KENWOOD

INSTRUCTION MANUAL

UHF FM TRANSCEIVER

TK-3131

FreeTalk® XLS

KENWOOD CORPORATION

09 08 07 06 05 04 03 02 01 00

Thank You

We are grateful for your purchase of this **KENWOOD** product and welcome you to the General Mobile Radio Service (GMRS). Your **KENWOOD** 2-way 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

- Compact design with a sturdy, polycarbonate body and a spring-loaded belt hook.
- Can be used with the supplied Ni-MH battery pack or 3 AA batteries.
- 15 channels with 121 tone/code settings for each channel, allowing you to ignore unwanted calls.
- Privacy Talk scrambles all your voice messages, giving you complete privacy for your conversations.
- Automatic battery power saver, providing you with longer battery usage.
- Battery power level indicator with low battery power warning.
- Key lock, preventing you from accidentally changing your transceiver settings.
- Six different call tones allows you to identify yourself to your group before you begin speaking.
- Hands free operation when using an optional KHS-21 headset.

Operating Conditions

Open locations (no obstructions)	Up to 4 miles (approximately 6.4 km)
Residential areas (near buildings)	Up to 1.5 miles (approximately 2.4 km)
In steel/ concrete reinforced buildings	Up to 200,000 square feet (approximately 18,580 m^2)
In high rises	Up to 15 floors

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

FCC License Information

Your **KENWOOD** radio operates on communications frequencies which are subject to FCC (Federal Communications Commission) Rules & Regulations. FCC Rules require that all operators using Personal Radio Service frequencies obtain a radio license before operating their equipment. Application for license must be made on FCC form 574. Temporary operation is allowed, using form 574T which has been provided for your convenience (remove the form from the center of this Instruction Manual). Please read and follow the instructions on the provided form.

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 000574 for the form and instructions. If you would like an example of a completed 574 form, also request document number 005741.

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 574 and instructions can be downloaded from the FCC Forms website at:
http://www.fcc.gov/formpage.html

Before filling out your Form 574 application Technical Data section, you must decide which frequency (or frequencies) you will operate on. Refer to the frequency charts on pages 41 and 42.

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

PRECAUTIONS

- Refer service to qualified technicians only. Do not modify or attempt to adjust the transceiver for any reason.
- Do not expose the transceiver to long periods of direct sunlight, nor place it close to heating appliances.
- Do not place the transceiver in excessively dusty, humid, or wet areas, nor on unstable surfaces.
- Avoid extremes in exposure to weather, heat, and cold. This transceiver can be used in mild weather conditions, but it is not waterproof.
- Turn OFF your transceiver while taking on fuel or while parked in gasoline service stations.
- Do not operate your transceiver or charge your battery pack in an explosive atmosphere (gases, dust, fumes, etc.).
- If an abnormal odor or smoke is detected coming from the transceiver, immediately switch OFF the power and remove the batteries from the transceiver. Contact your **KENWOOD** dealer.

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

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

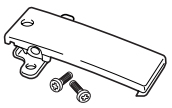
CONTENTS

UNPACKING AND CHECKING EQUIPMENT

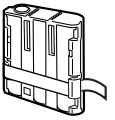
Carefully unpack the transceiver. We recommend you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

SUPPLIED ACCESSORIES

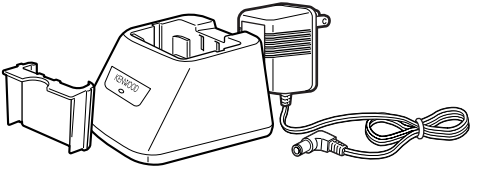
Item	Part Number	Quantity
Belt hook (with screws)	J29-0691-XX	1
KNB-27N battery pack	—	1
KSC-28 rapid charger (with holder and adapter)	—	1
Warranty card	—	1
Instruction manual	B62-1590-XX	1



Belt hook (with screws)

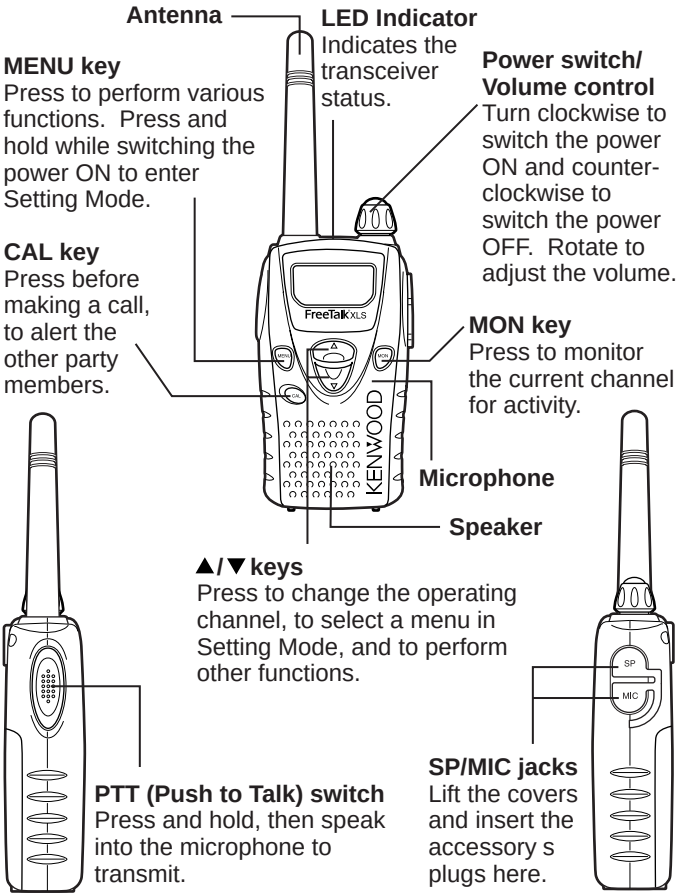


KNB-27N battery pack

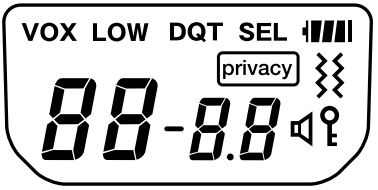


KSC-28 rapid charger (with holder and adapter)

ORIENTATION



DISPLAY



Icon	Description
VOX	Appears when VOX is activated.
LOW	Appears when using low transmission power.
DQT	Appears when the channel is set up with a DQT code.
privacy	Appears when Privacy Talk is activated.
SEL	This icon is not used on this transceiver.
	Displays the approximate battery power remaining. Blinks when the battery power is low.
	Appears when Incoming Call Notification is set to vibrate.
88-8.8	Displays the channel number along with its QT/ DQT setting (if it has been set). Also displays various menus and menu settings.
	Appears while monitoring a channel.
	Appears when the transceiver keys are locked.

PREPARATION

INSTALLING/ REMOVING THE BATTERY PACK

The battery pack is not charged at the factory; charge it before use (pages 6 and 7).

Average battery pack life using low power: 12 hours

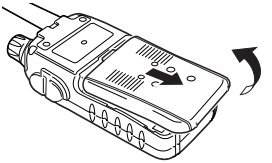
Average battery pack life using high power: 10 hours

- Average times are calculated using 5% transmit time, 5% receive time, and 90% standby time.

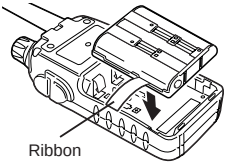
CAUTION

- Do not short the battery terminals or dispose of the battery by fire.
- Never attempt to remove the casing from the battery pack.

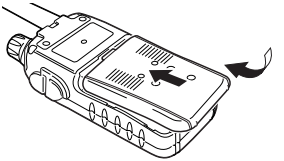
1 Remove the battery cover from the rear of the transceiver by sliding it back and pulling it away from the transceiver body.



2 Install the battery pack as shown in the diagram. When removing the battery pack, pull on the ribbon that is attached to the pack to dislodge the pack from the battery compartment.



3 Align the battery cover tabs with the slots on the transceiver, then firmly slide the cover into place.



INSTALLING/ REMOVING BATTERIES

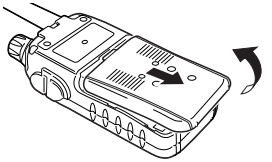
In place of the battery pack, you can use 3 AA batteries. Use high quality alkaline batteries to enjoy longer periods of battery life.

Average battery life using low power: 8 hours

Average battery life using high power: 4 hours

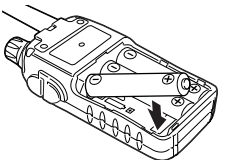
- Average times are calculated using 5% transmit time, 5% receive time, and 90% standby time.

1 Remove the battery cover from the rear of the transceiver by sliding it back and pulling it away from the transceiver body.

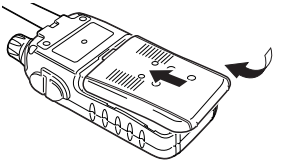


2 Install or remove 3 AA batteries.

- Be sure to match the battery polarities with those marked in the transceiver casing.



3 Align the battery cover tabs with the slots on the transceiver, then firmly slide the cover into place.



Note:

- Do not mix old and new batteries or batteries of different types.
- When you do not use the transceiver for an extended period of time, remove the batteries from the transceiver.

CHARGING THE BATTERY PACK

Initially charging the battery pack after purchase or extended storage (greater than 2 months) will not bring the battery pack to its normal operating capacity. After repeating the charge/ discharge cycle two or three times, the operating capacity will increase to normal.

- Do not recharge the battery pack if it is already fully charged. Doing so may cause the life of the battery pack to shorten or the battery pack may be damaged.
- After recharging the battery pack, disconnect it from the charger. Charging the battery pack for more than 5 days may reduce the battery pack life due to overcharging.

Note:

- The ambient temperature should be between 41°F and 104°F (5°C and 40°C) while charging is in progress. Charging outside this range may not fully charge the battery.
- Always switch OFF the transceiver equipped with a battery pack before charging. Using the transceiver while charging its battery pack will interfere with correct charging.
- The battery pack life is over when its operating time decreases even though it is fully and correctly charged. Replace the battery pack.

1 Plug the AC adapter cable into the adapter jack located on the rear of the charger.

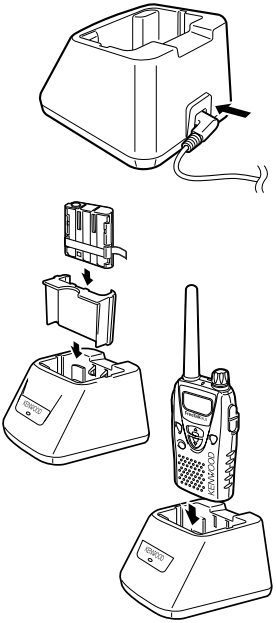
2 Plug the AC adapter into an AC outlet.

3 Slide a battery pack using the supplied holder or a transceiver equipped with a battery pack into the battery pack slot.

- Make sure the metal contacts of the battery pack mate securely with the charger terminals.
- The indicator lights red and charging starts.

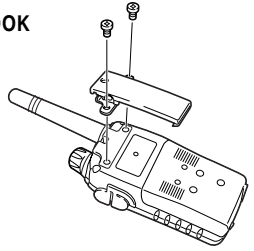
4 When charging is completed, the indicator lights green. Remove the battery pack or the transceiver from the battery pack slot.

- It takes approximately 2.5 hours to charge the battery pack.
- When the charger will not be used for a long time, unplug the AC adapter from the AC outlet.



Installing/ Removing the Belt Hook

If desired, attach the belt hook to the rear of the transceiver using the 2 supplied screws.



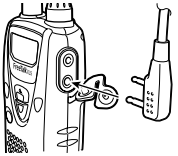
Installing/ Removing Optional Accessories

Note: Always switch OFF the transceiver power when installing or removing the optional accessories.

The following accessories can be used with this transceiver:

- KMC-21 Speaker-Microphone
- KHS-21 Headset
- KHS-1 Headset
- EMC-3 Clip Microphone with Earphone

To install these accessories:



1 Open the **SP/MIC** tabs on the side of the transceiver.

2 Insert the accessory's plugs into the **SP/MIC** jacks.

3 When you remove the accessory from the transceiver, be sure to cover the **SP/MIC** jacks with the attached tabs in order to keep dust and dirt away from the contacts.

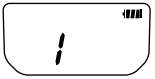
Note: Refer to the accessory instruction manuals for detailed instructions on each of the accessories.

GETTING STARTED

① Switch the Power ON.

Switch the transceiver power ON by turning the **Power** switch/ **Volume** control clockwise.

- A confirmation tone sounds. When using simplex operation, a single tone sounds. When using semi-duplex operation, two tones sound. Refer to page 32 for details on selecting simplex or semi-duplex operation.



To switch the transceiver power OFF, turn the **Power** switch/ **Volume** control fully counterclockwise, until a click sounds.

② Adjust the Volume.

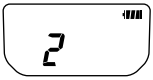
Set your desired volume level by rotating the **Power** switch/ **Volume** control.

- Clockwise increases the volume and counterclockwise decreases the volume.

Note: To adjust the volume using background noise as a reference, use the monitor function (page 16).

③ Select a Channel.

Select a channel from 1 to 15 by pressing the ▲ or ▼ key.



- A confirmation tone sounds each time you press the ▲ or ▼ key.
- When you receive a call on your selected channel, you will hear audio from the speaker and the LED will light green.
- To use a signalling code, refer to “QUIET TALK/ DIGITAL QUIET TALK” on page 11.

④ Make a Call.

1 Press the **MON** key to make sure the channel is not in use (refer to page 16).

2 Press and release the **CAL** key to alert the other parties that you are making a call.

- A calling alert tone will sound on the other party’s transceiver.

3 Press and hold the **PTT** switch, then speak into the microphone to transmit.

- The LED lights red while transmitting.
- For best sound quality, speak into the microphone in your normal speaking voice while holding the microphone approximately 1.5 inches (3 to 4 cm) from your lips.

4 Release the **PTT** switch when you have finished speaking.

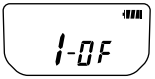
QUIET TALK/ DIGITAL QUIET TALK

QT (Quiet Talk) and DQT (Digital Quiet Talk) are functions that reject signals from undesired parties that are using the same channel as you. You will hear audio from the speaker only when you receive a signal that contains a tone or code matching the one set up on the channel you are using. Likewise, when you transmit on a channel set up with QT or DQT, the receiving station must have a matching tone or code in order to hear your signal.

You can select a tone or code for each channel. There are 38 QT tones (01 to 38) and 83 DQT codes (DQT01 to DQT83). After changing the QT/ DQT setting, confirm that the other members in your group have selected the same tone or code.

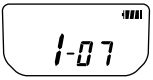
1 Press the **MENU** key.

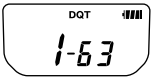
- The current setting blinks.



2 Press the ▲ or ▼ key to select your desired value.

- The values range from 01 to 38 for QT tones, then proceed to 01 to 83 for DQT codes. When you use a DQT code, the **DQT** icon appears on the display.





- "OF" means you have turned off both QT and DQT.
- Refer to pages 38 and 39 for the actual QT tones and DQT codes.

3 Press the **MENU** key 3 times, or press the **PTT**, **MON**, or **CAL** key to confirm the setting.

SCANNING THE CHANNELS

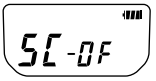
You can scan all the channels of the transceiver to search for a signal. When the transceiver verifies a signal on a channel, it proceeds to check whether or not its QT/ DQT setting matches that which is set up on your transceiver, if you have set a channel with QT/ DQT. If the QT/ DQT matches, the transceiver 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.

Before you can use the scan function, ensure that it is activated. You can turn the scan function (the ability to perform scan) ON or OFF in Setting Mode:

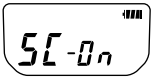
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "SC".



4 Press the **MENU** key to select "SC-OF" (scan function off) or "SC-On" (scan function on).



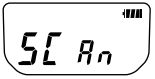
- If you select "SC-OF", you will no longer be able to perform scan by pressing and holding the ▲ key (see page 14).

5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

To begin scanning:

1 Press and hold the ▲ key for 1 second.

- SC An appears on the display.



2 When a signal is detected and the QT/ DQT matches, the channel number appears on the display and blinks.

3 When the signal is no longer present, the transceiver waits for 5 seconds before scanning continues.

- If a new signal appears before the 5 seconds elapse, the transceiver will remain on the channel until the new signal is no longer present, at which time it will again wait for 5 seconds before continuing.

4 To end the scan at any time, press and hold the ▲ key for 1 second.

- The transceiver returns to the channel you were using before you started scanning.

Revert Channel

The revert channel is the channel from which you start scanning. So, for example, if you are on channel 1 when you begin to scan, your revert channel is channel 1.

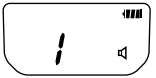
During scan, pressing the **PTT** switch will automatically select the transceiver's revert channel (in the above example, channel 1) and you will begin transmitting. However, if you are currently paused on another channel after having received a signal (in the above example, any channel other than channel 1 – such as channel 9), pressing the **PTT** switch will allow you to transmit on that channel, rather than returning to the revert channel. Scanning will resume after 5 seconds, unless a signal is present on the channel.

MONITORING A CHANNEL

When no signals are present, the squelch on the transceiver automatically mutes the speaker so you will not hear background noise. Using the **MON** key, you can disable the squelch to unmute the speaker at any time. This feature is useful for a variety of reasons:

- It allows you to confirm the channel activity so that you don't make a call while another party is using the same channel.
- It allows you to adjust the volume level without having to wait for a call.
- When receiving a call that is intermittent due to a weak signal, disabling the squelch will allow you to listen to the call without it continuously cutting out.

To manually deactivate the squelch, press and hold the **MON** key.



- When deactivated, the 🔊 icon appears on the display and the LED lights green.

To return to normal operation, simply release the **MON** key.

VOICE ACTIVATED CONTROL (VOX)

Using the VOX feature, you can operate the transceiver hands-free. In order to use this feature, however, you must use an optional headset; VOX will not function with the built-in microphone. For best operation conditions, we recommend you use an optional headset with both an ear piece and a microphone on a boom that rests in front of your mouth.

With VOX activated, your voice level will determine when the transceiver transmits. Because of this, you must take care that the ambient noise around you is not so loud that it causes the transceiver to transmit. Due to the automatic switching between transmission and reception, we recommend you set the VOX gain such that it will not activate transmission when in an area with excessive ambient noise.

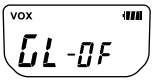
VOX GAIN

To enjoy the VOX function, take the time to properly adjust the VOX Gain. This level controls the VOX circuit to detect the presence or absence of your voice.

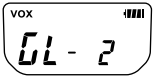
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "GL".



4 Press the **MENU** key to select "GL-OF" (VOX function is off) or "GL- 1" (VOX gain level 1) to "GL- 3" (VOX gain level 3).



- While adjusting the VOX Gain, the LED lights orange.

Note: Setting the VOX gain to OFF deactivates VOX. In order to transmit with VOX turned off, you must use the **PTT** switch.

5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

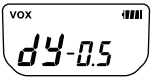
VOX Delay Time

If the transceiver returns to receive mode too quickly after you stop speaking, the end of your message may not be transmitted. To avoid this, select an appropriate delay time that allows your entire message to be transmitted. However, do not make the delay overly long.

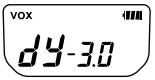
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "dY".



4 Press the **MENU** key to select "dY-0.1" (delay for 100 ms), "dY-0.3" (300 ms), "dY-0.5" (500 ms), "dY-1.0" (1 second), "dY-1.5" (1.5 seconds), or "dY-3.0" (3 seconds).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

VOX Operation

1 Set up a VOX gain level from 1 to 3 (page 17).

2 To transmit, simply speak into the headset microphone.

- You do not need to press the **PTT** switch; the transceiver automatically detects your voice and begins transmitting.

3 To stop transmitting, stop speaking.

- Transmission will continue momentarily after you stop speaking. You can select the delay time as described on page 18.

4 To exit VOX mode, set the VOX gain level (page 17) to "GL-OF" (OFF).

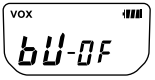
VOX Busy Lockout

While using VOX, you can set the transceiver to detect when the channel is busy (in use). With this function turned on, VOX will not allow you to transmit while the channel is being used. You can transmit only when the channel is free.

1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "bU".



4 Press the **MENU** key to select "bU-On" (busy lockout turned on) or "bU-OF" (busy lockout turned off).

5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

PRIVACY TALK

Whereas the Quiet Talk and Digital Quiet Talk functions (page 11) allow you to ignore unwanted calls, Privacy Talk allows you to hold a conversation in complete privacy. When activated, any other party listening in on your channel will be unable to understand your conversation. The transceiver scrambles your voice so that anybody listening to your conversation will not be able to understand what you are saying.

In order for members of your own group to understand your call while you are using Privacy Talk, all other members must also activate Privacy Talk on their transceivers. This scrambles everybody's voice while transmitting and unscrambles the voice message on your own transceiver when you receive the message.

1 Press the **MENU** key 2 times.

- The privacy icon appears on the display and blinks.

2 Press the ▲ or ▼ key to select "On" (privacy on) or "OF" (privacy off).

3 Press the **MENU** key 2 times, or press the **PTT**, **MON**, or **CAL** key to confirm the setting.

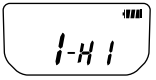
OPERATING FEATURES

TRANSMISSION POWER

You can adjust the transmission power on all channels. Selecting low power will allow longer use of the battery pack (refer to pages 4 and 5). Selecting high power will allow you to transmit farther, in case the other party is too far away for low power usage.

To change the transmission power:

1 Press the **MENU** key 3 times.



- The **LOW** icon and "LO" appear on the display when low power is selected. No icon and "H1" appear for high power.

2 Press the ▲ or ▼ key to select your desired output power.

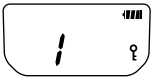
3 Press the **MENU** key 1 time to confirm the setting.

KEY LOCK

You can lock the **MENU**, ▲, and ▼ keys to prevent accidentally changing the operating mode and channel settings. The **PTT**, **CAL**, and **MON** keys still function normally.

Press and hold the **MENU** key for 1 second to lock or unlock the transceiver keys.

- The 🔑 icon appears on the display when the transceiver keys are locked. No icon appears when they are unlocked.



LAMP

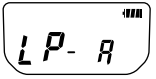
The lamp is used to illuminate the Liquid Crystal Display. You can set the lamp to remain off, remain on, or turn on when you press any key other than the **PTT** switch (auto). When set to auto, the lamp remains on for 5 seconds after pressing a key before turning off again.

To select the lamp setting:

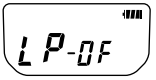
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "LP".



4 Press the **MENU** key to select "LP-OF" (lamp off), "LP-On" (lamp on), or "LP- A" (lamp auto).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

TIME-OUT TIMER

The purpose of the Time-out Timer is to prevent you from using a channel for a long time. This function is useful, for example, when you accidentally keep the **PTT** switch pressed. Additionally, by limiting the amount of time you can continuously transmit, this feature helps you save on battery power consumption.

If you continuously transmit for 3 minutes (default value), the transceiver will stop transmitting and a tone will sound. To stop the tone, release the **PTT** switch. You can press the **PTT** switch again to resume transmitting.

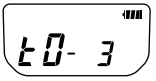
This transceiver is also equipped with a pre-alert tone which sounds 10 seconds before the Time-out Timer expires. This will allow you time to finish your message before the transceiver automatically stops transmitting.

To change the default value of 3 minutes:

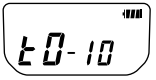
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "tO".



4 Press the **MENU** key to select "tO- 3" (3 minutes) or "tO-10" (10 minutes).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

Battery Save

This transceiver has been designed to give you the most out of your battery power. The battery save function decreases the amount of power used when a signal is not being received and no operations are being performed.

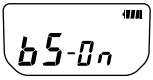
While using the transceiver, battery save will automatically switch ON after 10 seconds have elapsed with no operations or received calls. Operating the transceiver or receiving a call will switch this feature OFF until 10 seconds of non-operation occurs again.

You can turn this function ON or OFF:

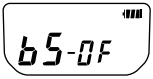
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "bS".



4 Press the **MENU** key to select "bS-On" (battery save on) or "bS-OF" (battery save off).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

BATTERY INDICATOR

When turned ON, the battery indicator on the display lets you know approximately how much battery life is remaining. When turned OFF, the battery indicator will appear and blink only when the battery voltage level is low.

When the battery voltage becomes too low while transmitting, the transceiver stops transmitting and a tone sounds until you release the **PTT** switch. Recharge or replace the battery pack at this time.

- High battery power
- Medium battery power
- Low battery power
- Time to recharge the battery pack

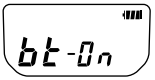
Note: This feature does not measure the accurate battery voltage when using alkaline batteries. When using alkaline batteries in place of the supplied battery pack, turn this function OFF.

You can turn this function ON or OFF:

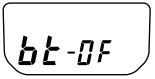
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "bt".



4 Press the **MENU** key to select "bt-On" (battery indicator on) to "bt-OF" (battery battery indicator off).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

CALLING ALERT TONES

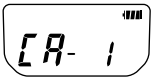
Calling alert tones are used to identify yourself to your party members. You can set up a calling alert tone to one of 6 types. If each party member uses a different calling alert tone, it is easy to know who is making the call. Pressing the **CAL** key before making a call will send your calling alert tone to your party members.

To set up your own calling alert tone:

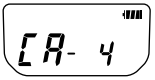
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "CA".



4 Press the **MENU** key to select "CA- 1" (calling alert tone 1) to "CA- 6" (calling alert tone 6).



- Each time you press **MENU** to select a calling alert tone, the new tone sounds.

5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

Incoming Call Notification Type

Note: To use Incoming Call Notification, you must set up a QT tone or a DQT code (page 11).

Incoming Call Notification is used to inform you of when a call is being received. You can set this function to notify you via a tone or through vibrating. When vibration is activated (either with the vibration only setting or the vibration and tone setting), the ⦚ icon appears on the display.

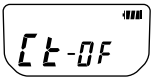
- When set to notify you via a tone only (setting 1), the tone is emitted when a busy signal is received and the QT/ DQT signalling matches. The tone will sound for 15 seconds before turning off. While the tone sounds, you will not hear any audio from the speaker. To turn the tone off and listen to the received call, press any key. After the call is finished, the transceiver will wait for 10 seconds before resetting the Incoming Call Notification. If you receive a new call within those 10 seconds, the tone will not sound. If no call is received within 10 seconds, Incoming Call Notification will reset so that the next time a call is received, the tone will sound again.
- When set to notify you via vibration only (setting 2), the transceiver vibrates when a busy signal is received and the QT/ DQT signalling matches. Audio can be heard from the speaker while the transceiver vibrates. To stop the 15 second vibrator, press any key. After the call is finished, the transceiver will wait for 10 seconds before resetting the Incoming Call Notification.
- When set to notify you via both a tone and through vibration (setting 3), the tone is emitted and the transceiver vibrates when a busy signal is received and the QT/ DQT signalling matches. As with a tone only, you will not hear audio from the speaker until the tone is stopped by pressing a key or the 15 second tone stops. After the call is finished, the transceiver will wait for 10 seconds before resetting the Incoming Call Notification.

To select your Incoming Call Notification type:

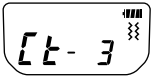
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "CT".



4 Press the **MENU** key to select "CT-OF" (incoming call notification type off: no tone or vibration), "CT- 1" (incoming call notification type 1: you are notified by a tone), "CT- 2" (incoming call notification type 2: you are notified by vibration), or "CT- 3" (incoming call notification type 3: you are notified by both a tone and by vibration).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

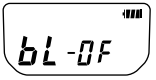
Busy Channel Lockout

This function is used in order to prevent transmitting on a channel that somebody else is currently using. When turned ON, a beep sounds when you press the **PTT** switch while another party is using the channel, and you cannot transmit.

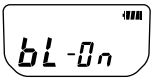
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "bL".



4 Press the **MENU** key to select "bL-On" (busy channel lockout on) or "bL-OF" (busy channel lockout off).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

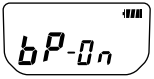
Transceiver Beep

When you turn the transceiver power ON or press a key, a beep will emit from the transceiver. If desired, you can turn this feature off:

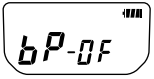
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select "bP".



4 Press the **MENU** key to select "bP-On" (beep on) or "bP-OF" (beep off).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

SIMPLEX/ SEMI-DUPLEX OPERATION

Simplex operation is simply transmitting and receiving between two parties. This is how you normally operate the transceiver. However, this transceiver is also capable of using semi-duplex operation. In semi-duplex operation, you are able to access a repeater, in order to transmit over longer distances. This can be useful when a party member is out of range of normal transmission. In order to use semi-duplex operation, a repeater must be available in the area. Refer to the channel frequency tables on pages 41 and 42 for the receive and transmit frequencies when using simplex or semi-duplex operation.

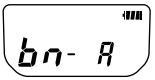
Unless you are familiar with the use of repeaters, and are aware of repeaters near your location, we recommend you do not use semi-duplex operation; use only simplex operation, the default frequency bank of this transceiver. There are two separate “banks” of frequencies stored in the transceiver (as listed on pages 41 and 42). Frequency Bank A stores those frequencies used for simplex operation and Frequency Bank B stores those frequencies used for semi-duplex operation.

To switch the bank between simplex (A) and semi-duplex (B) frequencies:

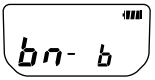
1 Turn the transceiver power OFF.

2 Press and hold the **MENU** key while turning the transceiver power ON (for 1 second).

3 Press the ▲ or ▼ key to select “bn”.



4 Press the **MENU** key to select “bn- A” (frequency bank A: simplex operation) or “bn- b” (frequency bank B: simplex operation).



5 Press the **PTT**, **MON**, or **CAL** key to exit Setting Mode.

RESETTING THE TRANSCEIVER

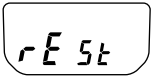
At some point in time, you may desire to reset the transceiver settings to their default values. The default values of all the menus can be found on page 43.

To reset the transceiver:

1 Turn the transceiver power OFF.

2 Press and hold the ▲, ▼, and **MON** keys while turning the transceiver power ON.

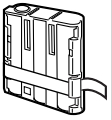
- rESt (reset) will appear on the display.



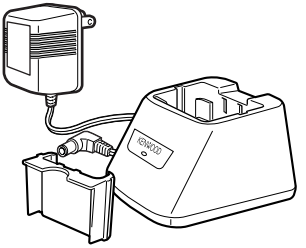
3 Release the ▲, ▼, and **MON** keys to reset the transceiver settings to their default values.

OPTIONAL ACCESSORIES

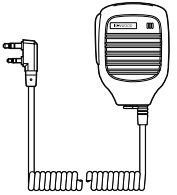
KNB-27N (Ni-MH battery pack)



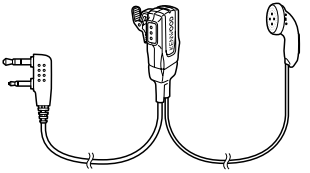
KSC-28 (Battery charger)



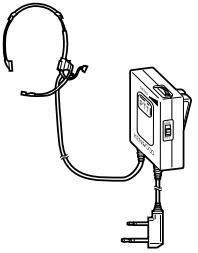
KMC-21 (Speaker-microphone)



EMC-3 (Clip mic with earphone)



KHS-1 (Headset)



KHS-21 (Headset)

NOTICES TO THE USER

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

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.

SAFETY INFORMATION:

Your wireless hand-held portable transceiver has been designed using a low power transmitter.

When the **PTT** switch is pressed, the transceiver generates radio frequency (RF) electromagnetic energy (EME).

This transceiver is designed to comply with the FCC Report and Order FCC 96-326 (August, 1996).

- Do not transmit for more than 50% of the total operating time. Transmitting for over 50% of the operating time may exceed the FCC RF exposure compliance requirements. Transmission occurs while you are pressing the PTT switch and is confirmed by the LED that lights red while transmitting.
- To transmit, speak into the microphone in your normal voice while holding the transceiver upright and keep the antenna at least 2 inches (5 cm) from your head and body.
- When using a headset, ensure that the antenna is at least 2 inches (5 cm) away from your body whenever you are transmitting.
- Use only **KENWOOD** genuine accessories. Unauthorized modifications, or attachments may damage the transceiver and violate FCC rules and regulations.

QT TONES/ DQT CODES

Display Number	Quiet Talk Frequency	Display Number	Quiet Talk Frequency	Display Number	Quiet Talk Frequency
OF	OFF	13	103.5 Hz	26	162.2 Hz
01	67.0 Hz	14	107.2 Hz	27	167.9 Hz
02	71.9 Hz	15	110.9 Hz	28	173.8 Hz
03	74.4 Hz	16	114.8 Hz	29	179.9 Hz
04	77.0 Hz	17	118.8 Hz	30	186.2 Hz
05	79.7 Hz	18	123.0 Hz	31	192.8 Hz
06	82.5 Hz	19	127.3 Hz	32	203.5 Hz
07	85.4 Hz	20	131.8 Hz	33	210.7 Hz
08	88.5 Hz	21	136.5 Hz	34	218.1 Hz
09	91.5 Hz	22	141.3 Hz	35	225.7 Hz
10	94.8 Hz	23	146.2 Hz	36	233.6 Hz
11	97.4 Hz	24	151.4 Hz	37	241.8 Hz
12	100.0 Hz	25	156.7 Hz	38	250.3 Hz

Display Number	Digital Quiet Talk Code	Display Number	Digital Quiet Talk Code	Display Number	Digital Quiet Talk Code
DQT 01	023	DQT 29	174	DQT 57	445
DQT 02	025	DQT 30	205	DQT 58	464
DQT 03	026	DQT 31	223	DQT 59	465
DQT 04	031	DQT 32	226	DQT 60	466
DQT 05	032	DQT 33	243	DQT 61	503
DQT 06	043	DQT 34	244	DQT 62	506
DQT 07	047	DQT 35	245	DQT 63	516
DQT 08	051	DQT 36	251	DQT 64	532
DQT 09	054	DQT 37	261	DQT 65	546
DQT 10	065	DQT 38	263	DQT 66	565
DQT 11	071	DQT 39	265	DQT 67	606
DQT 12	072	DQT 40	271	DQT 68	612
DQT 13	073	DQT 41	306	DQT 69	624
DQT 14	074	DQT 42	311	DQT 70	627
DQT 15	114	DQT 43	315	DQT 71	631
DQT 16	115	DQT 44	331	DQT 72	632
DQT 17	116	DQT 45	343	DQT 73	654
DQT 18	125	DQT 46	346	DQT 74	662
DQT 19	131	DQT 47	351	DQT 75	664
DQT 20	132	DQT 48	364	DQT 76	703
DQT 21	134	DQT 49	365	DQT 77	712
DQT 22	143	DQT 50	371	DQT 78	723
DQT 23	152	DQT 51	411	DQT 79	731
DQT 24	155	DQT 52	412	DQT 80	732
DQT 25	156	DQT 53	413	DQT 81	734
DQT 26	162	DQT 54	423	DQT 82	743
DQT 27	165	DQT 55	431	DQT 83	754
DQT 28	172	DQT 56	432		

SPECIFICATIONS

RF Output Power	Low	500 mW
	High	1 W
Audio Output Power		100 mW
Frequency Stability		±2.5 ppm
Operating Voltage		3.3 V ~ 5.0 V
Dimensions (projections not included)		56 x 28.75 x 117.5 mm (2 13/64 x 1 1/8 x 4 5/8 in)
Weight (with KNB-27N)		200g/ 7 oz

Channel Frequency Chart: Simplex Operation (Frequency Bank A)

Channel Number	Receive Frequency	Transmit Frequency
1	462.5625 MHz	462.5625 MHz
2	462.5875 MHz	462.5875 MHz
3	462.6125 MHz	462.6125 MHz
4	462.6375 MHz	462.6375 MHz
5	462.6625 MHz	462.6625 MHz
6	462.6875 MHz	462.6875 MHz
7	462.7125 MHz	462.7125 MHz
8 (White)	462.5750 MHz	462.5750 MHz
9 (Black)	462.6250 MHz	462.6250 MHz
10 (Orange) *	462.6750 MHz	462.6750 MHz
11	462.5500 MHz	462.5500 MHz
12	462.6000 MHz	462.6000 MHz
13	462.6500 MHz	462.6500 MHz
14	462.7000 MHz	462.7000 MHz
15	462.7250 MHz	462.7250 MHz

*** Emergency Channel:** Use the emergency channel only for the purpose of soliciting or rendering assistance to a traveler, or for communicating in an emergency pertaining to the immediate safety of life or the immediate protection of property. This channel is used by certain organizations during emergency situations, and may not necessarily be monitored.

Channel Frequency Chart: Semi-Duplex Operation (Frequency Bank B)

Channel Number	Receive Frequency	Transmit Frequency
1	462.5625 MHz	462.5625 MHz
2	462.5875 MHz	462.5875 MHz
3	462.6125 MHz	462.6125 MHz
4	462.6375 MHz	462.6375 MHz
5	462.6625 MHz	462.6625 MHz
6	462.6875 MHz	462.6875 MHz
7	462.7125 MHz	462.7125 MHz
8 (White)	462.5750 MHz	467.5750 MHz
9 (Black)	462.6250 MHz	467.6250 MHz
10 (Orange) *	462.6750 MHz	467.6750 MHz
11	462.5500 MHz	467.5500 MHz
12	462.6000 MHz	467.6000 MHz
13	462.6500 MHz	467.6500 MHz
14	462.7000 MHz	467.7000 MHz
15	462.7250 MHz	467.7250 MHz

*** Emergency Channel:** Use the emergency channel only for the purpose of soliciting or rendering assistance to a traveler, or for communicating in an emergency pertaining to the immediate safety of life or the immediate protection of property. This channel is used by certain organizations during emergency situations, and may not necessarily be monitored.

MENUS

No.	Display Name	Full Name	Settings	Default Setting	Ref. Page
1	bn	Frequency Bank Selection	Bank A (simplex)/ Bank B (semi-duplex)	Bank A	32
2	Ct	Incoming Call Notification Type	OFF/ 1 (Tone)/ 2 (Vibration)/ 3 (Tone+Vibration)	OFF	28
3	CA	Calling Alert Tone	Tone 1/ 2/ 3/ 4/ 5/ 6	Tone 1	27
4	LP	Lamp	OFF/ ON/ Auto	Auto	23
5	bL	Busy Channel Lockout	OFF/ ON	OFF	31
6	bt	Battery Indicator	OFF/ ON	ON	26
7	SC	Scan Function	ON/ OFF	OFF	13
8	tO	Time-out Timer	3/ 10 minutes	3 minutes	24
9	bP	Beep	ON/ OFF	ON	31
10	bS	Battery Save	ON/ OFF	ON	25
11	GL	VOX Gain	OFF/ 1/ 2/ 3	OFF	17
12	dy	VOX Delay Time	0.1/ 0.3/ 0.5/ 1.0/ 1.5/ 3.0 seconds	0.5 seconds	18
13	bU	VOX Busy Lockout	ON/ OFF	OFF	20

TROUBLESHOOTING GUIDE

Problem	Solution
Cannot turn the transceiver power ON.	• The batteries or battery pack may be dead. Replace the batteries or recharge or replace the battery pack. • The battery pack may not be installed correctly. Remove the battery pack and install it again.
Battery power dies shortly after charging.	• The battery pack life is finished. Replace the battery pack with a new one.
Cannot talk to or hear other members in your group.	• Make sure you are using the same frequency and QT/ DQT setting as the other members in your group. • Make sure you are using the same frequency bank (bank A: simplex operation or bank B: semi-duplex operation) as the other members in your group. • Other group members may be using Privacy Talk. Turn on your transceiver's Privacy Talk. • Other group members may be too far away. Make sure you are within range of the other transceivers.
Other voices (besides group members') are present on the channel.	• Change the QT/ DQT settings. Make sure all group members change the settings on their transceivers to match the new QT/ DQT setting.
The transceiver is malfunctioning for no apparent reason.	• Reset the transceiver as described on page 34.

Federal Communications Commission
1270 Fairfield Road
Gettysburg PA 17325-7245

Approved by OMB
3060-0136
Estimated public
burden is 6 minutes

TEMPORARY PERMIT TO OPERATE A GENERAL MOBILE RADIO SERVICE SYSTEM

Public reporting burden for this collection of information is estimated to average six minutes per response, including the time for revie instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the colle of information. Send comments regarding this burden estimate, or any other aspect of this collection of information, incl suggestions for reducing the burden to Federal Communications Commission, AMD-PERM, Washington, DC 20554, Paperwork Reducti Project (3060-0136), or via the Internet to jboley@fcc.gov.

1 INSTRUCTIONS

- Use this form only if you want a Temporary Permit in the General Mobile Radio Service to share multiple-licensed or cooperative-sharedmobile relay station whileyour application, FCC Form 574, isbeing processed by the Federal Communications Commission.
- Do not use this formif youoperate an individual, non-shared station or if you will be thefirst userof a facility intended for shared use.
- Do not use this form for any radio service other than the General Mobile Radio Service.
- Do not use this form unless you are anindividual. Partnerships, associations, corporations, and governmental entites are not eligible for a license in the General Mobile Radio Service.

2 CERTIFICATION

Read, Fill in Blanks and Sign

I hereby certify that:

- I am not a foreign government or a representative thereof.
- I am eligible in the General Mobile Radio Service under Rule Section 95.5.
- I have not been denied a license or had my license revoked by the FCC.
- I am not the subject of any other legal action concerning the operation of a radio station.
- My completed Form 574 has been mailed to the FCC.

Name of Applicant	Date Form 574 Mailed to FCC

Mailing Address ofApplicant (Number, Street, City State, ZIPCode)

Signature ofApplicant

If you cannot certify to all of the above statements, you are not eligible for a Temporary Permit. Willful fals statements made on this form are punishable by fine and/or imprisonment (U.S. Code, Title 18, Section 1001) and/or revocation of any station license or construction permit (U.S. Code, Title 47, Section 312(A)(1)), and/o forfeiture (U.S. Code 47, Section 503).

3 TECHNICAL INFORMATION

Location of Existing Licensed Facility

Location of Control Station(s) or point(s)

Number of Mobile Units	Licensee Presently Operating on the Shared Facility	
	Name	Call Sign

4 TEMPORARY CALL SIGN

- **Complete the blocks as indicated.**

Use this temporary call sign until a call sign is assigned by the Federal Communications Commission.

W	T							

Your temporary call sign will consist of the letters "WT" plus your business residence telephone number.

5 LIMITATIONS

- **Your authority under this Permit is subject to all applicable treaties, statutes and rules a is subject to the right of use or control by the Government of the United States.**
- **This Permit is valid for 180 days from the date the Form 574 is mailed to the FCC.**
- **You must have a Temporary Permit or a license from the FCC to operate your Gener Mobile Radio Service system transmitters.**
- **This Temporary Permit must be kept with your station records until your license is receiv**

DO NOT SUBMIT THIS FORM TO THE FCC

PacTronics, Inc.
800-607-2243
www.pactronics.com