

# KENWOOD

## INSTRUCTION MANUAL



**ProTalk**

UHF FM TRANSCEIVER

# TK-3501

JVCKENWOOD Corporation

B62-2606-10



# CONTENTS

ORIENTATION.....	2
BASIC OPERATIONS .....	4
VOICE OPERATED TRANSMISSION (VOX).....	5
BACKGROUND OPERATIONS.....	6
CHANNEL SETUP MODE.....	7
PROGRAMMABLE FUNCTIONS.....	13
ALL RESET MODE .....	16
TROUBLESHOOTING GUIDE .....	17
OPTIONAL ACCESSORIES .....	18

## BATTERY LIFE

The operating times listed in the table below are measured under the following cyclic conditions:

Calculated using 5% transmit time, 5% receive time, and 90% standby time.

Battery Type	Operating Time/ Hours (Approx.)	
	Battery Saver On	Battery Saver Off
KNB-63L	20 h	14 h
KNB-65L	26 h	18 h

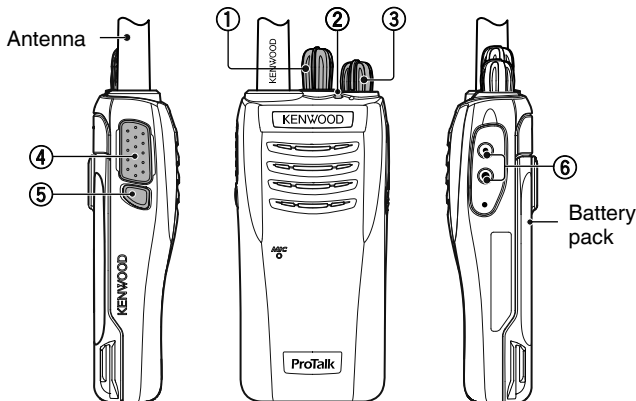
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# ORIENTATION

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## ① Channel selector

Rotate to change the operating channel.

- To change the operating frequency or QT/DQT settings of a channel, refer to “CHANNEL SETUP MODE” {p.7}.
- If enabled by your dealer, setting the Channel selector to the “S” position begins Scan. Refer to Scan for details on how Scan operates. {p.14}



## ② LED indicator

Refer to the LED indicator status. {p.3}

## ③ Power switch/ Volume control

Turn clockwise to switch the transceiver ON. To switch the transceiver OFF, turn counterclockwise until a click sounds. Rotate to adjust the volume level.

## ④ PTT (Push to Talk) switch

Press and hold, then speak into the microphone to transmit.

### ⑤ Side key

Press to activate its programmable function. The default press setting is **[Squelch Off Momentary]**. The default hold setting is None (no function).

- Refer to “PROGRAMMABLE FUNCTIONS” {p.13}.

### ⑥ Speaker/ microphone jacks

Insert the Speaker/ microphone or Headset plug into this jack.

## LED Indicator Status

Indicator Color	Meaning
Lights red	Transmitting
Lights green	Receiving a call
Blinks red	Battery power is low
Blinks green	Scanning
Blinks red/orange	The selected channel has not been programmed and cannot be used.

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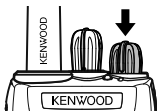
## BASIC OPERATIONS

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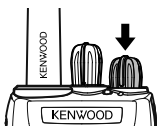
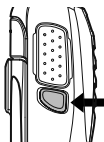
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- 1 Turn the **Power** switch/ **Volume** control clockwise to switch the transceiver power ON.

- A beep sounds if enabled by your dealer.

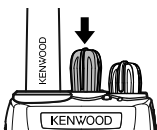


- 2 Press the key programmed with [**Monitor/ Monitor Momentary**] or [**Squelch Off/ Squelch Off Momentary**] (**Side** key default) to hear background noise, then rotate the **Power** switch/ **Volume** control to adjust the volume.



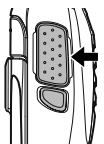
- 3 Rotate the Channel selector to select your desired channel. Refer to the channel list. {p.7}

- When you receive an appropriate signal, you will hear audio from the speaker.
- If enabled by your dealer, setting the Channel selector to the “S” position begins Scan. Refer to Scan for details on how Scan operates. {p.14}



- 4 To make a call, press and hold the **PTT** switch, then speak into the microphone using your normal speaking voice.

- Hold the microphone approximately 3 to 4 cm (1.5 inches) from your lips.



- 5 Release the **PTT** switch to receive.

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### Note:

- ◆ When the battery pack voltage becomes too low, transmission will stop and an alert tone will sound.

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## VOICE OPERATED TRANSMISSION (VOX)

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If enabled by your dealer, VOX operation allows you to transmit hands-free. VOX can only be used if you are using a supported headset. This function can be turned off for specific channels by your dealer. To activate VOX and set the VOX Gain level, perform the following steps:

- 1 Connect the headset to the transceiver .
  - The VOX function does not activate when a headset is not connected to the accessory terminal of the transceiver.
- 2 With the transceiver power OFF, press and hold the **Side** key while turning the transceiver power ON.
  - Continue to hold the **Side** key until the LED blinks green and red, and a beep sounds.
- 3 Rotate the **Channel** selector to set the VOX Gain level.
  - The VOX Gain level can be adjusted from level 1 to 10 and OFF. Channel numbers 1 to 10 represent VOX Gain levels 1 to 10. Channel numbers 11 to S set the VOX Gain to OFF.
  - To turn the VOX function off, set the VOX Gain level to OFF.
- 4 Press and hold the **Side** key for 2 seconds to save the setting.
  - A beep will sound.
  - To test the setting, speak into the microphone in your normal voice. The LED will light orange when the VOX function is operating.
- 5 Turn the transceiver power OFF and then ON again to activate VOX.

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### Note:

- ◆ If a headset is connected to the transceiver while the VOX function is switched ON and the VOX Gain level is configured to a higher, more sensitive level, louder received signals may cause the transceiver to start transmission.
  - ◆ The VOX Gain Level can only be adjusted if it is activated by your dealer.
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## BACKGROUND OPERATIONS

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### TIME-OUT TIMER (TOT)

The Time-out Timer prevent callers from using a channel for an extended duration. If you continuously transmit for the duration programmed by your dealer (default is 60 seconds), transmission will stop and an alert tone will sound. To stop the tone, release the **PTT** switch.

### BATTERY SAVER

When activated by your dealer, the Battery Saver function decreases the amount of power used after no signal is present and no operations are being performed for 5 seconds. When a signal is received or an operation is performed, Battery Saver turns off.

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**Note:** While the Battery Saver is operating, the LED may flash green when receiving a QT/DQT signal which does not match the QT/DQT tone/code set up in your transceiver.

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### LOW BATTERY WARNING

While operating the transceiver, the Low Battery Warning sounds an alert tone every 30 seconds and the LED indicator blinks red when the battery needs recharged or replaced.

### BUSY CHANNEL LOCKOUT

When activated, BCL prevents you from interfering on a channel that is already in use. Pressing the **PTT** switch will cause an alert tone to sound and the transceiver will not transmit. Release the **PTT** switch to stop the tone.

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**Note:** Ask your dealer for an explanation on how BCL functions when using QT or DQT signaling.

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### PROCEED TONE

If enabled by your dealer, when transmitting by pressing the **PTT** switch, the Proceed tone will sound.



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## CHANNEL SETUP MODE

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This transceiver allows you to reprogram each of the channels with different frequencies and QT (Quiet Talk)/ DQT (Digital Quiet Talk) settings. The table below lists the default channel settings.

Channel Number	Channel Setup Number	Frequency (MHz)	Tone Number	QT/DQT Setting
1	01	446.00625	10	94.8 Hz
2	08	446.09375	08	88.5 Hz
3	03	446.03125	13	103.5 Hz
4	06	446.06875	05	79.7 Hz
5	04	446.04375	17	118.8 Hz
6	02	446.01875	18	123.0 Hz
7	07	446.08125	19	127.3 Hz
8	05	446.05625	07	85.4 Hz
9	01	446.00625	14	107.2 Hz
10	08	446.09375	15	110.9 Hz
11	03	446.03125	16	114.8 Hz
12	06	446.06875	06	82.5 Hz
13	04	446.04375	27	D132N
14	02	446.01875	28	D155N
15	05	446.05625	29	D134N
16	07	446.08125	30	D243N

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### Note:

- ◆ You must first select an operating frequency for a channel before you can select a QT/ DQT setting for that same channel.
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## CHANNEL OPERATING FREQUENCIES

To change the operating frequency of a channel:

- 1 Select your desired channel using the **Channel** selector.
- 2 With the transceiver power OFF, press and hold the **PTT** switch while turning the transceiver power ON.
  - Continue to hold the **PTT** switch until the LED lights orange (approximately 2 seconds).
- 3 Release the **PTT** switch.
  - The transceiver emits a morse code of the current channel setting. Refer to the table below for the morse code output.
- 4 Press and hold the **Side** key for 1 second to change the 10's digit of the Channel Setup number to 0. Press the **Side** key to change the 10's digit of the Channel Setup number to 1.
  - Channel Setup numbers and their corresponding operating frequencies are provided in the table. {p.9}
  - After 1 second, the transceiver will emit a morse code of the current Channel Setup setting.
- 5 Press and hold the **Side** key for 1 second to change the 1's digit of the Channel Setup number to 0. Press the **Side** key to change the 1's digit of the Channel Setup number to (1 ~ 9).
  - After 1 second, the transceiver will emit a morse code of the current 1's digit Channel Setup number setting.
- 6 Press the **PTT** switch to save the setting.
  - The LED will blink red and a beep will sound.
  - The transceiver will automatically return to normal operation when no action is performed for approximately 6 seconds.

Setting Number	Morse Code	Setting Number	Morse Code
0	—	5	•••••
1	•—	6	—••••
2	••—	7	—•••
3	•••—	8	—••
4	••••—	9	—•

<b>Channel Setup Number</b>	<b>Operating Frequency</b>	<b>Channel Setup Number</b>	<b>Operating Frequency</b>
<b>00</b>	OFF		
<b>01</b>	446.00625 MHz	<b>09</b>	446.10625 MHz
<b>02</b>	446.01875 MHz	<b>10</b>	446.11875 MHz
<b>03</b>	446.03125 MHz	<b>11</b>	446.13125 MHz
<b>04</b>	446.04375 MHz	<b>12</b>	446.14375 MHz
<b>05</b>	446.05625 MHz	<b>13</b>	446.15625 MHz
<b>06</b>	446.06875 MHz	<b>14</b>	446.16875 MHz
<b>07</b>	446.08125 MHz	<b>15</b>	446.18125 MHz
<b>08</b>	446.09375 MHz	<b>16</b>	446.19375 MHz

## QT/ DQT SETTINGS

Quiet Talk (QT) and Digital Quiet Talk (DQT) are functions that reject undesired signals on your channel. You will hear a call only when you receive a signal that contains a matching QT tone or DQT code. If a call containing a different tone or code is received, squelch will not open and you will not hear the call. Likewise, when transmitting using QT or DQT, the receiving station must have a matching tone or code to hear your call.

Be aware that other parties can still hear your calls if they set up their transceiver with the same tone or code.

The default QT/DQT settings for each channel are provided in the table. {p.7}

To change the QT/DQT settings of a channel:

- 1 Select your desired channel using the **Channel** selector.
- 2 With the transceiver power OFF, press and hold the **Side** key while turning the transceiver power ON.
  - Continue to hold the **Side** key until the LED lights orange (approximately 2 seconds).
- 3 Release the **Side** key.
  - The transceiver emits a morse code of the current channel setting (refer to the table for the morse code output). {p.12}
- 4 Press and hold the **Side** key for 1 second to change the 10's digit of the Tone number to 0. Press the **Side** key to change the 10's digit of the Tone number to (1 ~ 3).
  - Tone numbers and their corresponding QT tones/ DQT codes are provided in the table below.
  - After 1 second, the transceiver will emit a morse code of the current 10's digit Tone number setting.
- 5 Press and hold the **Side** key for 1 second to change the 1's digit of the Tone number to 0. Press the **Side** key to change the 1's digit of the Tone number to (1 ~ 9).
  - After 1 second, the transceiver will emit a morse code of the current 1's digit Tone number setting.

**6** Press the **PTT** switch to save the setting.

- The LED will blink red and a beep will sound.
- The transceiver will automatically return to normal operation when no action is performed for approximately 6 seconds.

<b>Tone Number</b>	<b>QT/DQT Setting</b>	<b>Tone Number</b>	<b>QT/DQT Setting</b>	<b>Tone Number</b>	<b>QT/DQT Setting</b>
<b>01</b>	67.0 Hz	<b>14</b>	107.2 Hz	<b>27</b>	D132N
<b>02</b>	71.9 Hz	<b>15</b>	110.9 Hz	<b>28</b>	D155N
<b>03</b>	74.4 Hz	<b>16</b>	114.8 Hz	<b>29</b>	D134N
<b>04</b>	77.0 Hz	<b>17</b>	118.8 Hz	<b>30</b>	D243N
<b>05</b>	79.7 Hz	<b>18</b>	123.0 Hz	<b>31</b>	D311N
<b>06</b>	82.5 Hz	<b>19</b>	127.3 Hz	<b>32</b>	D346N
<b>07</b>	85.4 Hz	<b>20</b>	131.8 Hz	<b>33</b>	D315N
<b>08</b>	88.5 Hz	<b>21</b>	136.5 Hz	<b>34</b>	D351N
<b>09</b>	91.5 Hz	<b>22</b>	141.3 Hz	<b>35</b>	D423N
<b>10</b>	94.8 Hz	<b>23</b>	146.2 Hz	<b>36</b>	D664N
<b>11</b>	97.4 Hz	<b>24</b>	151.4 Hz	<b>37</b>	D431N
<b>12</b>	100.0 Hz	<b>25</b>	156.7 Hz	<b>38</b>	D723N
<b>13</b>	103.5 Hz	<b>26</b>	162.2 Hz	<b>00</b>	OFF

## CHANNEL CONFIRMATION MODE

To confirm your channel frequency setting:

- 1 With the transceiver power OFF, press and hold the **PTT** switch while turning the transceiver power ON.
  - Continue to hold the **PTT** switch until the LED lights orange (approximately 2 seconds).
- 2 Release the **PTT** switch.
  - The transceiver emits a morse code of the current channel setting. Refer to the table for the morse code output. {p.8}
- 3 Rotate the **Channel** selector to your desired channel within 6 seconds, otherwise the operation will cancel.
  - The transceiver emits a morse code of the current channel setting.
  - The transceiver will automatically return to normal operation when no action is performed for approximately 6 seconds.

To confirm your channel QT/DQT setting:

- 1 With the transceiver power OFF, press and hold the **Side** key while turning the transceiver power ON.
  - Continue to hold the **Side** key until the LED lights orange (approximately 2 seconds).
- 2 Release the **Side** key.
  - The transceiver emits a morse code of the current channel setting. Refer to the table for the morse code output. {p.8}
- 3 Rotate the **Channel** selector to your desired channel within 6 seconds, otherwise the operation will cancel.
  - The transceiver emits a morse code of the current channel setting.
  - The transceiver will automatically return to normal operation when no action is performed for approximately 6 seconds.

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## PROGRAMMABLE FUNCTIONS

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Your dealer can program the **Side** key with a “Press” function and a “Hold” function. The default Press function is [**Squelch Off Momentary**] and the default Hold function is None (no function). Following is a list of programmable functions with details on how they operate.

### ■ **Calling Alert**

Calling alert tones help identify yourself to party members and inform them that you are calling. Your dealer can set up your transceiver with 1 of 10 calling alert tones. If each party member uses a different tone, it is easy to know who is calling. To make a call, press and hold the key programmed as Calling Alert. Release the key to end the tone.

### ■ **Key Lock**

Hold this key for 1 second to lock/ unlock the transceiver keys. While Key Lock is active, the following operations cannot be performed:

- Channel Setup mode
- VOX Setup mode
- All Reset mode
- Channel selector
- Channel selector S position (Scan)
- Scan
- Scan Temporary Delete

### ■ **Monitor**

Press this key to deactivate QT or DQT signaling. Press the key again to return to normal operation.

### ■ **Monitor Momentary**

Press and hold this key to deactivate QT or DQT signaling. Release the key to return to normal operation.

## ■ Scan

Press this key to start scanning the transceiver channels. (If enabled by your dealer, setting the **Channel** selector to the “S” position will also begin Scan.)

**Priority Scan:** If enabled by your dealer, the Priority channel is a channel that is given first priority while scanning. The Priority channel is set by your dealer.

**Selected Priority Scan:** If enabled by your dealer, the Selected Priority channel is a channel that is given first priority while scanning. The Selected Priority channel is the channel you have selected with the **Channel** selector, before beginning Scan. (Selected Priority Scan cannot function when beginning Scan by setting the **Channel** selector to the “S” position.)

**Revert Channel:** During Scan, pressing the **PTT** switch will automatically select the transceiver’s Revert channel and you will begin transmitting. Your dealer can program the Revert channel using one of the following methods:

- **Selected:** You will always transmit on the channel selected prior to beginning Scan.
- **Selected + Talkback:** Same as “Selected”, but if you are currently paused at a channel, you will transmit on the current channel.
- **Priority:** You will always transmit on the Priority channel.
- **Priority + Talkback:** Same as “Priority”, but if you are currently paused at a channel, you will transmit on the current channel.
- **Fixed Channel + Talkback:** This setting is used only when Scan begins by using the **Channel** selector “S” position. You will always transmit on a preselected fixed channel (set by your dealer), but if you are currently paused at a channel, you will transmit on the current channel.



### ■ **Scan Temporary Delete**

When Scan pauses at an undesired channel, you can remove that channel from the scanning sequence by pressing this key.

### ■ **Squelch Off**

Press this key to hear background noise. Press the key again to return to normal operation.

### ■ **Squelch Off Momentary**

Press and hold this key to hear background noise. Release the key to return to normal operation.

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## ALL RESET MODE

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This function allows you to reset all frequencies, QT/DQT settings, and the VOX Gain level to their original values.

To reset the transceiver:

- 1 With the transceiver power OFF, press and hold the **PTT** switch and **Side** key while turning the transceiver power ON.
  - Continue to hold the **PTT** switch and **Side** key until the LED lights orange (approximately 2 seconds).
- 2 Release the **PTT** switch and **Side** key.
  - A beep will sound and all channel frequencies and QT/DQT settings, or the VOX Gain level return to their original values.

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### Note:

- ◆ The channel frequencies and QT/DQT settings cannot be reset at the same time as the VOX Gain level.
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## TROUBLESHOOTING GUIDE

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Problem	Solution
Cannot turn the transceiver power ON.	<ul style="list-style-type: none"><li>• The battery pack is discharged. Recharge the battery pack or replace the batteries.</li><li>• The battery pack may not be installed correctly. Remove the battery pack and install again.</li></ul>
Battery deterioration occurs when a battery pack is charged repeatedly.	<ul style="list-style-type: none"><li>• The battery pack life is finished. Replace the battery pack with a new one.</li></ul>
Cannot talk to or hear other members in your group.	<ul style="list-style-type: none"><li>• Make sure you are using the same frequency and QT/DQT settings as the other members in your group.</li><li>• Other group members may be too far away. Make sure you are within range of the other transceivers.</li></ul>
Other voices (besides group members') are present on the channel.	<ul style="list-style-type: none"><li>• Change the QT/DQT settings. Make sure all group members change the settings on their transceivers to match the new QT/DQT setting.</li></ul>

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### Note:

- ◆ If the problem persists, contact a KENWOOD authorized service center for repairs. You may return your transceiver for service to the authorized KENWOOD dealer from whom you purchased it or any authorized KENWOOD service center.
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## OPTIONAL ACCESSORIES

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- KSC-35S (Rapid charger)
- KSC-356 (Multiple charger)
- KMB-35 (Six unit charger adapter)
- KNB-63L (Li-ion battery pack)
- KNB-65L (Li-ion battery pack)
- KBH-18 (Belt clip)
- KHS-1 (Headset)
- KHS-21 (Headset)
- KMC-21 (Speaker/ microphone)
- KMC-45 (Speaker/ microphone)
- EMC-11 (Clip microphone with earphone)
- EMC-12 (Clip microphone with earphone)
- KVC-22 (DC vehicular charger adapter)
- KPG-22U (Programming interface cable: USB)
- BT-16 (Alkaline battery case)
- KWR-1 (Water resistant bag)

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