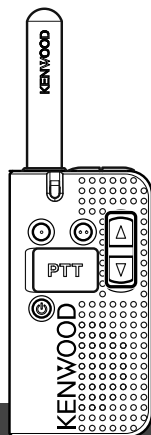


KENWOOD

PKT-23

UHF FM TRANSCEIVER

INSTRUCTION MANUAL



ProTalk^{LT}

JVCKENWOOD Corporation

B5A-0647-20 (E, T)



THANK YOU

We are grateful you have chosen **KENWOOD** for your PMR446 applications.

This Instruction manual covers only the basic operations of your PMR446 (Private Mobile Radio). Ask your dealer for information on any customized features they may have added to your radio.

OPERATING CONDITIONS

Open locations (no obstructions) : Up to 9.0 km

Note: The above range is based on field testing and may vary with your operating conditions and individual transceiver.

NOTICES TO THE USER

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.

This equipment complies with the essential requirements of Directive 1999/5/EC.

Information on Disposal of Old Electrical and Electronic Equipment and Batteries (applicable for countries that have adopted separate waste collection systems)



Products and batteries with the symbol (crossed-out wheeled bin) cannot be disposed as household waste.

Old electrical and electronic equipment and batteries should be recycled at a facility capable of handling these items and their waste byproducts.

Contact your local authority for details in locating a recycle facility nearest to you.



Proper recycling and waste disposal will help conserve resources whilst preventing detrimental effects on our health and the environment.

Notice: The sign "Pb" below the symbol for batteries indicates that this battery contains lead.

Firmware Copyrights

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

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.
- To dispose of batteries, be sure to comply with the laws and regulations in your country or region.
- If a commercially available neck strap is used, take care not to let the strap get caught on nearby machine.



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.

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UNPACKING AND CHECKING EQUIPMENT

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
- Instruction manual
 - E type 2
 - T type..... 1

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

PREPARATION

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.

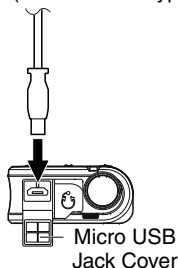
Note:

- ◆ 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 32°F (0°C), the operating time may be shortened.

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

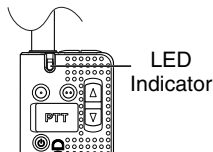
■ Charging with a USB Cable

- 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.

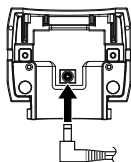


Note:

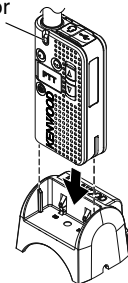
- ◆ Use a USB cable shorter than 3 meters.
 - ◆ We recommend using a short USB cable (low loss) for charging.
-

■ 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.



LED Indicator



REPLACING THE BATTERY PACK

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

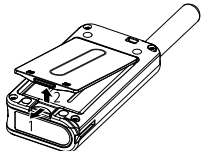


CAUTION

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

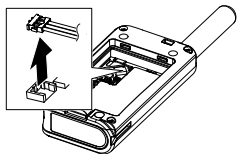
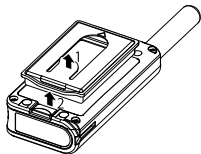
- 1 Pull back the battery pack latch, then remove the battery cover from the transceiver.

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



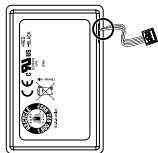
- 2 Lift the battery pack and its packing away from the transceiver.

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



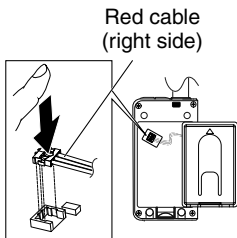
- 3 Remove the old battery pack from the packing and insert the new battery pack.

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



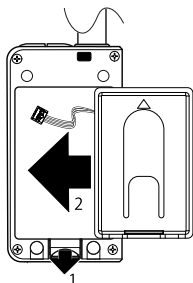
- 4** Insert the connector of the new battery pack into the PCB terminal by pressing down on it.

- 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.



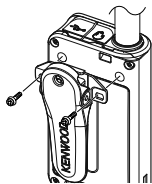
- 6** Replace the battery cover over the battery pack.

- 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

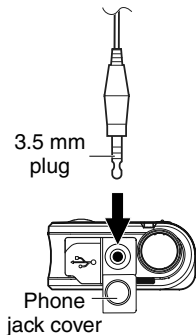
Do not use glue which is designed to prevent screw loosening when installing the belt clip, as it may cause damage to the transceiver. Acrylic ester, which is contained in these glues, may crack the transceiver's back panel.

CONNECTING AN EARPHONE/ MICROPHONE

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

Note:

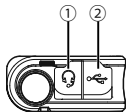
- ◆ Be sure to connect an earphone/ microphone to the phone jack fully and tightly. If the pin jack of an earphone/ microphone is not inserted fully, a pin contacting error will happen and a noise may occur.
- ◆ Depending on the sleeve shape of an earphone/ microphone jack foot, it may be difficult to judge the inserted condition. Before using the radio, confirm the Transmit/ Receive operation with an earphone/ microphone.
- ◆ To keep the transceiver water resistant, the phone jack cover must remain closed.



ORIENTATION

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 **[Calling
Alert]**(press) and **[None]**(hold).

- For function descriptions and details on how to change the key functions, refer to “PROGRAMMABLE AUXILIARY FUNCTIONS” on page 20.

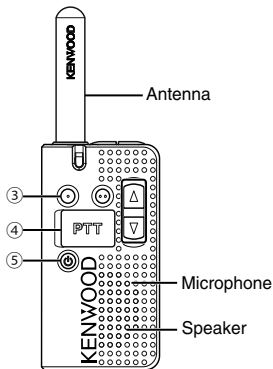
④ PTT (Push to Talk) switch

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 11.



⑥ LED indicator

Refer to the “LED INDICATOR STATUS” table on page 11.

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 “PROGRAMMABLE AUXILIARY FUNCTIONS” on page 20.

⑧ Up/Down keys

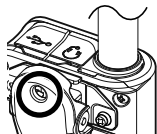
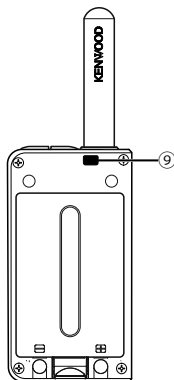
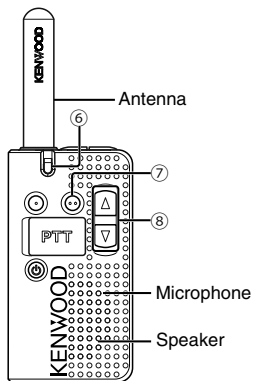
Press these keys to adjust the volume and change the channel.

- Press the **PF-2** key to toggle the function of the Up/Down keys between Volume Adjustment mode and Channel Select mode.

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.



BASIC OPERATIONS

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 11.
 - 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.
 - There are two cases to indicate the channel number. They are Voice Announcement enable case and Voice Announcement disable case. Channel number indications are described in the table below.

Ch. No. : Channel Number

Vo. Ann. : Voice Announcement

LED Bl. : Number of times LED blinks

T. So. : Number of times Tone sounds

| | | Voice Announcement | | |
|---------|--------|--------------------|---------|--------------------|
| | | Enable | | Disable |
| Ch. No. | LED | Vo. Ann. | LED Bl. | LED Bl. and T. So. |
| 1 | Yellow | "One" | 1 | 1 |
| 2 | | "Two" | 2 | 2 |
| 3 | | "Three" | 3 | 3 |
| 4 | | "Four" | 4 | 4 |

| | | Voice Announcement | | |
|---------|------|--------------------|---------|--------------------|
| | | Enable | | Disable |
| Ch. No. | LED | Vo. Ann. | LED Bl. | LED Bl. and T. So. |
| 5 | Blue | "Five" | 1 | 1 |
| 6 | | "Six" | 2 | 2 |
| 7 | | "Seven" | 3 | 3 |
| 8 | | "Eight" | 4 | 4 |

- After selecting a channel, the channel number is announced when Voice Announcement is enable or the Channel Select Tone sounds when Voice announcement is disable. Regardless of the Voice Announcement configuration, the LED indicator blinks to indicate the current channel number.

For example, to indicate the channel number 5, the LED blinks blue once and a voice announces "Five" when Voice Announcement is enable, and the LED blinks blue once and a Channel Select Tone sounds once when Voice Announcement is disable.

- 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.

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 (default 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.

VOICE OPERATED TRANSMISSION (VOX)

VOX operation allows you to transmit hands-free. This feature must first be activated by your dealer, and 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 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 While adjusting the level, speak into the microphone to test the sensitivity level. When sound is recognized, the LED lights red.
- 5 Press and hold the **PTT** switch for 3 seconds to save the setting.
 - A beep will sound.
- 6 Turn the transceiver power OFF and then ON again to activate VOX.

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.
-

CHANNEL SETUP MODE

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 (MHz) | Tone Number | QT/DQT Setting |
|----------------|--------------|-----------------|-------------|----------------|
| 1 | 1 | 446.00625 | 10 | 94.8 Hz |
| 2 | 8 | 446.09375 | 8 | 88.5 Hz |
| 3 | 3 | 446.03125 | 13 | 103.5 Hz |
| 4 | 6 | 446.06875 | 5 | 79.7 Hz |
| 5 | 4 | 446.04375 | 17 | 118.8 Hz |
| 6 | 2 | 446.01875 | 18 | 123.0 Hz |
| 7 | 7 | 446.08125 | 19 | 127.3 Hz |
| 8 | 5 | 446.05625 | 7 | 85.4 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 page 15.
 - 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 16 to 18.
 - 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.

Note:

- ◆ This mode is effective when Voice Announcement is set in English.
 - ◆ The transceiver will automatically return to normal operation if no action is performed for 20 seconds.
-

| Table Number | Frequency (MHz) | Table Number | Frequency (MHz) |
|--------------|-----------------|--------------|-----------------|
| 0 | OFF | | |
| 1 | 446.00625 | 5 | 446.05625 |
| 2 | 446.01875 | 6 | 446.06875 |
| 3 | 446.03125 | 7 | 446.08125 |
| 4 | 446.04375 | 8 | 446.09375 |

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 14 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:

- 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 indicator lights yellow and the transceiver announces "Confirm".
- 2 Release the **PTT** switch.
 - The transceiver announces the channel number, frequency table number, QT/DQT number of the selected channel and "VOX".
- 3 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.

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

KEY ASSIGNMENT MODE

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 20.

| Table Number | Function Name |
|--------------|--------------------|
| 0 | None (no function) |
| 1 | Calling Alert |
| 2 | Key Lock |
| 3 | Monitor |
| 4 | Scan |
| 5 | Squelch Off |
| 6 | Super Lock-P |

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:

- ◆ This mode is effective when Voice Announcement is set in English.
 - ◆ The transceiver will automatically return to normal operation if no action is performed for 20 seconds.
-

PROGRAMMABLE FUNCTIONS

■ None

No function is programmed for the key.

■ Calling Alert

A calling alert tone allows you to alert party members that you are making a call. When making a call, first hold down this key.

- While holding down the key, the calling alert tone will sound. Release the key to end the tone, then hold down the PTT switch and speak into the microphone to transmit.

■ Key Lock

Press and hold to lock/unlock the transceiver keys, and a beep will sound. While Key Lock is active, the following operations can be performed:

- Squelch Off
- Monitor

- Super Lock-P
- Power
- Volume Up/Down (if Volume Key (Key Lock) is unchecked)
- Channel Up/Down

■ 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-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.

ALL RESET MODE

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.

Note: This mode is effective when Voice Announcement is set in English.

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