

VHF/UHF FM TRANSCEIVER

# TK-250/TK-350

## INSTRUCTION MANUAL

KENWOOD CORPORATION

ENGLISH

# CONTENTS

THANK YOU .....	1
UNPACKING AND CHECKING EQUIPMENT .....	1
INSTALLING THE BATTERY PACK .....	1
SUPPLIED EQUIPMENT .....	2
INSTALLING THE CAP OVER THE SPEAKER-MIC JACKS .....	3
INSTALLING THE KEYPAD SUBSTITUTION PANEL .....	3
INSTALLING THE SPEAKER-MICROPHONE .....	3
PHYSICAL LAYOUT .....	4
DISPLAY .....	6
RECEIVING CALLS .....	7
CALLING OTHER STATIONS .....	7
AUDIBLE USER FEEDBACK TONES .....	7
Supervisory Tones .....	7
Warning Tones .....	7
SCAN OPERATION .....	8
General .....	8
Priority Scan .....	8
TIME-OUT TIMER .....	8
REPEATER TALK AROUND (TA) .....	8
BUSY CHANNEL LOCKOUT .....	9
DTMF KEYPAD (KDM-7 OPTION) .....	9
Manual Operation .....	9
Redialing .....	9
Storing DTMF Numbers for the Auto Dialer .....	9
Transmitting DTMF Numbers using the Auto Dialer .....	9
Automatic Number Identification (ANI) .....	10
4th Column DTMF Tones (A, B, C, D) .....	10
CHANNEL CHART .....	11

## Models Covered By This Manual:

- **TK-250:** VHF FM Transceiver
- **TK-350:** UHF FM Transceiver

This manual identifies and describes differences between the above versions.

## Notices To The User:

### **WARNING:**

*GOVERNMENT LAW PROHIBITS THE OPERATION OF UNLICENSED RADIO TRANSMITTERS WITHIN THE TERRITORIES UNDER GOVERNMENT CONTROL.*

*ILLEGAL OPERATION IS PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.*

*REFER SERVICE TO A QUALIFIED LICENSED OR CERTIFIED TECHNICIAN ONLY.*

**SAFETY:** It is important that the operator is aware of and understands hazards common to the operation of any transceiver.

### **WARNING:**

*EXPLOSIVE ATMOSPHERES (GASES, DUST, FUMES, etc.)  
Turn off and do not operate your transceiver while taking on fuel, or while parked in gasoline service stations.*

One or more of the following statements may be applicable:

### **FCC WARNING**

*This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.*

### **INFORMATION TO THE DIGITAL DEVICE USER REQUIRED BY THE FCC**

*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 generate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the 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 to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer for technical assistance.



### **ATTENTION (U.S.A. Only)**

*Nickel-Cadmium batteries must be recycled or disposed of properly. State laws may vary regarding the handling and disposal of Nickel-Cadmium batteries.*

*Please contact your Authorized KENWOOD Dealer for more information.*

# SUPPLIED EQUIPMENT

TK-250 Contents	Part Number	Quantity
Transceiver	—	1
Antenna		
• K or M version	T90-0450-XX	1
• K2 or M2 version	T90-0381-XX	1
Belt hook	J29-0616-XX	1
Screw set	N99-0387-XX	1
Locking bracket for speaker-mic	J21-4463-XX	1
Locking bracket for rubber cap	J21-4462-XX	1
Keypad substitution panel	A21-1544-XX	1
Rubber cap for speaker/mic jacks	B09-0344-XX	1
Plastic cover for speaker/mic jacks	B09-0359-XX	1
Warranty card (U.S.A. only)	B46-0409-XX	1
Instruction manual	B62-0446-XX	1

TK-350 Contents	Part Number	Quantity
Transceiver	—	1
Antenna		
• K, K2, K3 version, or M, M2, M3 version	T90-0380-XX	1
• K4 or M4 version	T90-0448-XX	1
Belt hook	J29-0616-XX	1
Screw set	N99-0387-XX	1
Locking bracket for speaker-mic	J21-4463-XX	1
Locking bracket for rubber cap	J21-4462-XX	1
Keypad substitution panel	A21-1544-XX	1
Rubber cap for speaker/mic jacks	B09-0344-XX	1
Plastic cover for speaker/mic jacks	B09-0359-XX	1
Warranty card (U.S.A. only)	B46-0409-XX	1
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Belt hook



Screw set



Locking bracket for speaker-mic



Locking bracket for rubber cap



Keypad substitution panel



Rubber cap for speaker/mic jacks



Plastic cover for speaker/mic jacks

## INSTALLING THE CAP OVER THE SPEAKER-MIC JACKS

Use the supplied screws to install the cap over the speaker-mic jacks if a speaker-microphone is not used.



Rubber cap

(2 mm x 4 mm screws)

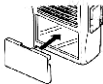


Plastic cover

(3 mm x 6 mm screw)

## INSTALLING THE KEYPAD SUBSTITUTION PANEL

Peel off only the smallest piece of protective paper from the double-sided adhesive strip, and press the exposed adhesive portion into position as shown. Without removing either the finger tab protective paper or the backing paper, remove the protective paper with holes, and press the rest of the adhesive strip into position. Holding the finger tab, peel off the backing paper and discard. Press the substitution panel firmly against the installed adhesive strip taking care to position the 2 alignment pins correctly.



## INSTALLING THE SPEAKER-MICROPHONE

- 1 Remove the cap from the **SP/MIC** jacks.



Rubber cap

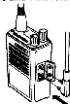


Plastic cover

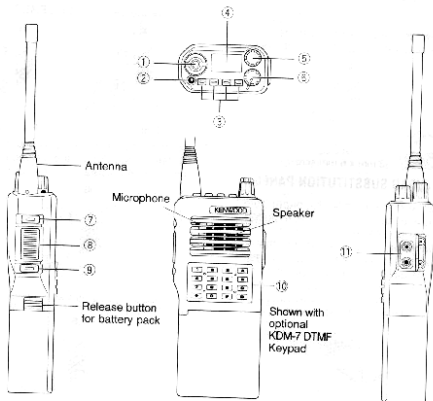
- 2 Insert the speaker-microphone plugs into the **SP/MIC** jacks. Attach the locking bracket using the 3 mm x 6 mm screw from the supplied screw set.



**Note:** To use the speaker-microphone temporarily, flip open the cap covering the **SP/MIC** jacks and insert the speaker-microphone plugs.



## PHYSICAL LAYOUT



① **ANTENNA connector**

Connect the supplied antenna to this connector.

② **Transmit/Receive indicator (LED)**

Lights red while transmitting. Flashes red while transmitting if the battery pack voltage is low. Recharge or replace the battery pack at this time.

If your dealer has activated the receive indicator function, the LED lights green while receiving a station, and flashes orange when the programmed station address is received. Press the **MONITOR** button to cancel the flashing state. The flashing indication only functions if your transceiver contains the selective call feature.

③ **Function keys**

These keys control the Scan, Delete/Add, Talk Around, and Transmit Low Power functions. Contact your dealer for further information.

④ **Liquid Crystal Display (LCD)** {page 6}

⑤ **CHANNEL selector**

Turn clockwise or counterclockwise to select your desired channel. A single beep sounds when the lowest channel number within each Group is selected.

⑥ **VOL/POWER control**

Turn clockwise to switch ON the transceiver. Turn counterclockwise fully to switch OFF the transceiver. Also adjusts the volume level.

⑦ **MONITOR button**

Press to listen to a channel before beginning to transmit.

⑧ **PTT (Push-to-Talk) switch**

Press and speak into the microphone to call another station.

⑨ **LAMP button**

Press to illuminate the Display. The Display light goes off approximately 5 seconds after the **LAMP** button is released. Pressing any key on the top panel while the Display is illuminated restarts the 5 second timer.

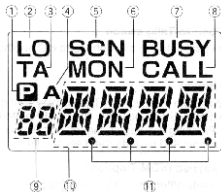
⑩ **DTMF keypad (KDM-7 option)**

Use to generate different DTMF tones {page 9}.

⑪ **External speaker-microphone jack (KMC-17 option)**

Connect an optional speaker-microphone here {page 3}.

## DISPLAY



### ① **P**

Appears when a Priority channel is being used.

### ② **LO**

Appears when the Transmit Low Power function is selected. When this indicator is not visible, the power that was set for each channel (High, Medium, or Low) via the Field Programming Unit (FPU) is used.

### ③ **TA**

Appears when the Talk Around function is activated.

### ④ **A**

Appears when the selected channel is assigned to the scan list.

### ⑤ **SCN**

Appears when the Scan function is activated.

### ⑥ **MON**

Appears when the monitor function is activated.

### ⑦ **BUSY**

Appears when a carrier is present on the selected channel.

### ⑧ **CALL**

Blinks when the correct signal is received for the current channel while the DTMF Decode function or the 2-Tone Decode function is activated.

### ⑨ **88**

Displays the selected Group number from 1 to 10.

### ⑩ **8888**

The 4-character alphanumeric display uses the middle 2 digits to show the channel number. The dealer can program 4-character channel names to replace the channel numbers. One channel name can be substituted for each channel number.

### ⑪ **...**

Appear when the scrambler function is activated.

**KENWOOD** does not offer a scrambler unit as an accessory, however, a commercially available unit can be installed.



## RECEIVING CALLS

Switch ON the transceiver by turning the **VOL/POWER** control clockwise. A "click" is heard. Turn the **CHANNEL** selector to select your regular operating channel.

*Note: if your transceiver is programmed with QT or DQT signaling, there will be virtually no noise coming from the speaker even at full volume. You will hear transmissions from other transceivers IN YOUR SYSTEM ONLY.*

*If your transceiver is not programmed with QT or DQT, you will hear ALL TRANSMISSIONS made by ANY stations using the channel. If no stations are transmitting, there will be no sound from your transceiver.*

To adjust the volume, turn the **VOL/POWER** control while receiving a message from your dispatcher.

## CALLING OTHER STATIONS

Calling other stations on your **KENWOOD** transceiver is easy. Press the **MONITOR** button, then listen for a few seconds to make certain the channel is not being used. Hold the transceiver about one and one-half inches from your lips, press the **PTT** switch, and speak in your normal speaking voice. Government regulations require that you identify the station you are calling and your own station.

The **Transmit/Receive** indicator lights red while you are transmitting. Release the **PTT** switch to return to the receive mode.

## AUDIBLE USER FEEDBACK TONES

The transceiver generates various tones that keep the user informed of the current transceiver status.

### ■ Supervisory Tones

#### Power-on Tone

Switching on the transceiver generates this tone.

#### Control Tones

Generated in the following situations:

- A function is activated (1 beep).
- A function is deactivated (2 beeps).
- The lowest programmed channel number within each Group is selected by the **CHANNEL** selector.

### ■ Warning Tones

Generated in the following situations:

- The Time-out Timer is activated.
- The Busy Channel Lock Out function is preventing transmission.
- A function key with no function assigned is pressed.
- Scan is attempted with fewer than the minimum number of channels in the scan list.

## SCAN OPERATION

### ■ General

If the scan function is programmed for the transceiver, you can activate the function by pressing the **SCN** key. This causes the transceiver to begin scanning. "SCN" appears on the Display while scanning is in progress. In addition, the word "SCAN" appears in the alphanumeric area, however, the channel number or channel name replaces the word "SCAN" when a call is received. You can then respond to the call by pressing the **PTT** switch and speaking into the microphone.

For scanning to resume, the following must be true:

- The **PTT** switch is released, and
- No signal is being received.

The transceiver continues scanning when these conditions are met.

### ■ Priority Scan

This transceiver monitors the Priority channel while receiving Non-priority channels. When a signal is received on the Priority channel, the transceiver switches immediately to the Priority channel.

## TIME-OUT TIMER

The purpose of the time-out timer is to automatically interrupt unnecessary continuous transmissions after a specified time elapses. The dealer can set the timer for any multiple of 30 seconds in the range of 30 seconds to 5 minutes. Holding the **PTT** switch down for longer than the programmed time causes the transceiver to stop transmitting and generate a warning tone. Releasing the **PTT** switch cancels the warning tone.

## REPEATER TALK AROUND (TA)

Normally, you will communicate with other stations by using repeaters that re-transmit your messages from an antenna system located on top of a high building, mountain, or tower. This allows dependable communications over a much larger area than is possible without a repeater.

Occasionally, a power failure or other cause at the repeater may result in an interruption of service that is not the fault of your **KENWOOD** transceiver. Your dealer may have provided the Talk-around function for use in such cases. This function allows communication directly with other transceivers without using a repeater. If attempts to make a call in the usual way do not succeed, activate your Talk-around function and try calling again. However, even Talk-around sometimes may not allow you to contact a station if the distance is too great or there are geographic obstacles in the way.

## ■ BUSY CHANNEL LOCKOUT

This function prevents you from interfering with other stations who may be using a channel. Pressing the **PTT** switch while the selected channel is in use causes your transceiver to generate an audible warning tone. Your transceiver is inhibited in this situation so it will not transmit. Release the **PTT** switch to cancel the alarm and restore the receive mode.

## DTMF KEYPAD (KDM-7 OPTION)

### ■ Manual Operation

Hold down the **PTT** switch and press the desired DTMF keys. The transceiver remains in the transmit state for 2 seconds after pressing each key. The Field Programming Unit allows you, if you prefer, to set up the transceiver so that simply pressing the DTMF keys will make DTMF calls.

### ■ Redialing

The entire DTMF number just sent can be re-transmitted by entering the following:

**[B] [0]**

The **[B]** key is the Memory Recall key.

### ■ Storing DTMF Numbers for the Auto Dialer

DTMF numbers with a maximum of 16 digits can be stored in any of the 9 memory channels.

**Example:** Store "0123456" in memory channel 7.

**[C] [7] [D] [0] [1] [2] [3] [4] [5] [6] [D]**

The **[C]** key is the Memory Write key and the **[D]** key is the Enter key. Using the Field Programming Unit, you can protect entered data so that it cannot be overwritten.

### ■ Transmitting DTMF Numbers using the Auto Dialer

To recall and transmit DTMF numbers stored in memory channels, enter "Bn" where n is the memory channel number.

**Example:** Transmit the number in memory channel 7.

**[B] [7]**

The **[B]** key is the Memory Recall key.

The transmit duration of the first digit, the \*, and the # can be extended by your dealer via the Field Programming Unit. Also, there is a short time delay before the first digit is transmitted. Single-tone beeps are generated by the transceiver during this setup period.

## ■ Automatic Number Identification (ANI)

The Automatic Number Identification function automatically sends a pre-programmed identifier as explained below. This ANI number is stored in the ANI memory and can only be modified by the Field Programming Unit; the number cannot be changed using the transceiver.

The dealer has programmed 1 of the Connect ANI methods and 1 of the Disconnect ANI methods shown below:

### Connect ANI

Method	User's Procedure
1	Press <b>PTT</b> .
2	Press <b>*</b> <b>*</b> .
3	Hold <b>PTT</b> + <b>*</b> <b>*</b> .

### Disconnect ANI

Method	User's Procedure
1	Release <b>PTT</b> .
2	Press <b>*</b> <b>#</b> .
3	Hold <b>PTT</b> + <b>*</b> <b>#</b> .

## ■ 4th Column DTMF Tones (A, B, C, D)

The DTMF tones associated with the A, B, C, and D keys can still be sent even if your transceiver is programmed for a 12-key keypad. The A key acts as a Function key. Press the A key first to select the second function mode, then press the appropriate numerical key for the desired tone as shown in the chart.

If the transceiver is programmed for a 16-key keypad by the dealer, pressing the A, B, C, or D key will generate its respective tone. However, the Auto Dialer cannot be used in this case.

### 12-key Keypad

DTMF Tone	Press
A	<b>A</b> <b>2</b>
B	<b>A</b> <b>5</b>
C	<b>A</b> <b>8</b>
D	<b>A</b> <b>0</b>

### 16-key Keypad

DTMF Tone	Press
A	<b>A</b>
B	<b>B</b>
C	<b>C</b>
D	<b>D</b>

## CHANNEL CHART

Model TK-\_\_\_\_\_

Serial No.: \_\_\_\_\_

Channel	RX Frequency	TX Frequency	Encode Signaling	Decode Signaling	Channel	RX Frequency	TX Frequency	Encode Signaling	Decode Signaling

Dealer Name & Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Dealer Telephone No.: (\_\_\_\_) \_\_\_\_\_

Date Purchased: \_\_\_\_/\_\_\_\_/\_\_\_\_