the input sensitivity of the mixer or amplifier.
5. **Antenna:** Fixed-length antenna permanently mounted on the rear panel.
6. **Balanced Output:** 3-pin XLR connector provides balanced audio output.
7. **Unbalanced Output:** 6.3 $\phi$  phone jack provides unbalanced audio output.
8. **Squelch Adj. :** The squelch adjusts the output level to prevent from the external noise. Setting the squelch too high will reduce the range of the system. Set the squelch to minimum before turning the receiver on.
9. **DC Jack:** DC input connector for the supplied AC adapter.

To combine two receivers in a 19" standard rack by using 2 short L type plastics racks (L2) and 2 metal connecting plates (C1). (Each system includes a L2 and a C1.)

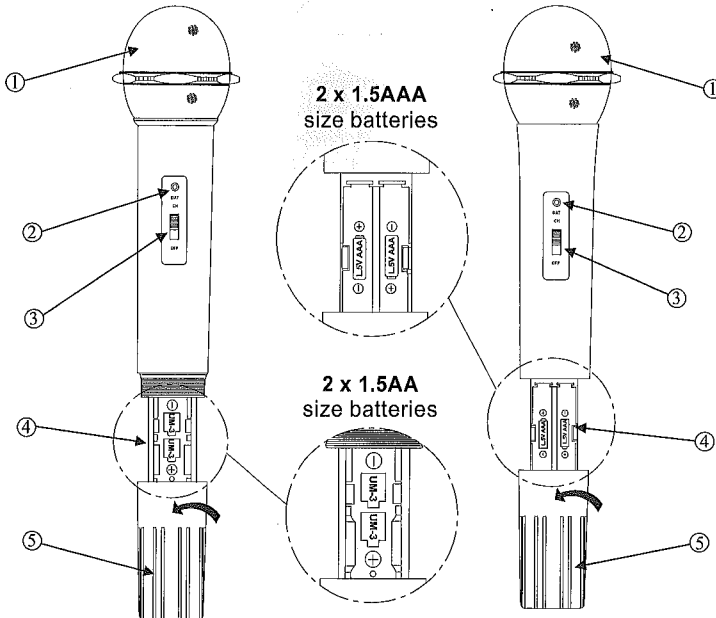


To mount a receiver in a 19" standard rack by using 2 L type long metal racks (L1). (L1 is an optional product, so please purchase extra in local shops.)



## 5.2 Handheld Microphone

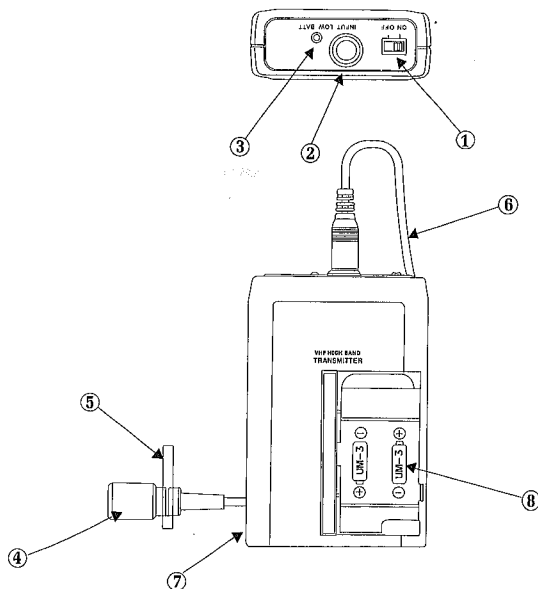
The handheld microphone operates in VHF high band frequency range 150~260MHz with quartz-locked control and integrates an antenna inside. Uni-directional dynamic or uni-directional condenser capsules with different characters for various choices. Use 1.5V x 2 AA size or AAA size batteries for low operating cost.



1. **Grille:** Protects the microphone capsule and helps reduce breath sounds and wind noise. The grille for the various microphone capsules differ in appearance.
2. **Low Battery LED:** LED indicates battery life status. Switching the power to "ON", the LED flashing once indicates that the transmitter has sufficient power. If the LED stayed on, it indicates that the battery has insufficient power and should be changed soon. If the status LED fails to flash, the battery is either dead or not positioned correctly, and you should correct the positioning or change the battery.
3. **On/off Switch:** Turns transmitter power on and off.
4. **Battery Compartment:** Insert two AA or AAA batteries into the compartment and make sure that the polarity of batteries is correct.
5. **Battery Cover:** Unscrew to expose battery compartment.

### 5.3 Bodypack Transmitter

The bodypack transmitter operates in VHF high band frequency range 150~260MHz with quartz-locked control. Uni-directional condenser capsules with different characters for various choices. Use 1.5V x 2 AA size batteries for low operating cost.



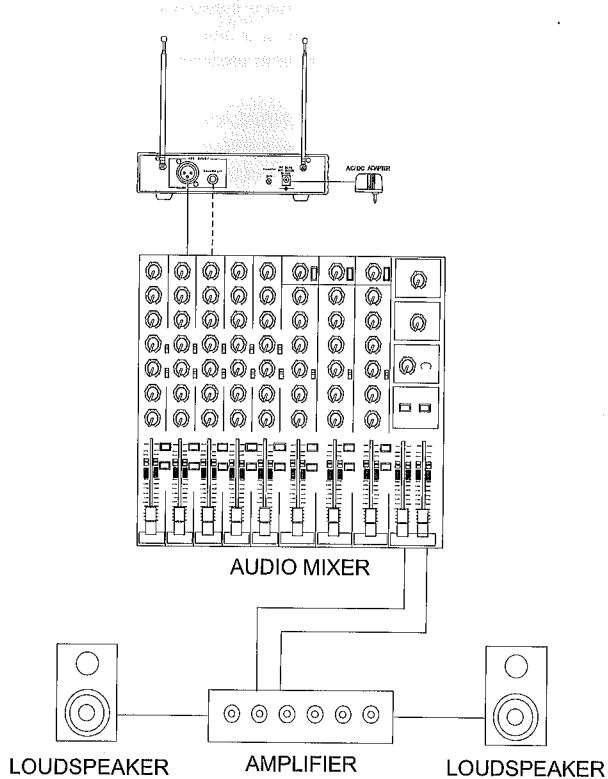
1. **On/Off Switch:** Turns transmitter power on and off.
2. **3.5φ connector:** The included electret lapel microphone is inserted into the connector on transmitter.
3. **Low Battery LED:** LED indicates battery life status. Switching the power to "ON", the LED flashing once indicates that the transmitter has sufficient power. If the LED stayed on, it indicates that the battery has insufficient power and should be changed soon. If the status LED fails to flash, the battery is either dead or not positioned correctly, and you should correct the positioning or change the battery.
4. **Mic Unit:** The uni-directional electret condenser unit features the wide frequency response for warm, rich bass and clear sound.
5. **Tie Clip:** To clip on the tie or lapel for free-movement.
6. **Cable:** With 3.5φ screw type plug cable to connect the transmitter. This cable is also regard as transmission antenna, so please extend it as straight as possible.
7. **Gain:** The rotary control adjusts the sensitivity of the transmitters audio to the level of the connected lapel microphone or instrument.
8. **Battery Compartment:** Insert two AA batteries into the compartment and make sure that the polarity of batteries is correct.



## 6. Basic Connections

Connect the receiver output to the mixer or amplifier input, using a standard audio cable with a female 3-pin XLR connector or 6.3 $\phi$  phone plug.

Never use the two audio outputs (balanced and unbalanced audio output) at the same time! This may cause signal loss or increased noise



## 7. Setting Up

Prior to setting up, check that the transmitter and receiver are tuned to the same frequency. Two or above transmitters operating in the same frequency can not be used at the same time and area, so please select the different frequencies which can be used simultaneously at local area.

### 7.1 Connecting the receiver to a mixer or an amplifier

- When the receiver has a balanced XLR output, use a standard XLR cable to connect the BALANCED connector on the receiver rear panel to a balanced XLR microphone input on the mixer. Turn the VOLUME control on the receiver in clockwise to set the receiver output to microphone level.
- Use a standard 6.3φ plug cable to connect the UNBALANCED connector on the receiver rear panel to an unbalanced line input on the mixer or on the amplifier. Turn the VOLUME control on the receiver in clockwise to set the receiver output to microphone level.

Never use the two audio outputs at the same time! This may cause signal loss or increased noise.

### 7.2 Connecting the receiver to power

- Point the antennas upward.
- Check that the voltage of the supplied AC adapter conforms to the voltage available in local area. Using the wrong AC adapter may cause irreparable damage to the unit.
- Plug the feeder cable of the supplied AC adapter into DC IN socket on the receiver. Then plug the AC adapter into a power outlet.

### 7.3 Inserting batteries into the handheld / bodypack transmitter

- Open the battery cover and insert batteries into the battery compartment conforming to the polarity (+)(-) marks. The transmitter can not work with incorrectly inserted batteries.
- When push the ON/OFF switch to "ON" to switch the power on, the LED will flash momentarily. If the battery has sufficient power, the LED flashes once. If the LED stayed on, it indicates that the battery has insufficient power and should be changed soon. If the status LED fails to flash, the battery is either dead or not positioned correctly, and you should correct the positioning or change the battery.
- Push back the battery cover to click it shut.

### 7.4 Setting up the handheld transmitter

- Switch the receiver power on and check the frequency and volume level.
- Switch the transmitter and hi-fi appliance (amplifier, tape deck etc.) power on.
- Test the microphone and adjust the levels on your mixer or amplifier.

### 7.5 Setting up the bodypack transmitter

- Use the supplied screwdriver to adjust the GAIN at appropriate position.
- Plug the 3.5φ connector end of the microphone cable into the audio input connector on the bodypack transmitter.
- Switch the transmitter and hi-fi appliance (amplifier, tape deck etc.) power on.
- Test the microphone and adjust the levels on your mixer or amplifier.



**NOTICE**

1. Before checking sound, move the transmitter around the area where you use the system to look for dead spots. If you find any dead spot, change the receiver position. If it does not work, avoid such places.
2. If undesirable noise occurs, adjust the SQUELCH control on receiver in clockwise to suppress it. The higher squelch control, the lower the sensitivity of the receiver and decrease the service area of the system.

**8. Trouble-shooting**

| <b>Problem</b>     | <b>Solution</b>   |
|--------------------|---|
| No sound           | <ul style="list-style-type: none"><li>➤ Check the power supply of the microphone and receiver.</li><li>➤ Check that the transmitter and receiver are tuned to the same frequency.</li><li>➤ Check whether the hi-fi appliance is switched on and the receiver output is connected to mixer or amplifier input.</li><li>➤ Check whether transmitter is too far away from receiver or SQUELCH control set too high.</li><li>➤ Check whether receiver is located too near metal object or there are obstructions between transmitter and receiver.</li></ul> |
| Sound interference | <ul style="list-style-type: none"><li>➤ Check the antenna location.</li><li>➤ When using 2 or above microphone sets simultaneously, make sure that the chosen frequencies are not interfered.</li><li>➤ Check whether the interference comes from other wireless microphones, TV, radio and etc.</li></ul>  |
| Distortion         | <ul style="list-style-type: none"><li>➤ Check the gain control (Mic Adj.) for bodypack transmitter is set too high or too low.</li><li>➤ Check whether the interference comes from other wireless microphones, TV, radio and etc.</li></ul>   |

## 9. System Feature

- Operating in VHF band frequency with quartz-locked controlled.
- Squelch circuit design for external noise-free reception.
- High quality design: audio frequency response 50Hz ~20 KHz, S/N ratio more than 100dB and T.H.D. less than 1%.
- Effective range between receiver and microphone can reach over 30 meters (sight in line).
- Transmitter uses 1.5V AA or AAA size batteries for low operating cost.

## 10. System Specification

### Receiver

|                              |  |
|------------------------------|--|
| Carrier Frequency Range      | : VHF 150~260MHz   |
| Frequency Stability          | : $\pm 0.005\%$ with quartz-locked control   |
| S/N Ratio                    | : $> 94\text{dB}$ , at RF=1mV  |
| Image and Spurious Rejection | : 80 dB minimum.   |
| Receiving Sensitivity        | : at 10 dB $\mu\text{V}$ over 80 dB S/N ratio.   |
| Selectivity                  | : $> 50\text{dB}$  |
| Dynamic Range                | : $> 96\text{dB}$  |
| Modulation Mode              | : FM.  |
| IF Frequency                 | : 10.7MHz  |
| AF Response                  | : 50Hz~20KHz ( $\pm 3\text{dB}$ )  |
| T.H.D.                       | : $< 1\%$ (at 1KHz)  |
| Audio Output                 | : Balanced and/or unbalanced output  |
| Power Supply                 | : DC 12V   |
| Dimensions                   | : 210(W) x 165(D) x 44(H) mm (Single channel, Diversity)<br>270(W) x 135(D) x 35(H) mm (Single channel, Diversity)<br>160(W) x 140(D) x 40(H) mm (Single channel, Non-Diversity) |

### Handheld / Bodypack Transmitter

|                         |  |
|-------------------------|--|
| Carrier Frequency Range | : VHF 150~260MHz   |
| RF Power Output         | : 10mW (max.)  |
| Frequency Stability     | : $\pm 0.005\%$ with quartz-locked control   |
| Maximum Deviation       | : $\pm 15\text{KHz}$   |
| T.H.D.                  | : $< 1\%$ (at 1KHz)  |
| Microphone Capsule      | : Handheld: uni-directional dynamic<br>or uni-directional electret condenser unit<br>Lavalier: uni-directional electret condenser unit |
| Operating voltage       | : 1.5V x 2 AA or AAA size batteries  |
| Current consumption     | : 35mA $\pm$ 5mA at 2.4V   |

DESIGN AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

