

# ***KT-24***

## ***2.4 GHZ POLICE AUDIO TRANSMITTER***



# **User Manual**

**Version 3.0**

# TABLE OF CONTENTS

<b>1. Quick Set Up and Operation.....</b>	<b>3</b>
<b>2. Installation.....</b>	<b>4</b>
<b>3. Guidelines for Best Performance.....</b>	<b>5</b>
<b>4. Troubleshooting Guide.....</b>	<b>6</b>
<b>5. Technical Specifications.....</b>	<b>7</b>
<b>6. Service and Warranty.....</b>	<b>8</b>
<b>7. Components and Accessories.....</b>	<b>8</b>

## 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) Make certain the Master/Slave switch on the side of the transmitter is in the Master (M) position.
- 2) 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 beltclip facing out.
- 3) 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 In-Use button on the transmitter and hold for 5 seconds (or until you hear beeps if the beep is enabled to confirm synch), then release the button.
- 4) 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) To start the recording, press the In-Use button and the In-Use LED will light a constant green and you will hear a short beep or feel a short vibration.
- 3) To end recording, press the In-Use button and the In-Use LED will turn off and you will hear a short beep or feel a vibration.
- 4) At the end of your shift turn the transmitter off and replace it in the charging cradle.

### Two Transmitter Operation on One Base

- 1) If one of the transmitters to be used with the base is already set to Master and synched to the base, skip to step 5.
- 2) Set the Master/Slave switch on one of the transmitters to Master (M), put the BEEP switch to BEEP and turn the power switch to ON. Then place the transmitter in the recharge cradle of the base.
- 3) Press the In-Use button on the transmitter and hold for 5 seconds or until you hear a beep, then release the button.
- 4) The Master transmitter is now synched to the base.
- 5) On the second transmitter, place the Master/Slave switch in the Slave (S) position.
- 6) Turn on the power and place the BEEP switch to BEEP and place the transmitter in the recharge cradle.
- 7) Press and hold the In-Use button for 5 seconds or until you hear a beep.
- 8) Both transmitters are now ready for use with this base. The master transmitter will control the video trigger relay and either will be able to trigger the Emergency relay.

### Low Battery Warning

- 1) If the transmitter Low BATT indicator (red) starts flashing or you hear warning beeps (or vibrations), 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.

### Out of Range

- 1) If you use the Transmitter too far away from the Receiver during recording, the transmitter will alert you with audible warning beeps (two tone) (or feel vibrations) 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.

#### 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 (or vibration) and the relay will be triggered at the receiver.
- 3) In Standby mode: Press the EMG button on the transmitter, a beep will sound (or vibration), the green In-Use indicator will blink and the relay will be triggered at the receiver.

#### Disabling the Beep Sound On the Transmitter

- 1) The Beep mode can be changed to vibrate mode by placing the BEEP switch to Vibrate (Vib).
- 2) All of the audible beep signals and vibrations on the transmitter can be disabled by setting the BEEP switch to the off position.

#### Auto Talk (if video recording equipment supports)

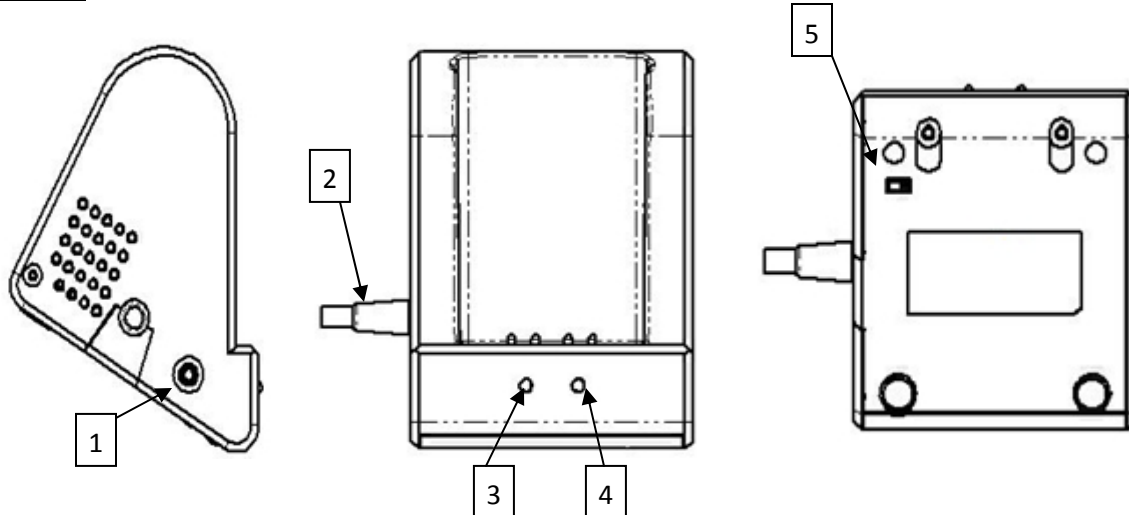
- 1) The Auto Talk feature is used to turn on the microphone whenever the video recorder is turned on. Some video record units can be triggered by other events (lights and siren being turned on etc.) and Auto Talk ensures the microphone starts recording at the same time. The transmitter must be turned on and in standby mode.
- 2) A +5V signal on the Auto Talk line means the microphone is off.

#### 0V or ground on the Auto Talk line turns on the microphone

## **COMPONENT DETAILS**

---

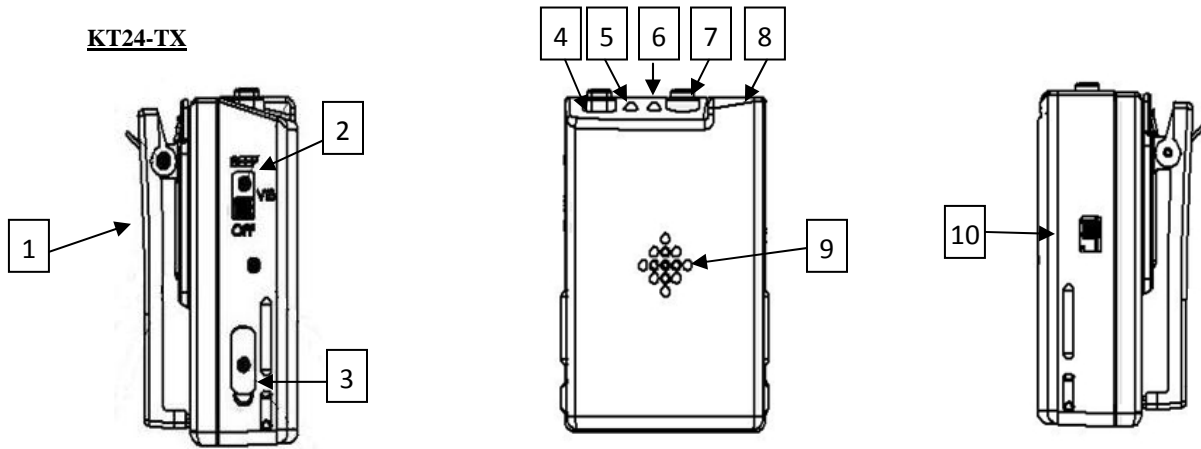
### KT24-RX



#### **Controls, Connectors and Details**

1. In-Car Microphone Input
2. Control and Audio Cable
3. In-Use LED (Green)
4. Charge LED (Red or Green)
5. Video Trigger Relay Signal Switch(Ground or +12V DC)

**KT24-TX**

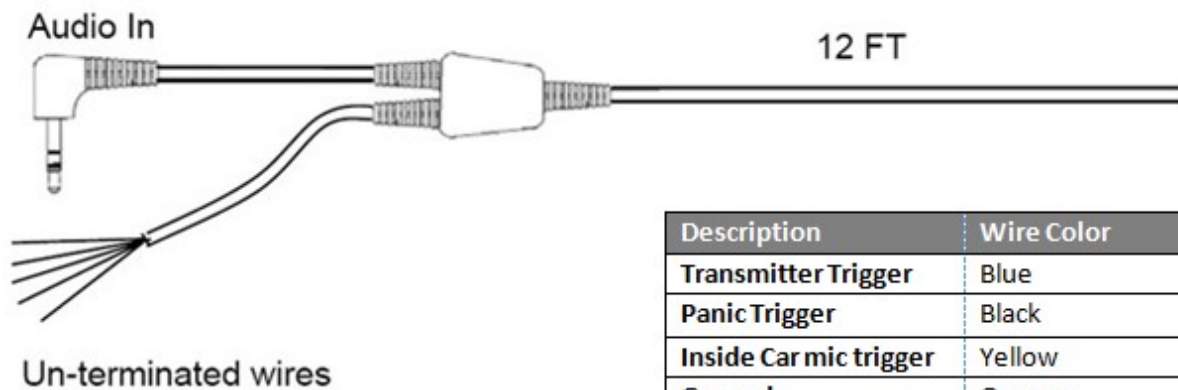


**Controls, Connectors and Details**

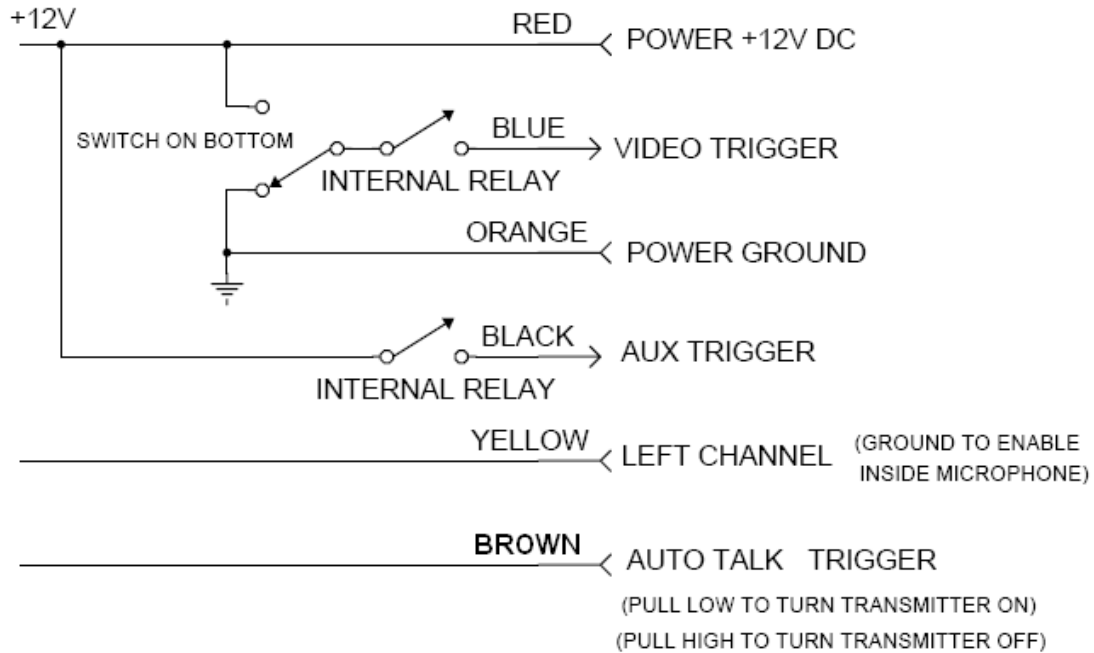
1. Belt Clip
2. BEEP Switch (BEEP, Vibrate (VB), or OFF)
3. Master/Slave Switch (M or S)
4. In Use Button
5. In-Use LED (Red or Green)
6. Low Battery LED (Red)
7. EMG Emergency Button
8. Microphone Input (1.5mm Jack)
9. Built in Microphone
10. Power Switch (ON or OFF)

**INSTALLATION**

1. 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.

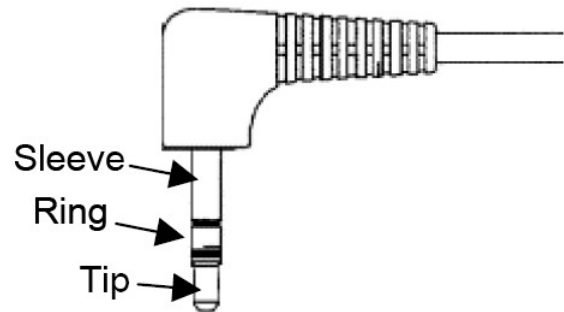


Description	Wire Color
Transmitter Trigger	Blue
Panic Trigger	Black
Inside Car mic trigger	Yellow
Ground	Orange
Power	Red
Auto-Talk Trigger	Grey



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

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



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 and the In-Use LED will flash three times. If these lights do not come on, check the connections and repeat.

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

## **Guidelines and Recommendations for Best Performance.**

### *Compatibility*

The transmitter and receiver must synchronize to work together by placing the transmitter into the charging cradle while on. The In-Use LEDs will flash three times and the two are synchronized (see synch process on page 3). Any KT24 can be synchronized with any KT24 base.

### *Using Multiple Wireless Systems*

The KT24 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 KT24 operates in the 2.4MHz ISM band and other devices in that band may interfere. The spread spectrum technique used in the KT24 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 KT24 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.

## 5) 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. In-Use LEDs should flash 3 times and the pair 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 KT24 will automatically select a clearer channel. If the interference is too strong, this may not completely eliminate it.
	RF reflective metal obstacles between the transmitter and receiver	Move the obstacles, or reposition the receiver if possible
Short range or drop-outs	Transmitter is out of range	Move closer to the receiver
In-Use LED on beltpack flashes red and two tone beep sounds		



## Technical Specifications

---

### MVP AUDIO RECEIVER BASE STATION

#### Indicators

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

#### Connections

In Car Mic	2.5mm Mono Plug
Un-terminated Cord	
RED	+12V DC Power
BLACK	Microphone Trigger (Ground = Transmitter On)
WHITE	AUX (Panic) Trigger (+12V when EMG is pushed)
YELLOW	Left Channel (Inside Mic)
ORANGE	Power Ground

#### Audio Connector

Tip	Inside Car Mic
Ring	Transmitter Audio
Sleeve	Audio Ground

#### RF Specifications

Frequency Range:	2.4GHz
Number of Channels:	40 possible
Diversity:	Internal antenna
Receiver Type:	DSSS
RF Sensitivity:	-102 +/-3 dBm(I,Q signal level at -3dB point))
FCC type acceptance:	Approved under Part 15

#### Audio Specifications

Frequency Response:	200 ~ 3400Hz +/- 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	800 feet 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

### MVP AUDIO Transmitter

#### Controls

- 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 8 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

## Factory Service (North America)

---

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

KCI Communications, Inc.  
1050 Ensell Road, Suite 100  
Lake Zurich, IL 60647 U.S.A.  
Tel: 847.550.9885 or 866.MVP.0911  
Fax: 847.550.9895

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

## Warranty (Limited)

---

KCI 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 KCI 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. KCI 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.

**KCI 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. Technical Assistance: 847.550.9885 x 54.

## Parts and Accessories

---

Item	Part #	Description
MVP Audio system	KT24-PK	One KT24 transmitter and one KT24 receiver, no microphone
MVP Transmitter	KT24-TX	Body transmitter with internal mic, li-ion battery, belt-clip
MVP Receiver	KT24-RX	Receiver and charging station, un-terminated connection cable
MVP Charger	KT24-CH	Optional TX wall charger
MVP Lapel Mic	KT24-LP	Optional TX lapel microphone
MVP Car Mic	KT24-CM	Optional in-car microphone