

2.4GHZ Digital Wireless Microphone System



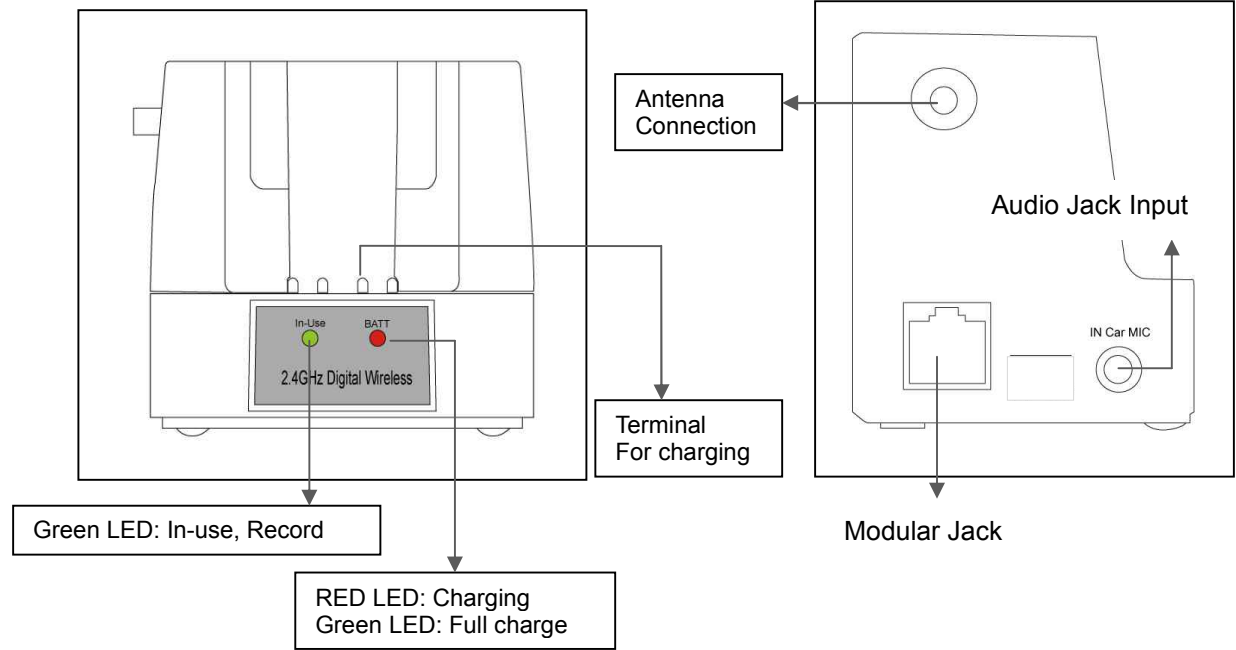
USER GUIDE

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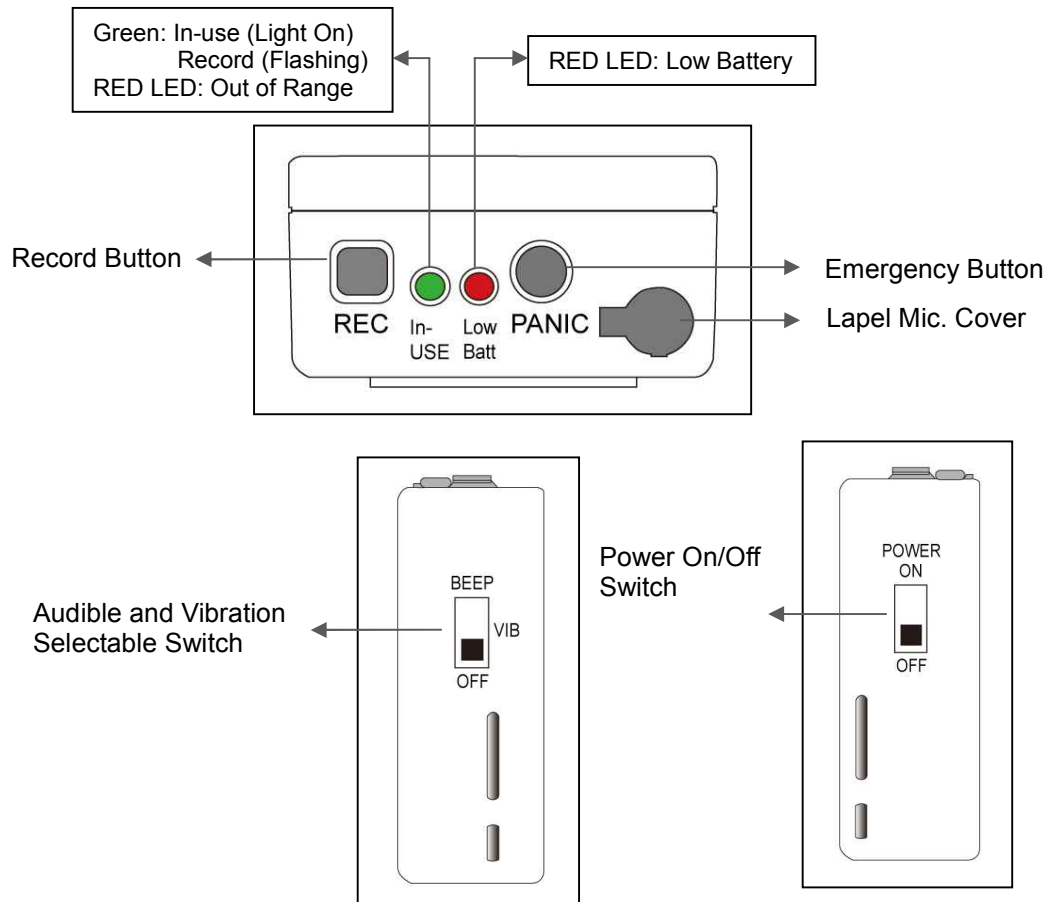
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DESCRIPTION

Receiver



Transmitter



1. QUICK SET UP AND OPERATION

Synching Up the Transmitter and Base

The synch operation only needs to be performed the first time a system is used, or a new bodypack is used with a base previously synched to another bodypack. **Do not perform the synch operation multiple times; it only needs to be done one time when a new bodypack is used with a new base.**

- 1) Turn the transmitter power switch to ON and place the transmitter in the recharge cradle of the base. The transmitter goes in the base with the belt clip facing out.
- 2) The recharge LED will light (Green if fully charged, Red if charging). Leave the transmitter in the cradle for 4 hours for a full charge.
- 3) Press the REC button on the transmitter and hold until the In-Use LED on the transmitter and base start to flash, then release the button.
- 4) After a few seconds the light will stop flashing, and a beep will sound (If the beep is enabled).
- 5) The transmitter and base are now synched and will continue to be until another transmitter is linked to that base.

Normal Operation

- 1) With the transmitter synched up, remove it from the cradle, plug in the lapel microphone (if used) and place the transmitter on your belt.
- 2) When you remove Transmitter from the cradle, The TR and Base's In-USE LED will light a constant Green and you will hear short beep. To start the recording, press the REC button and the In-Use LED will blink in green.
- 3) To end recording, press the REC button and the In-Use LED will light a constant green.
- 4) At the end of your shift turn the transmitter off and replace it in the charging cradle.

Out of Range

- 1) The transmitter will alert you with Audible warning beeps (two tone) and the In-Use LED will blink in red.
- 2) Move closer to the receiver base and the link will be re-established once you return to normal range. The In-Use LED will light constant green when link is back to normal operation.
- 3) If the link is not re-established within 30 seconds, the transmitter and receiver will return to standby mode.
- 4) If you went out of range in Standby mode, or the unit reverted to standby mode, re-enter normal range and press the In-Use button. Operation will return to normal.
- 5) If you will be out of range for a long period of time, turn the bodypack off.

Low Battery Warning

- 1) If the transmitter Low BATT indicator (red) starts flashing or you hear warning beeps, return the transmitter to its cradle on the receiver to fully charge the transmitter.
- 2) The Charge LED indicator will light constant green when the unit is fully charged.

EMG Panic Button (if wired for use in your vehicle)

- 1) The EMG or Panic Button can be programmed to do many things but may not be connected in your vehicle. Check with your technical department to understand what this button will control before you use it.
- 2) In Record mode: Press the EMG button on the transmitter, a beep will sound and the relay will be triggered at the receiver.
- 3) In Standby mode: Press the EMG button on the transmitter, a beep will sound, the green In-Use indicator will blink and the relay will be triggered at the receiver.

Disabling the Beep Sound On the Transmitter

- 1) All of the audible beep signals on the transmitter can be disabled by setting the BEEP switch to the off position.

Record Trigger (if video recording equipment supports)

- 1) The Record trigger feature is used to turn on recording whenever the video recorder is turned on. Some video record units can be triggered by other events (lights and siren being turned on etc.) and ensures the microphone starts recording at the same time.
The transmitter must be turned on and in standby mode.
- 2) A +12V signal on the line means the microphone is Record off.
- 3) 0V or ground on the line turns on the microphone is Record on.

2. INSTALLATION

PIN DESCRIPTION OF THE BASE OUTPUT PORT

Connector wire (RJ45)

Pin #1 : Transmitter Audio out

Pin #2 : In Car Mic. Audio out

Pin #3 : 12V DC_IN

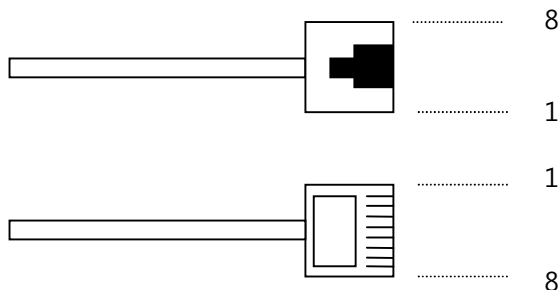
Pin #4 : Ground

Pin #5 : Record Trigger OUT

Pin #6 : Record Trigger IN

Pin #7 : Panic Trigger Out

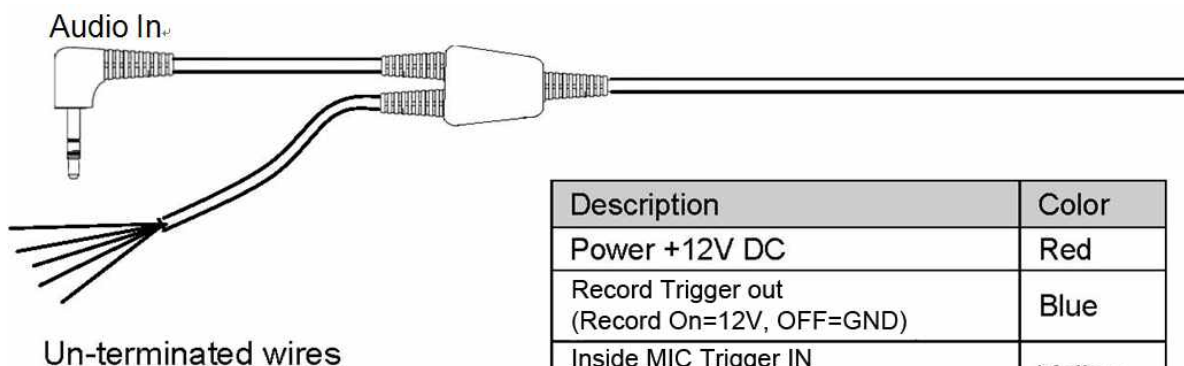
Pin #8 : In Car Mic. Trigger IN



Terminated Connector (Optional)

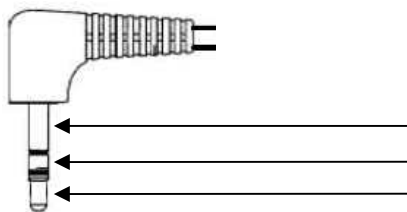
Type A

- 1) Wire the un-terminated signal wires to the control unit according to the signal chart. 5 Amp fast blow fuse is recommend in the 12VDC power supply line to protect the equipment.



Description	Color
Power +12V DC	Red
Record Trigger out (Record On=12V, OFF=GND)	Blue
Inside MIC Trigger IN (Ground to enable, OFF=12V)	Yellow
Power Ground	Orange
AUX (Panic) Trigger OUT 12V+ DC Output when EMG button is pushed , OFF=GND	Black
Record Trigger IN (5V+DC to 0V to turn on REC LED On 0V to 5V+DC to turn off REC LED Off)	GRAY

- 2) Plug the 3.5mm stereo plug into the audio input jack of the recording device.

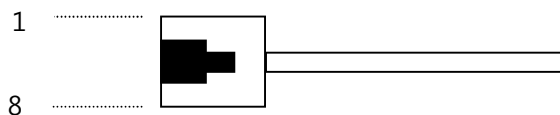


Description	Position
Audio Ground	Sleeve
Transmitter Audio	Ring
Inside Car Mic. Audio	Tip

- 3) If it is to be used, plug in the in-car microphone into the In-Car Mic jack in the side of the receiver base.
- 4) Turn on the transmitter and place it in the charging cradle with the beltclip facing out. The Charge LED will light if there is power. If the LEDs do not come on, check the connections and repeat.

Type B

Wire the un-terminated signal wires to the control unit according to the signal chart. A 5 Amp fast blow fuse is recommend in the 12VDC power supply line to protect the equipment.

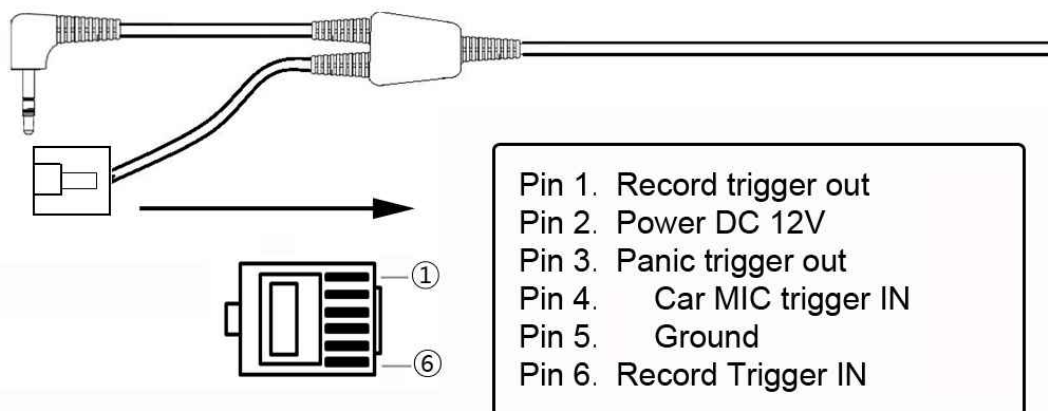


Pin #1 : Transmitter Audio out
Pin #2 : In Car Mic. Audio out
Pin #3 : 12V DC_IN
Pin #4 : Ground
Pin #5 : Record Trigger Out
Pin #6 : Record Trigger IN
Pin #7 : Panic Trigger Out
Pin #8 : In Car Mic. Trigger IN

Type C

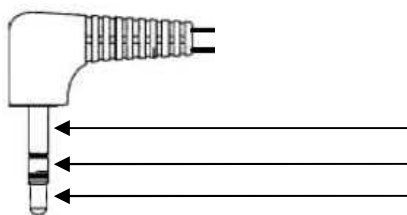
Wire the un-terminated signal wires to the control unit according to the signal chart. A 5 Amp fast blow fuse is recommend in the 12VDC power supply line to protect the equipment.

Audio In.



Pin 1. Record trigger out
Pin 2. Power DC 12V
Pin 3. Panic trigger out
Pin 4. Car MIC trigger IN
Pin 5. Ground
Pin 6. Record Trigger IN

- 1) Plug the 3.5mm stereo plug into the audio input jack of the recording device.



Description	Position
Audio Ground	Sleeve
Transmitter Audio	Ring
Inside Car Mic. Audio	Tip

- 2) If it is to be used, plug in the in-car microphone into the In-Car Mic jack in the side of the receiver base.
- 3) Turn on the transmitter and place it in the charging cradle with the beltclip facing out. The Charge LED will light if there is power. If the LEDs do not come on, check the connections and repeat.

Installation is complete. Refer to Operation Section for more information.

3. GUIDELINES AND RECOMMENDATIONS FOR BEST PERFORMANCE

Compatibility

The transmitter and receiver must synchronize to work together (see Synch process on page 3). The synch operation only needs to be performed the first time a system is used, or when a new bodypack is used with a base previously synched to another bodypack. **Do not synch multiple times, just once until a new bodypack is used.** Any Base can be synchronized with any Transmitter.

Using Multiple Wireless Systems

The PW24 system has 95 possible “channels” that are really different frequency hopping schemes. Each synchronized base and transmitter will automatically find a clear channel so up to 40 systems can work together in one location depending on other interference problems

Potential Sources of Interference

There are many potential sources of interference for your wireless system. Any electronic product that contains digital circuitry including digital signal processors (reverb/multi-effects units), electronic keyboards, digital lighting controllers, CD and DVD players, and computers, all emit RF energy that can adversely affect the performance of your wireless system. It is always best to place the receiver as far away as possible from these devices to minimize potential problems.

The PW24 operates in the 2.4MHz ISM band and other devices in that band may interfere. The spread spectrum technique used in the PW24 is very robust and should operate even in the presence of other 2.4MHz devices such as walkie-talkies, LANs, cordless phones, etc. in the area.

Battery Recommendations

The Lithium-Ion battery built into the PW24 transmitter will work at full capacity for over 500 charge cycles. If you notice lower than usual battery life over time, it may be time to replace the cell

Warnings

Do not use this product in or near water, i.e. near a bathtub, sink, or swimming pool.

Do not use this product in the vicinity of a gas leak or to report a gas leak.

4. TROUBLE SHOOTING GUIDE

Problem	Possible Causes	Solutions
No audio and no In-Use LED light on the receiver when Transmitter is on and In-use	Receiver is not powered	Make sure that the power supply is properly connected
	Transmitter and receiver not synchronized	Turn on transmitter and place in recharge cradle. Press the In-use button until the In-Use LEDs flash 3 and the fair will be synched
No(or low) Audio with all in-Use LEDs solid green	Lapel Microphone not connected or positioned properly	Check the mic. connection and Placement of the microphone
	Receiver audio output cable is Damaged or disconnected	Connect, repair or replace cable
Interference	Another 2.4GHz device in the Area causing interference	Push the In-Use button and the PWW24 will automatically select a clear channel. If the interference is too strong, this may not completely eliminate it.
Shot range or drop-outs	RF reflective metal obstacles between the transmitter and receiver	Move the obstacles, or reposition the receiver if possible
In-Use LED on bodypack flashes red and two tone beep sounds	Transmitter is out of range	Move closer to the receiver
Variable sync times or failure to synch	Synch process run more than one time with same pair	Power cycle the base station and Synch one time.

5. TECHNICAL SPECIFICATIONS

RECEIVER BASE STATION

Controls

Video Trigger Active +12/GND

Indicators

INUSE LED: GREEN
CHARGE LED : CHARGING -> RED
FULL CHARGED -> GREEN
RECORD LED GREEN FLASHING

Connections

In Car Mic. 2.5mm Mono Plug
Un-terminated Cord
RED +12V DC Power
BLUE Record Trigger out (Record on =DC12V, OFF= GND)
YELLOW Inside MIC Trigger IN (Ground to enable, OFF=12V)
ORANGE POWER GROUND
BLACK AUX (Panic) Trigger out (+12V when EMG is pushed, OFF=GND)
GRAY RECORD TRIGGER IN (GND= RECORD LED ON, +5V DC REC LED OFF)
Audio Connector
Tip Inside Car Mic
Ring Transmitter Audio
Sleeve Audio Ground

RF Specifications

Frequency Range: 2.4GHz
Number of Channels: 95 possible Diversity:
Internal antenna Receiver Type: FHSS
RF Sensitivity: -102 +/-3 dBm FCC type
acceptance: Approved Part 15

Audio Specifications

Frequency Response: 200 ~ 4000Hz +/- 3 dB Audio
Output Level: 3.6Vp-p
Distortion: Less than 2% Signal to
Noise Ratio: > 40 dB Dynamic
Range: > 50 dB

General Specifications

Range 1000feet typical Power
Supply: External 12 VDC Current
Draw: 190mA Typical
Size: 2.75in x 2.99in x 3.15in
(70mm x 76mm x 80mm)
Weight 233 g

Transmitter

Controls

On/Off Switch
Beep On/Off Switch
In Use Button Emergency
Button

Indicators

Red LED low battery indicator/Emergency indicator
Yellow LED In Use
Battery Internal Li-ion 3.7V/1300mAh cell
Battery Life 15 hours In Use with full charge
14days Standby
Battery Recharge Time 3.5 hours from full discharge
Antenna Internal
2.5mm Mic Connector Tip Signal, Sleeve Ground
Secondary Microphone Internal
RF Output 30 ~ 40 mW (typical)
Size 2.5 in. x 1.8 in. x 0.94 in.
64 mm x 46 mm x 24 mm
Weight 74 g

6. FACTORY SERVICE (NORTH AMERICA)

If factory service is required, ship the unit prepaid in its original carton to:

Wonwoousa Service

c/o Wonwoousa 2580 E. Philadelphia St. Suite A, Ontario, CA 91761 U.S.A.

Tel: 909/930-2320 or 888-4-966-966

Fax: 909/930-2321

Enclose a note describing the problem along with any other pertinent information and how to contact you

7. WARRANTY(Limited)

Wonwoousa products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid via UPS Ground. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, the customer must deliver the product, prepaid, to Wonwoousa together with proof of purchase of the product in the form of a bill of sale or receipted invoice. **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Wonwoousa shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. **Other Rights (United States Only):** This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. **Wonwoousa 2.4GHz Wireless Systems** are guaranteed against malfunction due to defects in materials or workmanship for a period of one (1) year from the date of original purchase. The Limited Warranty does not extend to cables or cable connectors. Additional details are included in the Uniform Limited Warranty Statement. Technical Assistance: 888-4-966-966(U.S. and Canada only)

FCC NOTICE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions :

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer of an experienced radio/TV technician for help.

NOTE : The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF RADIATION EXPOSURE STATEMENT

Your transmitter contains a low power transmitter. When the Push-to Talk button is pushed it sends out radio frequency (RF) signals. This device is authorized to operate at a duty factor not to exceed 50% in MARCH 2008 the Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

CAUTION: To maintain compliance with the FCC's RF exposure guidelines, hold the transmitter and antenna at least 1.0 inches (2.5 centimeters) from your face, with the antenna pointed up and away from the face, if you wear the handset on your body while using the headset accessory, use only the manufacturers supplied belt clip for this product and ensure that the antenna is at least 1.0 inch (2,5 centimeters) from your body when transmitting.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter. Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

This device has an output power of max 13mW, which no warning statements required. Now this device designed to be hold transmitter and antenna at least 1.0 inch (2.5cm) from your face. Therefore this device satisfies RF exposure compliance.

IMPORTANT SAFETY INSTRUCTIONS

When using your equipment, basis safety precautions should always be followed to reduce the risk of life electric shock, and injury to persons, including the following.

- Do not place near TV, speakers, or other electronic devices
- Before installation, check power supply and voltage to avoid hazards
- Do not apply force or shock to the unit
- Do not disassemble the unit
- Unplug this product from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near water, for example, near a bathtub, washbowl, kitchen sink, or laundry tub in a wet basement or near a swimming pool.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
- This product should be operated only from the type of power source indicated on the manual.
- To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified service contractor when some service or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the appliance is subsequently used.

Li-ion Battery safety precautions

- Use only the following type and the size battery : 1300mAh, 3.6V (Li-ion /3.6V, or equivalent)
- Do not dispose of the battery in a fire. The cell may explode. Check with local codes for possible special disposal instructions.
- Do not connect the positive terminal and the negative terminal of the battery to each other with any metal object (such as wire).
- Do not carry or store the batteries together with necklaces, hairpins, or other metal objects.
- Do not penetrate the battery with nails, strike the battery with a hammer, step on the battery, or otherwise subject it to strong impacts or shocks.
- Do not expose the battery to water or salt water, or allow the battery to get wet.
- Do not disassemble or modify the battery. The battery contains safety and protection devices which, if damaged, may cause the battery to generate heat, explode or ignite.
- Do not place the battery on or near fires, stoves, or other high temperature locations.
- Do not place the battery in direct sunshine, or use or store the battery inside cars in hot weather. Doing so may cause the battery to generate heat, explode, or ignite. Using the battery in this manner may also result in a loss of performance and a shortened life expectancy.
- Do not insert the battery into equipment designed to be hermetically sealed. In some cases hydrogen or oxygen may be discharge d from the cell which may result in rupture, fire or explosion.
- Do not continue charging the battery if it does not recharge within the specified charging time. Doing so may cause the battery to become hot, explode, or ignite.
- The temperature range over which the battery can be charged is 10°C to 45°C. Charging the battery at temperatures outside of this range may cause the battery to become hot or to break. Charging the battery outside of this temperature range may also harm the performance of the battery or reduce the battery's expectancy.
- The temperature range over which the battery can be discharged is -10°C to 60°C. Use of the battery outside of this temperature range may damage the performance of the battery or may reduce its life expectancy.

8. ACCESSORIES AND PARTS

Police Wireless PW24T/R		
Model	DESCRIPTION	
PW24T		Transmitter with internal microphone, battery, belt clip
PW24R		Receiver and recharge station, RJ45 cable
EXA24-10		External ANT – 10Feet
PWC-24		Optional TX Charger Base for PW24T
PLM-24		Lapel Microphone
PW24-IM		PW24R In Car Microphone