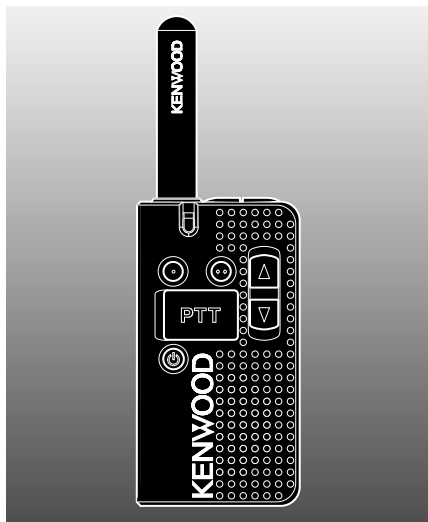


# KENWOOD

## INSTRUCTION MANUAL



UHF FM TRANSCEIVER

# PKT-23

## ProTalk LT

JVCKENWOOD Corporation

© B62-2576-10 (K)

## Terminal Descriptions

### 3.5 mm phone jack

No.	Name	Description	Impedance	I/O
1	GND	Ground	Ground	-
2	EXTPTT	External PTT Detection	47 k $\Omega$	I
3	MIC	External MIC Input	1.8 k $\Omega$	I
4	EXTSP	Internal Audio Output	32 $\Omega$	O
5	Not used	-	-	-
6	Not used	-	-	-
7	Not used	-	-	-

### Micro USB jack (B type)

No.	Name	Description	Impedance	I/O
1	VBUS	USB Detect	13 k $\Omega$	I
2	D-	DATA	High Impedance/ 44 $\Omega$	I/O
3	D+	DATA	High Impedance/ 44 $\Omega$	I/O
4	ID	NC	-	NC
5	GND	Ground	Ground	-

## THANK YOU

We are grateful for your purchase of this **KENWOOD** product and welcome you to the Business Radio Service (BRS).

Your **KENWOOD** 2-way Business Radio is called a “transceiver”, meaning “transmitter & receiver”. We believe this easy-to-use transceiver will provide you with dependable and reliable communications. This **KENWOOD** transceiver is a precision device. Treat it with care, and you will enjoy years of reliable operation.

## FEATURES

- 4 channels with 99 UHF operating frequencies. Each channel can be set up with a QT tone or DQT code allowing you to ignore unwanted calls.
- Hands free operation when using an optional headset.
- Voice announcement lets you know which channel you have selected and which settings you have made when reassigning key functions and channel settings.

## OPERATING CONDITIONS

Condition	Transmission Range
Open locations (no obstructions)	Up to 5 miles (8 km)
In steel/ concrete reinforced buildings	Up to 225,000 square feet (20,900 m <sup>2</sup> )
In high rises	Up to 17 floors

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**Note:** The listed ranges are based on field testing and may vary with your operating conditions and individual transceiver.

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## **FCC LICENSE INFORMATION**

Your **KENWOOD** transceiver operates on communications frequencies which are subject to FCC (Federal Communications Commission) Rules & Regulations. FCC Rules require that all operators using Private Land Mobile radio frequencies obtain a radio license before operating their equipment. Application for license must be made on FCC form 601, schedules D and H, and Remittance form 159.

**FAX:** Forms can be obtained by fax from the FCC Fax-On-Demand system. Call 1-202-418-0177 from your fax machine and request document number 000601 for the form, schedules, and instructions.

**MAIL:** Forms can be ordered by telephone, and will be sent to you by first class mail. Call the FCC Forms Hotline at 1-800-418-FORM (1-800-418-3676).

**INTERNET:** Form 601 and instructions can be downloaded from the FCC Forms website at <http://www.fcc.gov/formpage.html>

Before filling out your Form 601 application Technical Data section, you must decide on which frequencies you will operate. See the frequency charts on pages 13 and 14.

**QUESTIONS?** Call the FCC for license application questions at 1-888-CALL-FCC (1-888-225-5322).

## 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:

The RBRC Recycle seal found on **KENWOOD** lithium-ion (Li-ion) battery packs indicates **KENWOOD's** voluntary participation in an industry program to collect and recycle Li-ion batteries after their operating life has expired. The RBRC program is an alternative to disposing Li-ion batteries with your regular refuse or in municipal waste streams, which is illegal in some areas.

For information on Li-ion battery recycling in your area, call (toll free) 1-800-8-BATTERY (1-800-822-8837).

**KENWOOD's** involvement in this program is part of our commitment to preserve our environment and conserve our natural resources.

## NOTICES TO THE USER

- ◆ Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.
- ◆ Illegal operation is punishable by fine and/or imprisonment.
- ◆ Refer service to qualified technicians only.

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

## PRECAUTIONS

- Do not charge the transceiver and battery pack when they are wet.
- Ensure that there are no metallic items located between the transceiver and the battery pack.
- Do not use options not specified by **KENWOOD**.
- If any transceiver part is damaged, do not touch the damaged parts.
- If a headset or headphone is connected to the transceiver, reduce the transceiver volume. Pay attention to the volume level when turning the squelch off.
- Do not place the cable of the clip microphone with earphone/hanger around your neck while near machinery that may catch the cable.
- Do not place the transceiver on unstable surfaces. If the transceiver switches OFF/ON as a result of falling or hard impact, the volume and channel configurations may reset.
- Ensure that the end of the antenna does not touch your eyes.
- Do not immerse the transceiver in water.
- Always switch the transceiver power off before installing optional accessories.
- The charger is the device that disconnects the unit from the AC mains line. The AC plug should be readily accessible.

**WARNING**

Turn the transceiver power off in the following locations:

- In explosive atmospheres (inflammable gas, dust particles, metallic powders, grain powders, etc.).
- While taking on fuel or while parked at gasoline service stations.
- Near explosives or blasting sites.
- In aircraft. (Any use of the transceiver must follow the instructions and regulations provided by the airline crew.)
- Where restrictions or warnings are posted regarding the use of radio devices, including but not limited to medical facilities.
- Near persons using pacemakers.

**CAUTION**

- Do not modify the transceiver for any reason.
- Do not place the transceiver on or near airbag equipment while the vehicle is running. When the airbag inflates, the transceiver may be ejected and strike the driver or passengers.
- Do not transmit while touching the antenna terminal or if any metallic parts are exposed from the antenna covering. Transmitting at such a time may result in a high-frequency burn.
- If an abnormal odor or smoke is detected coming from the transceiver, switch the transceiver power off immediately, remove the battery pack from the transceiver, and contact your **KENWOOD** dealer.
- Use of the transceiver while you are driving may be against traffic laws. Please check and observe the vehicle regulations in your area.
- Do not expose the transceiver to extremely hot or cold conditions.
- Do not carry the battery pack (or battery case) with metal objects, as they may short the battery terminals.
- Danger of explosion if the battery is incorrectly replaced; replace only with the same type.
- When operating the transceiver in areas where the air is dry, it is easy to build up an electric charge (static electricity). When using an earphone accessory in such conditions, it is possible for the transceiver to send an electric shock through the earphone and to your ear. Do not use an earphone/microphone accessory in areas where static electricity can be easily generated.
- When attaching a commercial strap to the transceiver, ensure that the strap is durable. In addition, do not swing the transceiver around by the strap; you may inadvertently strike and injure another person with the transceiver.

## Information concerning the battery pack:

The battery pack includes flammable objects such as organic solvent. Mishandling may cause the battery to rupture producing flames or extreme heat, deteriorate, or cause other forms of damage to the battery. Please observe the following prohibitive matters.



**DANGER**

- **Do not disassemble or reconstruct the battery!**

The battery pack has a safety function and protection circuit to avoid danger. If they suffer serious damage, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not short-circuit the battery!**

Do not join the + and – terminals using any form of metal (such as a paper clip or wire). Do not carry or store the battery pack in containers holding metal objects (such as wires, chain-necklaces or hairpins). If the battery pack is short-circuited, excessive current will flow and the battery may generate heat or smoke, rupture, or burst into flame. It will also cause metal objects to heat up.

- **Do not incinerate or apply heat to the battery!**

If the insulator is melted, the gas release vent or safety function is damaged, or the electrolyte is ignited, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not leave the battery near fire, stoves, or other heat generators (areas reaching over 60°C/ 140°F)!**

If the polymer separator is melted due to high temperature, an internal short-circuit may occur in the individual cells and the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not immerse the battery in water or get it wet by other means!**

If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not charge the battery near fire or under direct sunlight!**

If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.



**DANGER**

- **Use only the specified charger and observe charging requirements!**

If the battery is charged in unspecified conditions (under high temperature over the regulated value, excessive high voltage or current over regulated value, or with a remodeled charger), it may overcharge or an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not pierce the battery with any object, strike it with an instrument, or step on it!**

This may break or deform the battery, causing a short-circuit. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not jar or throw the battery!**

An impact may cause the battery to leak, generate heat or smoke, rupture, and/or burst into flame. If the battery's protection circuit is damaged, the battery may charge at an abnormal current (or voltage), and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not use the battery pack if it is damaged in any way!**

The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not solder directly onto the battery!**

If the insulator is melted or the gas release vent or safety function is damaged, the battery may generate heat or smoke, rupture, or burst into flame.

- **Do not reverse the battery polarity (and terminals)!**

When charging a reversed battery, an abnormal chemical reaction may occur. In some cases, an unexpected large amount of current may flow upon discharging. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not reverse-charge or reverse-connect the battery!**

The battery pack has positive and negative poles. If the battery pack does not smoothly connect with a charger or operating equipment, do not force it; check the polarity of the battery. If the battery pack is reverse-connected to the charger, it will be reverse-charged and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.



## DANGER

- **Do not touch a ruptured and leaking battery!**

If the electrolyte liquid from the battery gets into your eyes, wash your eyes with fresh water as soon as possible, without rubbing your eyes. Go to the hospital immediately. If left untreated, it may cause eye problems.



## WARNING

- **Do not charge the battery for longer than the specified time!**

If the battery pack has not finished charging even after the regulated time has passed, stop it. The battery may generate heat or smoke, rupture, or burst into flame.

- **Do not place the battery pack into a microwave or high pressure container!**

The battery may generate heat or smoke, rupture, or burst into flame.

- **Keep ruptured and leaking battery packs away from fire!**

If the battery pack is leaking (or the battery emits a bad odor), immediately remove it from flammable areas. Electrolyte leaking from the battery can easily catch on fire and may cause the battery to generate smoke or burst into flame.

- **Do not use an abnormal battery!**

If the battery pack emits a bad odor, appears to have different coloring, is deformed, or seems abnormal for any other reason, remove it from the charger or operating equipment and do not use it. The battery may generate heat or smoke, rupture, or burst into flame.

## Firmware Copyrights

The title to and ownership of copyrights for firmware embedded in KENWOOD product memories are reserved for JVC KENWOOD Corporation.

# CONTENTS

UNPACKING AND CHECKING EQUIPMENT .....	1
PREPARATION .....	2
ORIENTATION .....	7
BASIC OPERATIONS .....	9
VOICE OPERATED TRANSMISSION (VOX) .....	11
CHANNEL SETUP MODE.....	12
KEY ASSIGNMENT MODE .....	18
TROUBLESHOOTING GUIDE .....	21
ALL RESET MODE .....	22

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## UNPACKING AND CHECKING EQUIPMENT

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Carefully unpack the transceiver. If any of the items listed below are missing or damaged, file a claim with the carrier immediately.

### SUPPLIED ACCESSORIES

- Battery charger (KSC-44CR)/ AC adapter (KSC-44SL) ..... 1
- Li-ion battery pack (KNB-71L) ..... 1
- Belt clip (KBH-20) ..... 1
- Screw (M3 x 6 mm with washer)..... 2
- Warranty card ..... 1
- Instruction manual ..... 1

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**Note:** Refer to “PREPARATION” for accessory installation instructions.

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## PREPARATION

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### CHARGING THE BATTERY PACK

The battery pack is not charged at the factory; charge it before use. Average battery pack life (calculated using 5% transmit time, 5% receive time, and 90% standby time) is 15 hours.

**Note:**

- ◆ The ambient temperature should be between 32°F and 104°F (0°C and 40°C) while charging is in progress. Charging outside this range may not fully charge the battery.
- ◆ The battery pack life is over when its operating time decreases even though it is fully and correctly charged (approximately 500 cycles). Replace the battery pack.
- ◆ While operating the transceiver using a Li-ion battery pack in areas with an ambient temperature close to 0°C, the operating time may be shortened.
- ◆ We recommend using a short USB cable (low loss) for charging.

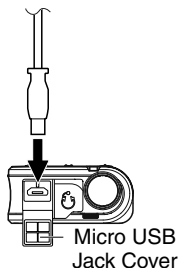
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**ATTENTION:** Switch OFF a transceiver equipped with a battery pack before charging.

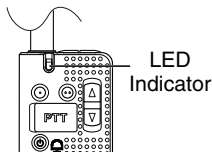
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### ■ Charging with a USB Cable

- Use a commercially available USB cable (Micro USB B Type).
  - Charge the transceiver through a commercially available PC or AC adapter power source.
- 1 Plug the USB cable (B Type) into the Micro USB jack.
  - 2 Connect the USB cable to your PC or AC adapter.
    - The LED indicator lights blue.
    - The transceiver power turns OFF automatically.

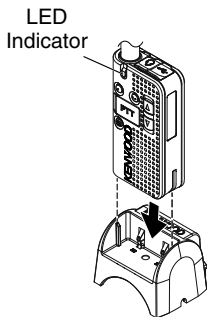
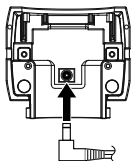


- 3** When charging is complete, the LED indicator turns off.
- It takes approximately 4 hours to charge the battery pack.



## ■ Charging with the KSC-44CR Charger

- 1** Plug the AC adapter cable into the jack located on the bottom of the charger.
- 2** Plug the AC adapter into an AC outlet.
- 3** Slide a transceiver equipped with a battery pack into the charging slot of the charger.
  - Make sure the metal contacts of the transceiver mate securely with the charger terminals.
  - The LED indicator lights blue.
- 4** When charging is complete, the LED indicator turns off. Remove the transceiver from the charging slot of the charger.
  - It takes approximately 4 hours to charge the battery pack.
  - Transmission is inhibited while charging.
  - When the charger will not be used for a long time, unplug the AC adapter from the AC outlet.



## REPLACING THE BATTERY PACK

Replace an expired battery pack with a newly purchased KNB-71L battery pack.

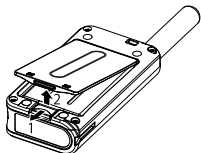


### CAUTION

- ◆ Do not disassemble the battery pack.
- ◆ Be sure to follow local laws concerning the disposal of battery packs.

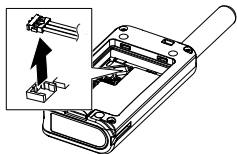
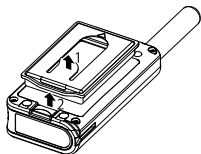
**1** Pull back the battery pack latch, then remove the battery cover from the transceiver.

- When using the belt clip {page 6}, be sure to remove it before removing the battery cover.



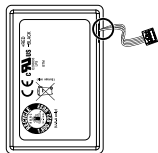
**2** Lift the battery pack and its packing away from the transceiver.

- Lift the battery pack cable and remove the connector from the PCB terminal.



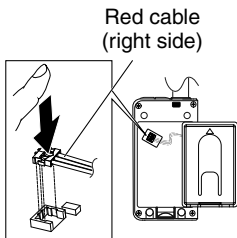
**3** Remove the old battery pack from the packing and insert the new battery pack.

- Pass the battery pack cable through the hole in the packing.



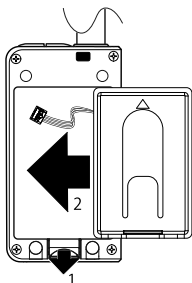
**4** Insert the connector of the new battery pack into the PCB terminal by pressing down on it.

- Match the direction of the connector and insert it vertically.



**5** Pull back the battery pack latch, then insert the battery pack into position.

- Failure to pull back the battery pack latch will cause the battery pack to be misaligned.



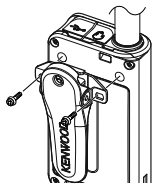
**6** Replace the battery cover over the battery pack.

- Ensure that the battery pack latch locks the cover in place.

## INSTALLING THE BELT CLIP

If necessary, attach the belt clip using the two supplied M3 x 6 mm screws (with washers).

**Note:** If the belt clip is not installed, its mounting location may get hot during continuous transmission or when left sitting in a hot environment.



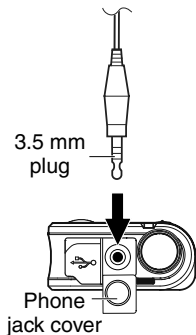
### CAUTION

Do not use glue which is designed to prevent screw loosening when installing the belt clip, as it may cause damage to the transceiver. Acrylic ester, which is contained in these glues, may crack the transceiver's back panel.

## CONNECTING AN EARPHONE/ MICROPHONE

Connect an earphone/ microphone to the phone jack on the top of the transceiver.

**Note:** To keep the transceiver water resistant, the phone jack cover must remain closed.





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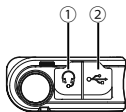
## ORIENTATION

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### ① 3.5 mm phone jack

Connect the earphone/  
microphone plug to this jack.



### ② Micro USB jack (B Type)

Connect a USB cable to this jack  
to charge the transceiver battery  
pack.

### ③ PF-1 key

Press or hold this key for  
1 second to activate its  
programmable functions. The  
default settings are **[Scan]**(press)  
and **[Super Lock-P]**(hold).

- For function descriptions and details on how to change the key functions, refer to “KEY ASSIGNMENT MODE” on page 18.

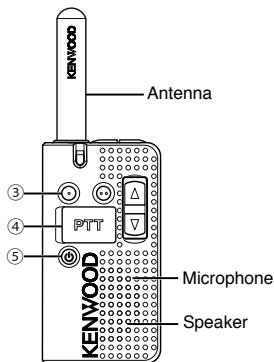
### ④ PTT (Push to Talk) switch

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

### ⑤ Power switch

Hold for 1 second to turn the  
transceiver power ON. Hold for 2  
seconds to turn the transceiver  
power OFF.

Momentarily press this key while  
the transceiver power is ON to  
activate the Battery Level Guide.  
Refer to the “BATTERY LEVEL  
GUIDE” table on page 10.



## ⑥ LED indicator

Refer to the “LED INDICATOR STATUS” table on page 10.

## ⑦ PF-2 key

Press this key to toggle the function of the Up/Down keys between Volume Adjustment mode and Channel Select mode. Hold this key for 1 second to activate its programmable function. The default setting is **[Monitor]**.

- For function descriptions and details on how to change the key functions, refer to “KEY ASSIGNMENT MODE” on page 18.

## ⑧ Up/Down keys

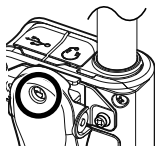
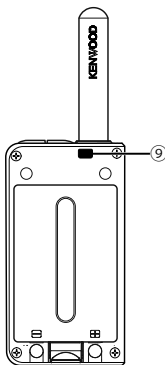
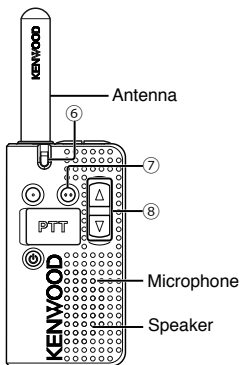
Press these keys to adjust the volume and change the channel.

- Press the **PF-2** key to toggle the function of the Up/Down keys between Volume Adjustment mode and Channel Select mode.
- To change the operating frequency or QT/DQT settings of a channel, refer to “CHANNEL SETUP MODE” on page 12.

## ⑨ Strap hole

Connect a commercially available strap here.

- When using the belt clip, the strap hole will be covered and cannot be used. Instead, use the strap hole of the belt clip.



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# BASIC OPERATIONS

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## POWER AND VOLUME

- 1 Hold the **Power** switch for approximately 1 second to switch the transceiver power ON.
  - A beep sounds and the LED indicator blinks blue a number of times as described in the "BATTERY LEVEL GUIDE" table on page 10.
  - To turn the power OFF, hold the **Power** switch for 2 seconds.
- 2 In Volume Adjustment mode, press the **Up/Down** keys to adjust the volume.
  - Press the key programmed as [**Squelch Off**] to hear background noise.
  - Press the **PF-2** key to switch between Volume Adjustment mode and Channel Select mode.

## TRANSMITTING AND RECEIVING

- 1 In Channel Select mode, press the **Up/Down** keys to select your desired channel.
  - After selecting a channel, the transceiver announces the channel number and the LED indicator blinks yellow for a number of times corresponding to the channel number. For example, when selecting channel 3, "three" is announced and the LED indicator blinks yellow 3 times.
  - Press the **PF-2** key to switch between Volume Adjustment mode and Channel Select mode.
- 2 To make a call, press and hold the **PTT** switch, then speak into the microphone using your normal speaking voice.
  - Hold the microphone approximately 1.5 inches (3 to 4 cm) from your mouth.
- 3 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. (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.)

- ◆ Even when setting the volume to 0, the transceiver will continue to emit beep sounds and channel announcements.
- ◆ Continuously transmitting when the transceiver becomes too hot will cause the output power to decrease and may eventually stop transmission. Stop transmitting for a while to allow the transceiver to cool down.
- ◆ You may sometimes hear noise during communications, depending on the caller's transceiver.

## LED INDICATOR STATUS

Indicator Color	Meaning
Red	Transmitting
Green	Receiving a call
Blinking green	Scanning
Blinks light blue 1 time	Standby state *
Blinking red	Battery power is low

\* The transceiver has not been used for at least 10 seconds.

## BATTERY LEVEL GUIDE

You can determine the remaining battery power level by pressing the Power switch while the transceiver power is ON. The LED indicator will blink blue a number of times corresponding to the battery power remaining.

Indicator Status	Battery Level
Blinks 3 times	High
Blinks 2 times	Medium
Blinks 1 time	Low

## TIME-OUT TIMER (TOT)

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

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## VOICE OPERATED TRANSMISSION (VOX)

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VOX operation allows you to transmit hands-free. VOX can only be used if you are using a supported clip microphone with earphone/hanger. This function can be turned off for specific channels. To activate VOX and set the VOX Gain level, perform the following steps:

- 1 Connect the microphone with earphone/hanger to the transceiver.
  - The VOX function does not activate when a microphone with earphone/hanger is not connected to the accessory terminal of the transceiver.
- 2 With the transceiver power OFF, press and hold the **Up** key while turning the transceiver power ON.
  - The LED indicator lights yellow and “VOX” and the channel number are announced.
- 3 Press the **PF-1** key to select the VOX Gain level of the radio (from 1 ~ 5 or Off).
  - The transceiver will announce the VOX Gain level. If the VOX Gain level is Off, a double beep sounds.
  - Press the **PF-2** key to enable or disable the VOX function for the current channel (you can change this setting for each channel by selecting a channel with the **Up/Down** keys). When VOX is turned ON, a beep sounds. When it is turned OFF, a double beep sounds.
- 4 Press and hold the **PTT** switch for 3 seconds to save the setting.
  - A beep will sound.
- 5 Turn the transceiver power OFF and then ON again to activate VOX.

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### Note:

- ◆ The transceiver will automatically return to normal operation if no action is performed for 20 seconds.
- ◆ VOX Gain level 1 is the least sensitive and VOX Gain level 5 is the most sensitive.
- ◆ When the microphone with earphone/hanger is inserted and the VOX function is enabled, battery save mode will be disabled.
- ◆ If a microphone with earphone/hanger 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 transmitting.

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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	Table Number	Frequency	QT/DQT Setting
1	2	464.5500 MHz	67.0 Hz
2	8	467.9250 MHz	67.0 Hz
3	9	461.0375 MHz	67.0 Hz
4	10	461.0625 MHz	67.0 Hz

### OPERATING FREQUENCY AND QT/ DQT SETTING

To change the operating frequency of a channel:

- 1 With the transceiver power OFF, press and hold the **PTT** switch and **Up** key while turning the transceiver power ON.
  - Continue to hold the **Power** switch, **PTT** switch, and **Up** key until the LED indicator lights yellow and the transceiver announces "Self".
- 2 Release the **Power** switch, **PTT** switch and **Up** key.
  - The transceiver announces "Channel Number".
- 3 Press the **Up/Down** key to select your desired channel, then press the **PTT** switch to confirm the selected channel.
  - Upon releasing the **PTT** switch, a beep will sound and the transceiver announces "Table Zero".
- 4 Press the **Up/Down** key to increment/ decrement the Table number, to select the new channel frequency.
  - Press and hold the **Up/Down** key to continuously increment/ decrement the number.
  - Table numbers and their corresponding operating frequencies are provided in the tables on pages 13 and 14.
  - A voice announcement will inform you of the selected Table number.

- 5 Press the **PTT** switch to save the setting and switch to the QT/ DQT setting.
  - A beep will sound and the transceiver announces “QT”.
- 6 Press the **Up/Down** key to select QT or DQT, then press the **PTT** switch to confirm the selection.
- 7 Press the **Up/Down** key to increment/ decrement the QT/ DQT number, to select the new value.
  - Press and hold the **Up/Down** key to continuously increment/ decrement the QT/ DQT number.
  - QT/ DQT numbers and their corresponding settings are provided in the tables on pages 15 to 17.
  - A voice announcement will inform you of the selected QT/ DQT number.
- 8 Press the **PTT** switch to save the setting.
  - A beep will sound and the transceiver announces “Channel Number”.
  - Repeat steps 3 to 8 to set up another channel.
- 9 Press and hold the **PF-2** key and **PTT** switch to store the settings and return to normal operation.

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**Note:**

- ◆ The transceiver will automatically return to normal operation if no action is performed for 20 seconds.
- ◆ Frequencies indicated by an asterisk \* in the following table may be susceptible to interference from other frequencies. If interference occurs, change to a different frequency in the following table.

Table Number	Operating Frequency (MHz)	Table Number	Operating Frequency (MHz)
0	OFF	9	461.0375
1	464.5000	10*	461.0625
2	464.5500	11*	461.0875
3	467.7625	12*	461.1125
4*	467.8125	13	461.1375
5	467.8500	14	461.1625
6	467.8750	15	461.1875
7	467.9000	16	461.2125
8	467.9250	17	461.2375

<b>Table Number</b>	<b>Operating Frequency (MHz)</b>	<b>Table Number</b>	<b>Operating Frequency (MHz)</b>
18	461.2625	59	462.4875
19	461.2875	60	462.5125
20	461.3125	61	467.1875
21	461.3375	62*	467.4625
22	461.3625	63	467.4875
23	462.7625	64	467.5125
24	462.7875	65	451.1875
25	462.8125	66	451.2375
26*	462.8375	67	451.2875
27	462.8625	68	451.3375
28	462.8875	69	451.4375
29	462.9125	70	451.5375
30	464.4875	71	451.6375
31	464.5125	72	452.3125
32	464.5375	73	452.5375
33	464.5625	74	452.4125
34	466.0375	75	452.5125
35	466.0625	76	452.7625
36	466.0875	77	452.8625
37	466.1125	78	456.1875
38	466.1375	79	456.2375
39	466.1625	80	456.2875
40*	466.1875	81	468.2125
41	466.2125	82	468.2625
42	466.2375	83	468.3125
43	466.2625	84	468.3625
44	466.2875	85*	468.4125
45	466.3125	86	468.4625
46	466.3375	87*	468.5125
47	466.3625	88	468.5625
48*	467.7875	89	468.6125
49	467.8375	90	468.6625
50	467.8625	91	456.3375
51	467.8875	92	456.4375
52	467.9125	93	456.5375
53*	469.4875	94	456.6375
54	469.5125	95	457.3125
55	469.5375	96	457.4125
56*	469.5625	97	457.5125
57	462.1875	98	457.7625
58	462.4625	99	457.8625



## QUIET TALK (QT)/ DIGITAL QUIET TALK (DQT)

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.

Follow the steps described in "OPERATING FREQUENCY AND QT/ DQT SETTING" on page 12 to change the QT/DQT settings of a channel

### QT Channel Settings:

QT Number	QT Frequency	QT Number	QT Frequency	QT Number	QT Frequency
1	67.0 Hz	17	118.8 Hz	33	210.7 Hz
2	71.9 Hz	18	123.0 Hz	34	218.1 Hz
3	74.4 Hz	19	127.3 Hz	35	225.7 Hz
4	77.0 Hz	20	131.8 Hz	36	233.6 Hz
5	79.7 Hz	21	136.5 Hz	37	241.8 Hz
6	82.5 Hz	22	141.3 Hz	38	250.3 Hz
7	85.4 Hz	23	146.2 Hz	39	69.3 Hz
8	88.5 Hz	24	151.4 Hz	40	67.0 Hz
9	91.5 Hz	25	156.7 Hz	41	67.0 Hz
10	94.8 Hz	26	162.2 Hz	42	67.0 Hz
11	97.4 Hz	27	167.9 Hz	43	67.0 Hz
12	100.0 Hz	28	173.8 Hz	44	67.0 Hz
13	103.5 Hz	29	179.9 Hz	45	67.0 Hz
14	107.2 Hz	30	186.2 Hz	0	OFF
15	110.9 Hz	31	192.8 Hz		
16	114.8 Hz	32	203.5 Hz		

## DQT Channel Settings:

DQT Number	DQT Code	DQT Number	DQT Code	DQT Number	DQT Code	DQT Number	DQT Code
1	D023N	31	D223N	61	D503N	91	D047I
2	D025N	32	D226N	62	D506N	92	D051I
3	D026N	33	D243N	63	D516N	93	D054I
4	D031N	34	D244N	64	D532N	94	D065I
5	D032N	35	D245N	65	D546N	95	D071I
6	D043N	36	D251N	66	D565N	96	D072I
7	D047N	37	D261N	67	D606N	97	D073I
8	D051N	38	D263N	68	D612N	98	D074I
9	D054N	39	D265N	69	D624N	99	D114I
10	D065N	40	D271N	70	D627N	100	D115I
11	D071N	41	D306N	71	D631N	101	D116I
12	D072N	42	D311N	72	D632N	102	D125I
13	D073N	43	D315N	73	D654N	103	D131I
14	D074N	44	D331N	74	D662N	104	D132I
15	D114N	45	D343N	75	D664N	105	D134I
16	D115N	46	D346N	76	D703N	106	D143I
17	D116N	47	D351N	77	D712N	107	D152I
18	D125N	48	D364N	78	D723N	108	D155I
19	D131N	49	D365N	79	D731N	109	D156I
20	D132N	50	D371N	80	D732N	110	D162I
21	D134N	51	D411N	81	D734N	111	D165I
22	D143N	52	D412N	82	D743N	112	D172I
23	D152N	53	D413N	83	D754N	113	D174I
24	D155N	54	D423N	84	D645N	114	D205I
25	D156N	55	D431N	85	D023I	115	D223I
26	D162N	56	D432N	86	D025I	116	D226I
27	D165N	57	D445N	87	D026I	117	D243I
28	D172N	58	D464N	88	D031I	118	D244I
29	D174N	59	D465N	89	D032I	119	D245I
30	D205N	60	D466N	90	D043I	120	D251I

DQT Number	DQT Code	DQT Number	DQT Code	DQT Number	DQT Code	DQT Number	DQT Code
121	D261I	135	D411I	149	D546I	163	D731I
122	D263I	136	D412I	150	D565I	164	D732I
123	D265I	137	D413I	151	D606I	165	D734I
124	D271I	138	D423I	152	D612I	166	D743I
125	D306I	139	D431I	153	D624I	167	D754I
126	D311I	140	D432I	154	D627I	168	D645I
127	D315I	141	D445I	155	D631I	169	D023N
128	D331I	142	D464I	156	D632I	170	D023N
129	D343I	143	D465I	157	D654I	171	D023N
130	D346I	144	D466I	158	D662I	172	D023N
131	D351I	145	D503I	159	D664I	173	D023N
132	D364I	146	D506I	160	D703I	174	D023N
133	D365I	147	D516I	161	D712I	0	OFF
134	D371I	148	D532I	162	D723I		

## CHANNEL CONFIRMATION MODE

To confirm your channel settings:

- 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 indicator lights yellow and the transceiver announces "Confirm".
- Release the **PTT** switch.
  - The transceiver announces the channel number, frequency table number, QT/DQT number of the selected channel and "VOX".
- Press the **Up/Down** keys to confirm additional channels within 20 seconds, otherwise the operation will cancel.
  - The transceiver announces the channel table number and tone number of the selected channel.

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**Note:** The transceiver will automatically return to normal operation if no action is performed for 20 seconds.

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## KEY ASSIGNMENT MODE

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This transceiver allows you to reprogram the **PF-1** key (press/hold) and **PF-2** key (hold only) with any of the functions listed in the table below. Explanations on the use of each function are provided under “PROGRAMMABLE FUNCTIONS”, on page 19.

Table Number	Function Name
0	None (no function)
1	Low Transmit Power
2	Monitor ( <b>PF-2</b> key hold default)
3	RX/TX Frequency Scan *
4	Scan ( <b>PF-1</b> key press default)
5	Squelch Off
6	Super Lock-C
7	Super Lock-P ( <b>PF-1</b> key hold default)
8	Tone Alert

\* To use this function, Repeater mode must be activated through Programming Software.

To change the functions of the **PF-1** and **PF-2** keys:

- 1 With the transceiver power OFF, press and hold the **Up** and **PF-2** keys while turning the transceiver power ON.
  - Continue to hold the **Power** switch, **Up** key, and **PF-2** key until the LED indicator lights yellow and the transceiver announces “Setup”.
- 2 Release the **Power** switch, **Up** key, and **PF-2** key.
  - The transceiver announces “Table Zero”.
- 3 Press the **Up/Down** keys to increment/ decrement the number, to select the new key function.
  - Table numbers and their corresponding functions are provided in the table above.
  - A voice announcement will inform you of the currently selected Table number.

- 4 Press the **PF-1** key or hold the **PF-1** or **PF-2** key to program the new function onto the desired key.
    - A tone sounds after pressing the **PF-1** key, confirming that the function has been stored to the **PF-1** press operation.
    - Two tones sound after holding the **PF-1** key, confirming that the function has been stored to the **PF-1** hold operation.
    - Three tones sound after holding the **PF-2** key, confirming that the function has been stored to the **PF-2** hold operation.
    - The press operation of the **PF-2** key cannot be reprogrammed. Attempting to do so causes an error tone to sound.
  - 5 Repeat steps 2 and 3 to reprogram additional functions.
  - 6 Hold the **PTT** switch for 3 seconds to save the settings and exit Setting mode.
- 

**Note:** The transceiver will automatically return to normal operation if no action is performed for 20 seconds.

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## PROGRAMMABLE FUNCTIONS

### ■ None

No function is programmed for the key.

### ■ Low Transmit Power

Press to toggle the transmit power between high and low.

### ■ Monitor

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

### ■ Scan

Press this key to turn the Scan function on and off. Scan is useful for monitoring signals on the transceiver channels. When scanning, the transceiver checks for a signal on each channel and only stops if a signal is present. If the QT/DQT matches, the transceiver stops at the channel and opens the squelch so you can listen to the call. If the QT/DQT does not match, the call is ignored and scanning continues.

## ■ Squelch Off

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

## ■ Super Lock-C

Press and hold this key for 4 seconds to lock the transceiver keys. Super Lock-C locks the transceiver keys to prevent accidental operation. Turning the transceiver power OFF and then ON again will not disable Super Lock-C. To deactivate Super Lock-C, with the transceiver power OFF, press and hold the **PF-2** key while turning the transceiver power ON.

- When the LED lights yellow, release the **PF-2** key.
- While Super Lock-C is activated, you can still perform the following actions: PTT, Squelch Off, Monitor, Power, Volume, Channel Up/Down.

## ■ Super Lock-P

Press and hold this key for 4 seconds to lock the transceiver keys. Super Lock-P locks the transceiver keys to prevent accidental operation. Turning the transceiver power OFF and then ON again will not disable Super Lock-P. To deactivate Super Lock-P, with the transceiver power OFF, press and hold the **PF-2** key while turning the transceiver power ON.

- When the LED lights yellow, release the **PF-2** key.
- While Super Lock-P is activated, you can still perform the following actions: PTT, Squelch Off, Monitor, Power, Volume.

## ■ Tone Alert

Press this key to toggle Tone Alert on and off. Tone Alert provides an audible alarm when signals are received on the frequency you are monitoring.

- When Tone Alert turns ON, the LED indicator color cycles through green, light blue, blue, purple, red, and yellow, and white approximately every 30 seconds.
- When a signal is received, the LED indicator color cycles through green, light blue, blue, purple, red, yellow, and white approximately every 5 seconds.
- Tone Alert ends once a signal is received. To reactivate Tone Alert, press this key again. Press any key to stop the 5 second LED indicator cycle.

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## TROUBLESHOOTING GUIDE

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<b>Problem</b>	<b>Solution</b>
Cannot turn the transceiver power ON.	<ul style="list-style-type: none"><li>• The battery pack may be dead. Recharge or replace the battery pack.</li><li>• The battery pack may not be installed correctly. Remove the battery pack and install again.</li></ul>
Battery power dies shortly after charging.	<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 nor 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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## ALL RESET MODE

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At some point in time, you may desire to reset the transceiver settings to their default values. This function will reset all channels to their default frequencies and QT/DQT, the VOX function to its default status, and all keys to their default functions.

To reset the transceiver:

- 1 With the transceiver power OFF, press and hold the **PTT** switch, the **Up** key, and the **Down** key while turning the transceiver power ON.
  - Continue to hold the keys for 2 seconds, until the LED indicator lights yellow.
- 2 Release the keys.
  - The transceiver announces “Confirm” and returns to normal operation.
  - If the keys are released before the LED indicator lights yellow, All Reset mode will cancel.



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