KENWOOD

TK-2212/ TK-3212

VHF FM TRANSCEIVER/
UHF FM TRANSCEIVER

INSTRUCTION MANUAL

ÉMETTEUR-RÉCEPTEUR FM VHF/
ÉMETTEUR-RÉCEPTEUR FM UHF

MODE D'EMPLOI

TRANSCEPTOR DE FM VHF/
TRANSCEPTOR DE FM UHF

MANUAL DE INSTRUCCIONES

KENWOOD CORPORATION

© B62-1817-00 (K, K2, M, M2)
09 08 07 06 05 04 03 02 01 00

VHF FM TRANSCEIVER/
UHF FM TRANSCEIVER

TK-2212/ TK-3212

ENGLISH

INSTRUCTION MANUAL

KENWOOD CORPORATION

Thank You

We are grateful you chose **KENWOOD** for your land mobile radio applications. We believe this easy-to-use transceiver will provide dependable communications to keep personnel operating at peak efficiency.

KENWOOD transceivers incorporate the latest in advanced technology. As a result, we feel strongly that you will be pleased with the quality and features of this product.

Models Covered by this Manual

- **TK-2212:** VHF FM Transceiver
- **TK-3212:** UHF FM Transceiver

Notices to the User

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

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

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.

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

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

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

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 the die-cast chassis or other 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 microphone cable around your neck while near machinery that may catch the cable.
- Do not place the transceiver on unstable surfaces.
- Ensure that the end of the antenna does not touch your eyes.
- When the transceiver is used for transmission for many hours, the radiator and chassis will become hot. Do not touch these locations when replacing the battery pack.
- Do not immerse the transceiver in water.

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 aircrafts.
- In medical institutions or near persons using pacemakers.

CAUTION

- Do not disassemble or 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.

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UNPACKING AND CHECKING EQUIPMENT

Note: The following unpacking instructions are for use by your **KENWOOD** dealer, an authorized **KENWOOD** service facility, or the factory.

Carefully unpack the transceiver. We recommend that 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

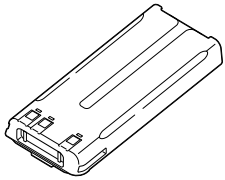
Item	Part number	Qty.
Antenna • VHF (K, M types only) • UHF (K, M types only) • UHF (K2, M2 types only)	 T90-1036-XX T90-1039-XX T90-1040-XX	1
Ni-MH battery pack (KNB-29N)	W09-1000-XX	1
Battery charger (KSC-31)	W08-0969-XX	1
AC adaptor • 120 VAC (K, K2 types only) • 230 VAC (M, M2 types only)	 W08-0970-XX W08-0971-XX	1
Belt clip (KBH-10)	J29-0713-XX	1
Speaker/ microphone jacks cap	B09-0680-XX	1
Speaker/ microphone locking bracket	J19-5472-XX	1
Screw set	N99-2043-XX	1
Instruction manual	B62-1817-XX	1

Note: A type code (K, K2, M, or M2) can be found on the label attached to the package box.

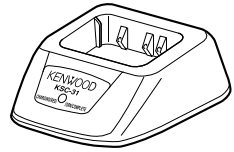
VHF Antenna
(K, M types only)

UHF Antenna
(K, M types only)

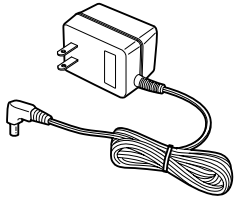
UHF Antenna
(K2, M2 types only)



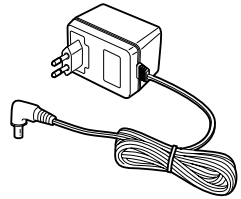
Ni-MH battery pack



Battery charger



AC adaptor
(K, K2 types only)



AC adaptor
(M, M2 types only)

Belt clip

Speaker/
microphone
jacks cap

Speaker/
microphone
locking bracket

Screw set

CHARGING THE BATTERY PACK

The battery pack is not charged at the factory; charge it before use.

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.

CAUTION

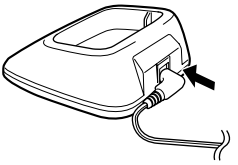
- Do not recharge the battery pack if it is already fully charged. Doing so may cause the life of the battery pack to shorten or the battery pack may be damaged.
- After charging the battery pack, disconnect it from the charger. If the charger power is reset (turned ON after it being turned OFF), recharging will start again and the battery pack will become overcharged.

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.

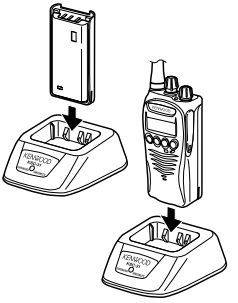
1 Plug the AC adaptor cable into the adaptor jack located on the rear of the charger.

2 Plug the AC adaptor into an AC outlet.



3 Slide the battery pack or a transceiver with a battery pack into the charger.

- Make sure the battery pack contacts are in contact with the charging terminals.
- The charger LED lights red and charging begins.



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

- It takes approximately 3 hours to charge the battery pack.

5 Unplug the AC adaptor from the AC outlet.

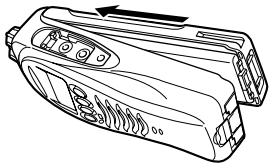
- When the charger will not be used for a long time, unplug the AC adaptor from the AC outlet.

INSTALLING/ REMOVING THE BATTERY PACK

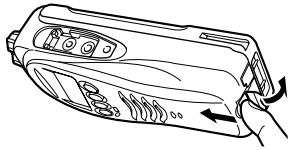
CAUTION

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

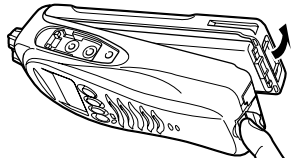
1 Align the battery pack with the back of the transceiver, then press the battery pack and transceiver firmly together until the release latch on the base of the transceiver locks.



2 To remove the battery pack, lift the safety catch on the base of the transceiver, then press the release latch underneath the safety catch.



3 While pressing the release latch, pull the battery pack away from the transceiver.



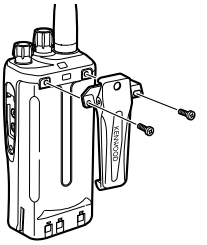
Installing the Antenna

Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

Note: The antenna is neither a handle, a key ring retainer, nor a speaker/ microphone attachment point. Using the antenna in these ways may damage the antenna and degrade your transceiver's performance.

Installing the Belt Clip

If desired, attach the belt clip using the two supplied 3 x 8 mm screws.



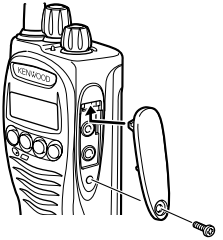
Note:

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

Installing the Cap over the Speaker/ Microphone Jacks

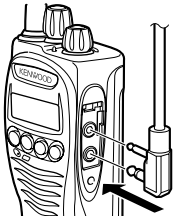
If you are not using an optional speaker/ microphone, install the cap over the speaker/ microphone jacks using the supplied 3 x 6 mm screw.

Note: To keep the transceiver water resistant, you must cover the speaker/ microphone jacks with the supplied cap.



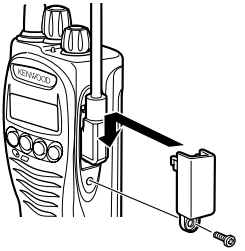
Installing the (Optional) Speaker/ Microphone or Headset

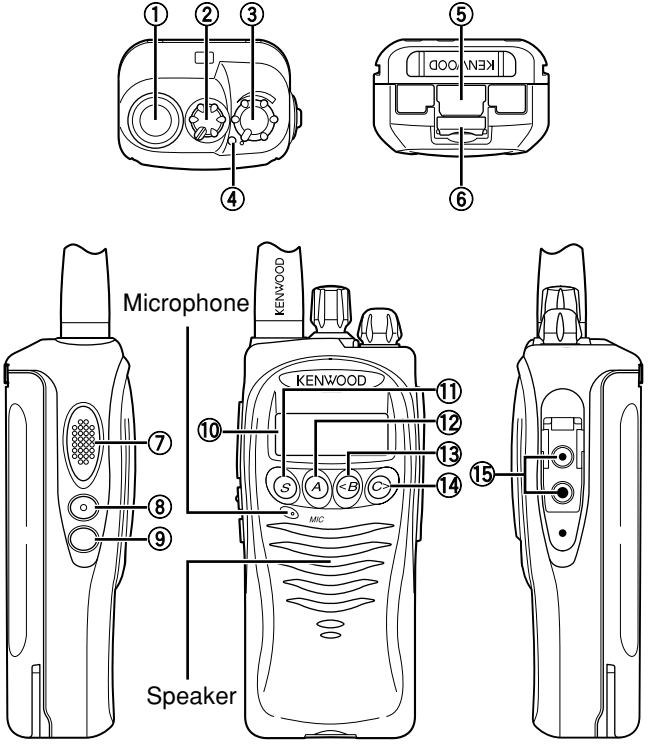
1 Insert the speaker/ microphone or headset plugs into the speaker/ microphone jacks.



2 Install the speaker/ microphone locking bracket over the plugs using the supplied 3 x 6 mm screw.

Note: The transceiver is not fully water resistant when using a speaker/ microphone or headset.




①
②
③
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⑤
⑥
KENWOOD
Microphone
KENWOOD
⑦
⑧
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⑩
⑪
⑫
⑬
⑭
⑮
S
A
B
C
MIC
Speaker

① **Antenna connector**
Connect an antenna here {page 6}.

② **Selector**
Your dealer can program the selector as either Zone Up/ Down (default setting) or Channel Up/Down. Rotate the selector to select a zone or channel.

③ **Power switch/ Volume control**
Turn clockwise to switch ON the transceiver. Rotate to adjust the volume. Turn counterclockwise fully to switch OFF the transceiver {page 13}.

④ **Transmit/ Busy/ Call indicator**
This LED lights red while transmitting and green while receiving a call. The LED flashes orange while receiving an encoded call (i.e. Code Squelch, etc.) and red when the battery power is low while transmitting.

⑤ **Release Latch**
Press the release latch to unlock and remove the battery pack {page 5}.

⑥ **Safety Catch**
Lock this catch to avoid accidentally pressing the release latch and removing the battery pack {page 5}.

⑦ **PTT (Push-to-Talk) switch**
Press this switch, then speak into the microphone to call a station.

⑧ **Side 1 key**
Press to activate its programmable function {page 12}. The default setting is Squelch Off Momentary.

⑨ **Side 2 key**
Press to activate its programmable function {page 12}. The default setting is Lamp.

⑩ **Display**
Refer to the display on pages 10 and 11.

⑪ **S key**
Press to activate its programmable function {page 12}.
The default setting is None (no function).

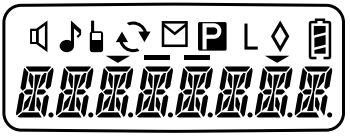
⑫ **A key**
Press to activate its programmable function {page 12}.
The default setting is None (no function).

⑬ **<B key**
Press to activate its programmable function {page 12}.
The default setting is Channel Down.

⑭ **C> key**
Press to activate its programmable function {page 12}.
The default setting is Channel Up.

⑮ **Speaker/ Microphone jacks**
Connect an optional speaker/ microphone or headset here {page 7}. Otherwise, keep the supplied cap in place.

DISPLAY



Icon	Description
	Appears when the key programmed as **Monitor** or **Squelch Off** is pressed.
	Appears when you receive a Code Squelch call or transmit using Code Squelch.
	Appears while using the Talk Around function.
	The selected zone is added to the scanning sequence.
	Appears while scanning.

Icon	Description
	Appears while using the VOX function
	Appears when a message is stored in the transceiver stack memory. Appears and blinks when a new message has arrived.
	The selected channel is set as a Priority channel.
L	Appears while using low transmit power on the selected channel.
	The selected channel is added to the scanning sequence.
	Appears when the Scrambler function has been activated.
	Displays the current battery status (full/ sufficent/ low/ requires charging).
	Displays the currently selected zone and channel number or the channel name. Also displays FleetSync messages.

PROGRAMMABLE FUNCTIONS

Side 1, **Side 2**, **S**, **A**, **<B**, and **C>** keys {pages 9 and 10} can be programmed with the functions listed below. Please contact your dealer for further details on these functions.

Note: The selector can be programmed as either Zone Up/Down or Channel Up/Down.

- Autodial
- Call 1
- Call 2
- Channel Down
- Channel Up
- Direct Zone - Channel
- Display Character
- Key Lock
- Lamp
- Low Transmission Power
- Monitor
- Monitor Momentary
- None
- Operator Selectable Tone (OST)
- Scan
- Scan Delete/Add
- Scrambler
- Selcall
- Selcall + Status
- Squelch Level
- Squelch Off
- Squelch Off Momentary
- Status
- Talk Around
- VOX
- Zone Down
- Zone Up

SWITCHING POWER ON/OFF

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

- A beep sounds and the display momentarily lights up.
- If the Transceiver Password function is programmed, "PASSWORD" appears on the display. Enter the password to unlock the transceiver (refer to "Transceiver Password", below).

Turn the **Power** switch/ **Volume** control counterclockwise to switch the transceiver OFF.

■ Transceiver Password

To enter the Transceiver Password:

1 Rotate the selector to select the first digit of the password.

2 Press the **C>** key to accept the entered digit and move to the next digit.

- Press the **A** key to delete an incorrect character. Press and hold the **A** key to delete all entered characters.

3 Repeat steps 1 and 2 to enter the entire password.

- The password can contain a maximum of 6 digits.

4 Press the **S** key to confirm password.

- If you enter an incorrect password, an error tone sounds and the transceiver remains locked.

ADJUSTING THE VOLUME

Rotate the **Power** switch/ **Volume** control to adjust the volume. Clockwise increases the volume and counter-clockwise decreases it.

- You may need to adjust the volume more precisely while communicating with other parties.

Note: If your dealer programmed **Squelch Off** or **Squelch Off Momentary** onto a PF key, you can use that key to hear background noise while adjusting the volume level (refer to "Monitor/ Squelch Off" on page 31).

Selecting a Zone and Channel

Select the desired zone using the selector or the keys programmed as **Zone Up**/ **Zone Down**.

- The default setting for the selector is **Zone Up**/ **Down**.

Select the desired channel using the selector or the keys programmed as **Channel Up**/ **Channel Down**.

- The default setting for the **<B** key is **Channel Down**.
- The default setting for the **C>** key is **Channel Up**.

Names can be programmed for channels with up to 8 characters each. The transceiver will display either the channel name or the zone and channel number. Press the key programmed as **Display Character** to toggle between the two displays.

Transmitting

1. Select your desired zone and channel using the selector and the **Zone** or **Channel** keys.
2. Press the key programmed as **Monitor** or **Squelch Off** to check whether or not the channel is free.
   - If the channel is busy, wait until it becomes free.
3. Press the **PTT** switch and speak into the microphone in your normal speaking voice.
   - For best sound quality at the receiving station, hold the microphone approximately 1.5 inches (3 ~ 4 cm) from your mouth.
4. Release the **PTT** switch to receive.

Receiving

1. Select your desired zone and channel using the selector and the **Zone** or **Channel** keys.
   - Alternatively, you can turn the Scan function on if desired.
2. When you hear a caller's voice, readjust the volume as necessary.

SCAN

If the Scan function is programmed, zones or channels can be scanned by pressing the key programmed as **Scan**. Scan can be used as either Single Scan or Multi Scan.

- Single Scan monitors only the channels of the currently selected zone, which have been added to the scanning sequence. If set up to scan Priority channels, the Priority channels will be scanned even if they are not within the currently selected zone.
- Multi Scan monitors all channels of every zone, which have been added to the scanning sequence.

To activate Scan, press the key programmed as **Scan**.

- The icon and either “SCAN” or the revert zone and channel number appear on the display.
- The zone add indicator ( ) will appear on the display when the selected zone is added to the scan sequence. The channel add indicator ( ) will appear on the display when the selected channel is added to the scan sequence.
- When a call is received, scanning stops and the zone and channel digits appear. Press the **PTT** switch and speak into the microphone to respond to the call. The transceiver will continue scanning after a predetermined time delay if the **PTT** switch is released and no further signal is received.

To stop scanning, press the **Scan** key again.

Note: You can only use Scan if your dealer has programmed at least 2 channels on the transceiver. Also, there must be at least 2 channels not locked out of Scan.

Add to Scan/ Delete from Scan

Press the key programmed as **Scan Delete**/**Add** to add or remove each channel to or from the scan sequence.

- The channel add indicator ( ) will appear on the display when the selected channel is added to the scan sequence.

Press and hold the key programmed as **Scan Delete**/**Add** to add or remove each zone to or from the scan sequence.

- The zone add indicator ( ) will appear on the display when the selected zone is added to the scan sequence.

Priority Scan

A Priority channel must be programmed in order for Priority Scan to function.

The transceiver will automatically change to the Priority channel when a signal is received on it, even if a signal is being received on a normal channel.

- The P icon appears on the display when the Priority channel is selected.

The transceiver will remain on the Priority channel until the signal is no longer present.

Revert Channel

During Scan, pressing the **PTT** switch to transmit will cause the transceiver to select the revert channel. Your dealer can program one of the following six types of Revert channels for your transceiver:

- **Selected:** The zone/ channel selected prior to activating Scan is assigned as the new revert zone and channel.
- **Selected + Talkback:** The zone/ channel selected prior to activating Scan is assigned as the new revert zone and channel. The transceiver also “talks back” on the current receive channel, allowing you to respond to a call on your current channel before Scan resumes.
- **Priority:** If your dealer has programmed a Priority channel, this channel is the revert zone and channel.
- **Priority + Talkback:** If your dealer has programmed a Priority channel, this channel is the revert zone and channel. The transceiver also “talks back” on the current receive channel, allowing you to respond to a call on your current channel before Scan resumes.
- **Last Called:** The last zone/ channel on which a call was received is assigned as the new revert zone and channel.
- **Last Used:** The last zone/ channel on which you responded to a call is assigned as the new revert zone and channel.

FleetSync is an Alphanumeric 2-way Paging Function, and is a protocol owned by **KENWOOD** Corporation. FleetSync enables a variety of paging functions on your transceiver, some of which depend on dealer programming.

SELCALL (SELECTIVE CALLING)

A Selcall is a voice call to a particular station or to a group of stations.

■ Transmitting

1. Select your desired zone and channel.
2. Press the key programmed as **Selcall** or **Selcall + Status** to enter Selcall mode.
   - The last selected station ID appears on the display.
3. Press the **<B** and **C>** keys to select the ID of the station you want to call.
4. Press the **PTT** switch and begin your conversation.
   - Alternatively, you can press the **Side 2** key to page the selected station, rather than making a voice call.

■ Receiving

An alert tone will sound, the transceiver will automatically enter Selcall Mode, and the calling station's ID will appear when a Selcall is received.

To respond to the call, press the **PTT** switch and speak into the microphone.

■ Identification Codes

An ID code is a combination of a 3-digit Fleet number and a 4-digit ID number. Each transceiver must have its own Fleet and ID number.

- Enter a Fleet number (100 ~ 349) to make a group call.
- Enter an ID number (1000 ~ 4999) to make an individual call in your fleet.
- Enter a Fleet number to make a call to all units in the selected fleet (Interfleet call).
- Enter an ID number to make a call to the selected ID in all fleets (Supervisor call).
- Select “ALL” Fleet and “ALL” ID to make a call to all units (Broadcast call).

Note: The ID range may be limited by programming.

STATUS MESSAGE

You can send and receive 2-digit Status messages which may be decided in your talk group. Messages can contain up to 16 alphanumeric characters. Status messages range from 10 to 99 (80 ~ 99 are reserved for special messages).

A maximum of 5 received messages can be stored in the Stack memory of your transceiver. These saved messages can be reviewed after reception. Depending on your dealer settings, when the Stack memory is full, either the oldest message will be erased when a new message is received or the new message will not be stored in the stack memory. The ✉ icon lights when a message is stored in the Stack memory.

■ Transmitting

1. Select your desired zone and channel.
2. Press the key programmed as **Status** to enter Status mode or **Selcall + Status** to enter Selcall mode.
   - When using the **Status** key to enter Status mode, the target Fleet/ ID is fixed and cannot be selected. Skip to step 5 to continue.
3. In Selcall mode, press the **<B** and **C>** keys to select the ID of the station you want to call.
4. Press the **S** key again to enter Status Mode.
5. Press the **<B** and **C>** keys to select the status ID you want to transmit.
6. Press the **PTT** switch or **Side 2** key to initiate the Status call.
   - "COMPLETE" is displayed when the call has been successfully transmitted.

■ Receiving

The ✉ icon will flash and a calling ID or text message will appear when a Status call is received.

Press any key to return to normal operation.

■ Reviewing Messages in the Stack Memory

1 Press and hold the key programmed as **Selcall**, **Status**, or **Selcall + Status** for 1 second to enter the Stack memory.

- The last received message is displayed with the message number.

2 Press the **<B** and **C>** keys to select the desired message.

- Press and hold the **S** key to toggle between the call ID/ message and the channel name.

3 Press the **Side 1** key to return to normal operation.

- To delete the selected message, press the **A** key. To confirm the deletion, press the **S** key.
- To delete all messages, press and hold the **A** key for 1 second. To confirm the deletion, press the **S** key.

CODE SQUELCH

Code Squelch is enabled or disabled by your dealer. This function turns the transceiver squelch OFF only when it receives the DTMF code that has been set up in your transceiver. Transceivers that do not transmit the correct code will not be heard. Consequently, you can communicate with a specific party without listening to other parties using the same channel.

Your dealer may also activate Group Call for your transceiver. This is useful when you want to send information to a number of units in a fleet. Ask your dealer for details.

Note: Code Squelch cannot be used on this transceiver if Selective Call {page 24} or DTMF Number Display {page 26} have been programmed.

■ Transmitting

1 Select your desired zone and channel.

2 Press and hold the **PTT** switch.

- The ♪ icon appears on the display and the LED indicator lights red.

3 Use the transceiver the same as in a regular call; press the **PTT** switch to transmit and release it to receive.

- The called transceiver's squelch will turn OFF while you are transmitting. After you stop transmitting, the squelch will turn back ON after a pre-set time period elapses. This time period is programmed by your dealer.
- When you release the **PTT** switch, squelch turns OFF and the LED indicator flashes orange. When you receive a signal, the LED indicator flashes green and orange. When the signal drops out, the LED indicator flashes orange again. If no signal is received for a pre-determined time, squelch turns back ON.
- Pressing the key programmed as **Monitor** at any time will turn the squelch back ON.

■ Autodial

1 Press the key programmed as **Autodial**.
   - The first entry in the Autodial list appears on the display.

2 Press the **<B** and **C>** keys to select your desired Autodial list number.

3 Press the **PTT** switch or **Side 2** key to make the call.

■ Receiving

When you receive a signal containing the correct code, squelch turns OFF and you will hear the call.

- The ♪ icon appears on the display and flashes and the LED indicator flashes orange.
- To mute the speaker after squelch turns OFF, press the key programmed as **Monitor**.
- Your dealer can program squelch to automatically turn back ON after a specific time period elapses.
- If Transpond for Code Squelch is programmed, an acknowledgment signal is returned to the calling station. Transpond does not function when you are called with a Group code. Transpond for Code Squelch can send an alert tone, a transceiver ID code, or the code stored in Autodial Memory location 1 (if programmed).
- If Call Alert for Code Squelch is programmed, an alert tone will sound when the correct code is received.

SELECTIVE CALL

Selective Call is enabled or disabled by your dealer. This function is similar to Code Squelch {page 20}. The differences from Code Squelch are as follows:

- You can transmit or receive message codes containing a maximum of 5 digits.
- Selective Call turns the squelch OFF only when the transceiver receives a predetermined DTMF code in the correct sequence: a 3-digit ID code, a 1-digit Intermediate code, and a message code (up to 5 digits).

Your dealer may also activate Group Call for your transceiver. This is useful when you want to send information to a number of units in a fleet. Ask your dealer for details.

Note: Selective Call cannot be used on this transceiver if Code Squelch {page 22} and DTMF Number Display {page 26} have been programmed.

■ Transmitting

1 Select your desired zone and channel.

2 Press and hold the **PTT** switch.

- The ♪ icon appears on the display and the LED indicator lights red.

3 Use the transceiver the same as in a regular call; press the **PTT** switch to transmit and release it to receive.

- The called transceiver's squelch will turn OFF while you are transmitting. After you stop transmitting, the squelch will turn back ON after a pre-set time period elapses. This time period is programmed by your dealer.
- When you release the **PTT** switch, squelch turns OFF and the LED indicator flashes orange. When you receive a signal, the LED indicator flashes green and orange. When the signal drops out, the LED indicator flashes orange again. If no signal is received for a pre-determined time, squelch turns back ON.
- Pressing the key programmed as **Monitor** at any time will turn the squelch back ON.

■ Autodial

1 Press the key programmed as **Autodial**.
- The first entry in the Autodial list appears on the display.

2 Press the **<B** and **C>** keys to select your desired Autodial list number.

3 Press the **PTT** switch or **Side 2** key to make the call.

■ Receiving

When you receive the correct ID and Intermediate codes, squelch turns OFF and you will hear the call. If a message code is also received, the message code appears on the display.

- The ♪ icon appears on the display and flashes and the LED indicator flashes orange.
- When you receive a call with your ID code, “C” appears on the display (i.e.- C 12345).
- When you receive a call with you Group code, “A” appears on the display (i.e.- A 12345).
- When no message is received, “NO DATA” appears on the display.
- To mute the speaker after squelch turns OFF, press the key programmed as **Monitor**.
- Your dealer can program squelch to automatically turn back ON after a specific time period elapses.
- If Transpond for Selective Call is programmed, an acknowledgment signal is returned to the calling station. Transpond does not function when you are called with a Group code. Transpond for Selective Call can send an alert tone, a transceiver ID code, or the code stored in Autodial Memory location 1 (if programmed).
- If Call Alert for Selective Call is programmed, an alert tone will sound when the correct codes are received.

STUN

This function is used when a transceiver is stolen or lost. When the transceiver receives a call containing a stun code, either transmit mode will be disabled, or both receive mode and transmit mode will be disabled. The stun code is cancelled when the transceiver receives a call with a revive code.

DTMF NUMBER DISPLAY

Note: This features can only be activated when DTMF Signaling is turned OFF.

When you receive a DTMF code containing at least 3 digits, it will appear on the display. Each successive digit will continue to scroll across the display, as long as each digit is received within 1 second of the previous digit. If no digit is received for more than 1 second, then when a new digit is received, the display will clear and begin with the new digit.

Cancel the DTMF Number Display by pressing any key.

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

Your dealer may have programmed QT or DQT signaling on your transceiver channels. A QT tone/ DQT code is a sub-audible tone/code which allows you to ignore (not hear) calls from other parties who are using the same channel.

When a channel is set up with a QT tone or DQT code, squelch will only open when a call containing a matching tone or code is received. Likewise, signals that you transmit will only be heard by parties whose QT/ DQT signaling matches your transceiver.

If a call containing a different tone or code is made on the same channel you are using, squelch will not open and you will not hear the call. This allows you to ignore (not hear) these calls. Although it may seem like you have your own private channel while using QT/ DQT, other parties can still hear your calls if they set up their transceiver with the same tone or code.

Operator Selectable Tone (OST)

If a key has been programmed with **OST**, you can reprogram the QT tone or DQT code on each channel.

1 Select your desired channel.

2 Press the key programmed as **OST**.

- The current OST tone pair or “Tone OFF” appears on the display.

3 Press the **<B** or **C>** keys to select your desired tone pair from 1 to 40, then operate the transceiver as normal.

4 Press the **Side 1** or **S** key to exit Operator Selectable Tone and return to normal operation.

VOICE OPERATED TRANSMISSION (VOX)

VOX can be activated or deactivated by your dealer. VOX operation allows you to transmit hands-free. This feature can only be used if you are using a supported headset.

When operating VOX, you must set a VOX Gain level. This setting allows the transceiver to recognize sound levels. If the microphone is too sensitive, it will begin transmitting when there is noise in the background. If it is not sensitive enough, it will not pick up your voice when you begin speaking. Be sure to adjust the VOX Gain level to an appropriate sensitivity to allow smooth transmission.

VOX GAIN LEVEL

1 Connect the headset to the transceiver.

- The VOX function does not activate when a headset is not connected to the accessory terminal of the transceiver.

2 Press the key programmed as **VOX**.

- The current VOX Gain level appears on the display.

3 Press the **<B** and **C>** keys to decrease or increase the VOX Gain level.

- The VOX Gain can be adjusted from levels 1 (low sensitivity) to 10 (high sensitivity). The default setting is level 5.

4 While adjusting the Gain level, speak into the headset microphone as you would while under normal operation, to test the sensitivity level.

- When the microphone recognizes a sound, the LED lights orange. This allows you to determine a suitable level where background noise will not activate VOX operation while speaking into the microphone will activate it.
- The transceiver does not transmit your voice during this test procedure.

5 Press the **Side 1** or **S** key to save the setting.

VOX Operation

1 Connect the headset to the transceiver.

- The VOX function does not activate when a headset is not connected to the accessory terminal of the transceiver.

2 Press and hold the key programmed as **VOX** for 2 seconds.

- The VOX icon ( ) appears on the display.

3 To transmit, simply speak into the microphone.

- The transceiver recognizes sound levels depending on the VOX Gain level. If the microphone is too sensitive, it will begin transmitting when there is noise in the background. If it is not sensitive enough, it will not pick up your voice when you begin speaking. Be sure to adjust the VOX Gain level to an appropriate sensitivity to allow smooth transmission.

4 When you finish speaking, the transceiver automatically returns to receive mode.

- Depending on the pre-programmed delay time, it may take a moment before returning to receive mode. The delay time ensures that the end of your conversation is not cut off when you finish speaking.

5 To turn the VOX function OFF, press and hold the **VOX** key again, for 2 seconds.

Note:

- If a speaker/ microphone is connected to the transceiver while the VOX function is switched ON and the VOX Gain Level is configured to a higher, more sensitive level, louder received signals may cause the transceiver to start transmission.
- When you operate the VOX function, you must use an optional KHS-1, KHS-21, or KHS-22 accessory.

Selecting a Transmit Power

Each channel is programmed with either high or low transmit power by your dealer. You can change the transmit power of only channels programmed as high.

When you can reliably communicate with other parties without using high transmit power, select low transmit power by pressing the key programmed as **Low Transmission Power**. Each time you press **Low Transmission Power**, the transmit power toggles between high and low.

- The L icon appears while using low transmit power.
- Using low transmit power conserves battery power and reduces the risk of interfering with other communications.

Note:

- Pressing **Low Transmission Power** while using a channel programmed with low transmit power causes an error tone to sound.
- When changing a channel from high transmit power to low transmit power, all channels programmed with high transmit power are changed to low transmit power.

Key Lock

This function is used to help prevent any accidental operation of the transceiver.

To lock the transceiver keys, press and hold the key programmed as **Key Lock** for 1 second.

- "LOCKED" appears on the display.
- You can continue to use the following functions (if available): **Key Lock**, **Lamp**, **Monitor**, **Monitor Momentary**, **PTT**, **Squelch Off**, and **Squelch Off Momentary**.

To unlock the keys, press and hold the **Key Lock** key again for 1 second.

MONITOR/ SQUELCH OFF

You can use the key programmed as **Monitor**/ **Squelch Off** to listen to weak signals that you cannot hear during normal operation and to adjust the volume when no signals are present on your selected channel.

- The icon appears on the display while Monitor/ Squelch Off is active.

Your dealer can program a key with one of 4 functions:

- **Monitor:** Momentarily press to deactivate QT, DQT, or optional signaling. Press the key again to return to normal operation.
- **Monitor Momentary:** Press and hold to deactivate QT, DQT, or optional signaling. Release the key to return to normal operation.
- **Squelch Off:** Momentarily press to hear background noise. Press the key again to return to normal operation.
- **Squelch Off Momentary:** Press and hold to hear background noise. Release the key to return to normal operation.

■ Squelch Level

To adjust the squelch level:

1. Press the key programmed as **Squelch Level**.
2. Press the **<B** key to decrease the squelch level (open) and the **C>** key to increase the squelch level (tighten).
3. Press the **Side 1** or **S** key to store the new setting and exit the squelch level adjustment.

SCRAMBLER

Although the scrambler function does not offer complete privacy with your calls, it does prevent others from easily listening in on your calls. When activated, the transceiver distorts your voice so that anybody listening to your call will be unable to clearly hear what you are saying.

In order for members of your own group to clearly hear your call while you are using the scrambler, all other members must also activate the scrambler functions on their transceivers. This distorts everybody's voice while transmitting and corrects the voice message on your own transceiver when you receive the call.

To activate the scrambler, press the key programmed as **Scrambler**.

- The ◊ icon appears on the display while the scrambler is active.

To deactivate the scrambler, press the **Scrambler** key again.

TALK AROUND

You may occasionally experience an interruption in service (due to a power failure, etc.). During such an occurence, you can continue communication by using the Talk Around feature, if it has been programmed by your dealer. Talk Around allows you to communicate directly with other transceivers, without the use of a repeater. However, if the station you want to contact is too far away, or there are geographical obstacles in the way, you may not be able to contact the station.

Toggle Talk Around on and off by pressing the key programmed as **Talk Around**.

- The appears on the display while Talk Around is active.
- When using Talk Around, the receive frequency is used for both transmitting and receiving, and the decode signaling is used for both encoding and decoding.

Transceiver Backlight

To turn the transceiver display and keypad backlight on, press the key programmed as **Lamp**.

- Pressing any key other than the **PTT** switch and the **Power** switch/ **Volume** control while the backlight is on will reset the backlight timer, allowing it to remain lit for an additional 5 seconds.

To turn the transceiver backlight off immediately, press the **Lamp** key while the backlight is on.

Time-out Timer (TOT)

The purpose of the Time-out Timer is to prevent any caller from using a channel for an extended period of time.

Your dealer can program the TOT in the range of 15 seconds to 10 minutes. If you continuously transmit for a period of time that exceeds this programmed time, the transceiver will stop transmitting and an alert tone will sound. To stop the tone, release the **PTT** switch.

Your dealer can also program a warning function to alert you before the TOT expires. Continuously transmitting for the time specified by your dealer will cause the warning tone to sound.

Battery Saver

When activated by your dealer, the Battery Saver function decreases the amount of power used when a signal is not being received and no operations are being performed (no keys are being pressed and no switches are being turned).

While the channel is not busy and no operation is performed for 5 seconds, Battery Saver activates. When a signal is received or an operation is performed, Battery Saver is disabled.

Compander

This background feature allows higher clarity of signals, avoiding excessive noise and interference. If the transceiver's internal compander has been programmed by your dealer, transmitted signals are compressed before being sent and received signals are expanded when they arrive.

Battery Power Indicator

The battery power indicator displays the battery power remaining, as illustrated below:

High

Sufficient

Low

Very low (flashing)

When the battery power is very low, replace or recharge the battery pack. If activated by your dealer, an alert tone will sound every 30 seconds and the LED indicator will blink red when the battery power is low while transmitting.

Busy Channel Lockout (BCL)

When activated, BCL prevents you from interfering with other parties who may be using the same channel that you selected. Pressing the **PTT** switch while the channel is in use will cause your transceiver to emit an alert tone and transmission will be inhibited (you cannot transmit). Release the **PTT** switch to stop the tone and return to receive mode.

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

Beginning/ End of Transmit Signal

The Beginning of Transmit and End of Transmit identification signals are used to access and release some repeaters.

If Beginning of Transmit is set, the ID signal is transmitted when you press the **PTT** switch.

If End of Transmit is set, the ID signal is transmitted when you release the **PTT** switch.

If both are set, the ID signal is transmitted when you press and release the **PTT** switch.

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