KENWOOD

TK-2312/ TK-3312

VHF FM TRANSCEIVER/
UHF FM TRANSCEIVER

INSTRUCTION MANUAL

ÉMETTEUR-RÉCEPTEUR FM VHF/
ÉMETTEUR-RÉCEPTEUR FM UHF

MODE D'EMPLOI

TRANSCEPTOR FM VHF/
TRANSCEPTOR FM UHF

MANUAL DE INSTRUCCIONES

Kenwood Corporation

09 08 07 06 05 04 03 02 01 00

VHF FM TRANSCEIVER/
UHF FM TRANSCEIVER

TK-2312/ TK-3312

ENGLISH

INSTRUCTION MANUAL

Kenwood Corporation

THANK YOU

We are grateful you have chosen **Kenwood** for your land mobile radio applications.

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.

ATTENTION:

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

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

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

ATTENTION:

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.

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.

TERMINAL DESCRIPTIONS

Speaker/ Microphone Jacks

You can use a resin-based cover for the Speaker/ Microphone jacks.

No.	Name	Description	Impedance	I/O
1	PTT / RXD	External PTT Input / Serial Data Input	CMOS	I
2	MIC	External MIC Input	1.8 kΩ	I
3	MICIN	Internal MIC Output	1.8 kΩ	O
4	OPTDET	External Option Detect	High Impedance	I
5	5M	5V Output	100 Ω	O
6	AE	GND	GND	–
7	TXD	Serial Data Output	CMOS	O
8	NC	No Connection	–	–
9	SPO	Audio Input	8 Ω	I
10	SPI	Received Audio Output	8 Ω	O

Antenna Terminal

50 Ω impedance

Battery Terminal

The battery terminal uses a spring plate.
The negative terminal connects to the chassis ground.
The battery is mounted on the rear side of the transceiver using a latch mounting method.

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.
- Always switch the transceiver power off before installing optional accessories.
- For safety reasons, we recommend that the AC adapter (for the battery charger) should be connected to an easily accessible AC socket.

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. (Any use of the transceiver must follow the instructions and regulations provided by the airline crew.)
- Where restrictions or warnings are posted regarding the use of radio devices, including but not limited to medical facilities.
- Near persons using pacemakers.

CAUTION

- Do not 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.
- Do not carry the battery pack (or battery case) with metal objects, as they may short the battery terminals.
- When operating the transceiver in areas where the air is dry, it is easy to build up an electric charge (static electricity). When using a earphone accessory in such conditions, it is possible for the transceiver to send an electric shock through the earphone and to your ear. We recommend you use only a speaker/microphone in these conditions, to avoid electric shocks.

Information concerning the battery pack:

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

- **Do not disassemble or reconstruct battery!**
  The battery pack has a safety function and protection circuit to avoid danger. If they suffer serious damage, the battery may generate heat or smoke, rupture, or burst into flame.
- **Do not short-circuit the battery!**
  Do not join the + and – terminals using any form of metal (such as a paper clip or wire). Do not carry or store the battery pack in containers holding metal objects (such as wires, chain-necklace or hairpins). If the battery pack is short-circuited, excessive current will flow and the battery may generate heat or smoke, rupture, or burst into flame. It will also cause metal objects to heat up.
- **Do not incinerate or apply heat to the battery!**
  If the insulator is melted, the gas release vent or safety function is damaged, or the electrolyte is ignited, the battery may generate heat or smoke, rupture, or burst into flame.
- **Do not leave the battery near fire, stoves, or other heat generators (areas reaching over 80°C/ 176°F)!**
  If the polymer separator is melted due to high temperature, an internal short-circuit may occur in the individual cells and the battery may generate heat or smoke, rupture, or burst into flame.
- **Do not immerse the battery in water or get it wet by other means!**
  If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not charge the battery near fire or under direct sunlight!**
  If the battery's protection circuit is damaged, the battery may charge at extreme current (or voltage) and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

DANGER

- **Use only the specified charger and observe charging requirements!**
  If the battery is charged in unspecified conditions (under high temperature over the regulated value, excessive high voltage or current over regulated value, or with a remodeled charger), it may overcharge or an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not pierce the battery with any object, strike it with an instrument, or step on it!**
  This may break or deform the battery, causing a short-circuit. The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not jar or throw the battery!**
  An impact may cause the battery to leak, generate heat or smoke, rupture, and/or burst into flame. If the battery's protection circuit is damaged, the battery may charge at an abnormal current (or voltage), and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not use the battery pack if it is damaged in any way!**
  The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not solder directly onto the battery!**
  If the insulator is melted or the gas release vent or safety function is damaged, the battery may generate heat or smoke, rupture, or burst into flame.
- **Do not reverse the battery polarity (and terminals)!**
  When charging a reversed battery, an abnormal chemical reaction may occur. In some cases, an unexpected large amount of current may flow upon discharging. The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not reverse-charge or reverse-connect the battery!**
  The battery pack has positive and negative poles. If the battery pack does not smoothly connect with a charger or operating equipment, do not force it; check the polarity of the battery. If the battery pack is reverse-connected to the charger, it will be reverse-charged and an abnormal chemical reaction may occur. The battery may generate heat or smoke, rupture, or burst into flame.

DANGER

- **Do not touch a ruptured and leaking battery!**
  If the electrolyte liquid from the battery gets into your eyes, wash your eyes with fresh water as soon as possible, without rubbing your eyes. Go to the hospital immediately. If left untreated, it may cause eye-problems.

WARNING

- **Do not charge the battery for longer than the specified time!**
  If the battery pack has not finished charging even after the regulated time has passed, stop it. The battery may generate heat or smoke, rupture, or burst into flame.
- **Do not place the battery pack into a microwave or high pressure container!**
  The battery may generate heat or smoke, rupture, or burst into flame.
- **Keep ruptured and leaking battery packs away from fire!**
  If the battery pack is leaking (or the battery emits a bad odor), immediately remove it from flammable areas. Electrolyte leaking from battery can easily catch on fire and may cause the battery to generate smoke or burst into flame.
- **Do not use an abnormal battery!**
  If the battery pack emits a bad odour, appears to have different coloring, is deformed, or seems abnormal for any other reason, remove it from the charger or operating equipment and do not use it. The battery may generate heat or smoke, rupture, or burst into flame.

CONTENTS

UNPACKING AND CHECKING EQUIPMENT

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

SUPPLIED ACCESSORIES

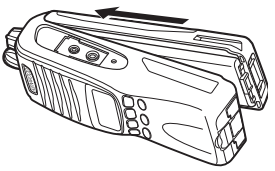
- Antenna 1
- Battery charger 1
  - P type: KSC-31
  - K and M types: KSC-35
- Battery pack 1
  - P type: KNB-29N Ni-MH Battery pack
  - K and M types: KNB-45L Li-ion Battery pack
- Speaker/ microphone jack cover 1
- Speaker/ microphone locking bracket 1
- Belt clip (KBH-10) 1
- Screw set
  - M3 x 6 mm (Black) 1
  - M3 x 8 mm 2
- Instruction manual 1

Note: Refer to "PREPARATION" {page 2} for accessory installation instructions.

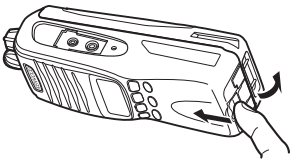
INSTALLING/ REMOVING THE BATTERY PACK

CAUTION

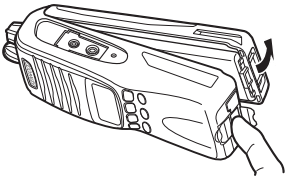
- Do not short the battery terminals or dispose of the battery by fire.
- Never attempt to remove the casing from the battery pack.



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.



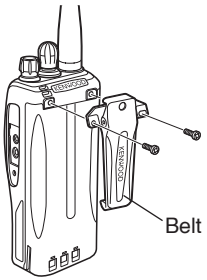
3 While pressing the release latch, pull the battery pack away from the transceiver.

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 necessary, attach the belt clip using the two supplied M3 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.

CAUTION

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

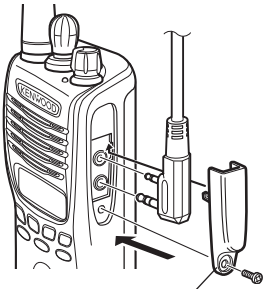
INSTALLING THE SPEAKER/ MICROPHONE JACKS COVER

Speaker/ microphone jack cover

If you are not using a speaker/ microphone, install the cover over the speaker/ microphone jacks using the supplied M3 x 6 mm screw.

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

INSTALLING THE OPTIONAL SPEAKER/ MICROPHONE (OR HEADSET)



Speaker/ microphone locking bracket

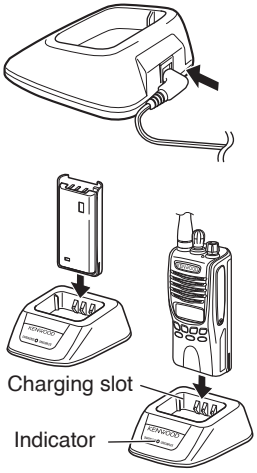
1. Insert the speaker/ microphone (or headset) plugs into the speaker/ microphone jacks.
2. Attach the locking bracket using the supplied M3 x 6 mm screw.

Note: The transceiver is not fully water resistant while using the speaker/ microphone.

CHARGING THE BATTERY PACK

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

ATTENTION: Always switch OFF a transceiver equipped with a battery pack before inserting the transceiver into the charger.

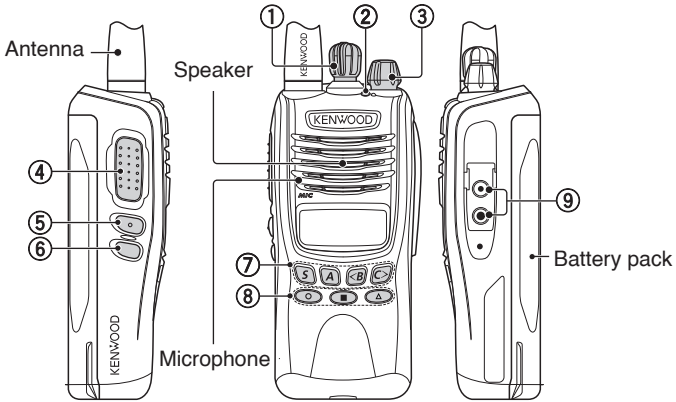


1. Plug the AC adapter cable into the jack on the rear of the charger.
2. Plug the AC adapter into an AC outlet.
3. Slide a battery pack or transceiver equipped with a battery pack into the charging slot of the charger.
   - Make sure the metal contacts of the battery pack mate securely with the charger terminals.
   - The indicator lights red and charging begins.
4. When charging is complete, the indicator lights green. Remove the battery pack or transceiver from the charger.
   - It takes approximately 3 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.

Note:

- When the indicator blinks red, the battery pack is either defective or the battery pack contacts are not properly mated with those of the charger.
- 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.
- The battery pack life is over when its operating time decreases even though it is fully and correctly charged. Replace the battery pack.

ORIENTATION



① **Selector**

Rotate to change the operating zone or channel.
The default setting is **[Zone Up/ Down]**.

② **LED indicator**

Refer to the table on page 7 for the LED indicator status.

③ **Power switch/ Volume control**

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

④ **PTT (Push to Talk) switch**

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

⑤ **Side 1 key**

Press to activate its programmable function.
The default setting is **[Squelch Off Momentary]**.

⑥ **Side 2 key**

Press to activate its programmable function.
The default setting is **[None]** (no function).

⑦ **S, A, <B, C> keys**

Press to activate their programmable functions.
S key: The default setting is **[None]** (no function).
A key: The default setting is **[None]** (no function).
<B key: The default setting is **[Channel Down]**.
C> key: The default setting is **[Channel Up]**.

⑧ **O, ■, Δ keys**

Press to activate their programmable functions.
The default setting is **[None]** (no function).

⑨ **Speaker/ Microphone jacks**

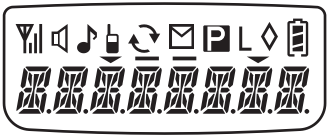
Insert the Speaker/ Microphone or Headset plug into this jack.

LED Indicator Status

Indicator Color	Meaning
Lights red	Transmitting
Lights green	Receiving a call
Lights orange	While VOX level setup
Blinks red	Battery power is low while transmitting
Blinks green	Scanning
Blinks orange*	Receiving an encoded call (FleetSync, DTMF signaling, etc.)

* Your dealer can change this setting to blue, instead of orange, for FleetSync operation.

DISPLAY



Indicator	Description
	Displays the strength of received signals {page 25}.
	Appears when the Monitor or Squelch Off function has been activated.
	Appears when using 2-tone, DTMF, or QT/DQT + Optional Signaling.
	Appears while using the Talk Around function.
	Appears while scanning.
	Appears when a message is stored in the transceiver stack memory. Blinks when a new message has arrived.
P	The selected channel is set as a Priority channel.
L	Appears while using low transmit power on the selected channel.
	Appears when the Scrambler function has been activated.
	Displays the current battery status {page 25}.
	The selected zone is added to the scanning sequence.

Indicator	Description
	The selected channel is added to the scanning sequence.
	Appears while using the VOX function.
	Appears when the AUX function has been activated.
	Displays the zone and channel number or name as well as FleetSync messages and DTMF codes.

PROGRAMMABLE AUXILIARY FUNCTIONS

The **Side 1**, **Side 2**, **S**, **A**, **<B**, **C>**, **O**, **■**, and **Δ** keys 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]**.

- None (No function)
- 2-tone
- Autodial
- Call 1
- Call 2
- Channel Down
- Channel Up
- Calling Alert
- Direct Zone Channel
- Display Character
- Emergency
- Key Lock
- Lamp
- Lone Worker
- Low Transmit Power
- Monitor
- Monitor Momentary
- Operator Selectable Tone (OST)
- Scan
- Scan Del/Add
- Scrambler
- Selcall
- Selcall+Status
- Squelch Off
- Squelch Off Momentary
- Squelch Level
- Status
- Talk Around
- Status
- VOX
- Zone Down
- Zone Up

BASIC OPERATIONS

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

If your transceiver is password protected, you must first enter the password before you can use the transceiver.

1 Rotate the **Selector** to select the first digit of the password.

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

- Press **A** to delete an incorrect digit. Press and hold **A** to delete all entered digits.

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

- The password can contain a maximum of 6 digits.

4 Press **S** to confirm the entered 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 counterclockwise 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.

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

Scan monitors for signals on the transceiver channels. While scanning, the transceiver checks for a signal on each channel and only stops if a matching signal is present.

To start/stop scanning, press the key programmed as **[Scan]**.

- The ↻ indicator appears during Scan.
- When a signal is detected, Scan pauses at that channel. The transceiver will remain on the busy channel until the signal is no longer present, at which time Scan resumes.

Note: To use Scan, there must be at least 2 channels added to the scanning sequence.

PRIORITY SCAN

If a Priority channel has been programmed, the transceiver will automatically change to the Priority channel when a call is received on that channel, even if call is being received on a normal channel.

- The P indicator appears when the selected channel is the Priority channel (depending on dealer setting).

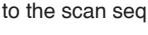
TEMPORARY CHANNEL LOCKOUT

During scan, you can temporarily remove specific channels from the scanning sequence by momentarily pressing the key programmed as **[Scan Del/Add]** while Scan is paused at the undesired channel. To temporarily remove a zone, press and hold the **[Scan Del/Add]** key while Scan is paused at a channel in the undesired zone.

- The channel/zone is no longer scanned. However, when scanning is ended and restarted, the Scan settings return to normal.

SCAN DELETE/ADD

You can add and remove zones and/or channels to and from your scan list.

1. Select your desired zone and/or channel.
2. Press the key programmed as **[Scan Delete/Add]** to remove a channel or press and hold the key for approximately 1 second to remove a zone.
   - The channel add indicator () appears when the selected channel is added to the scan sequence.
   - The zone add indicator () appears when the selected zone is added to the scan sequence.

SCAN REVERT

The Scan Revert channel is the channel selected when you press the **PTT** switch to transmit during scan. Your dealer can program one of the following types of Scan Revert channels:

- **Selected:** The last channel selected before scan.
- **Selected + Talkback:** Same as “Selected”, plus you can respond to calls on the channel at which scan is paused.
- **Priority:** The Priority channel.
- **Priority + Talkback:** Same as “Priority”, plus you can respond to calls on the channel at which scan is paused.
- **Last Called + Selected:** The last channel on which you receive a call. If you have not yet received a call, then the last channel selected before scan.

DTMF CALLS

AUTODIAL

Autodial allows you to quickly call DTMF numbers that have been programmed onto your transceiver.

1 Press the key programmed as **[Autodial]**.

- The last called number appears.

2 Press **<B** or **C>** to select your desired Autodial list number.

3 Press the **PTT** switch to make the call.

- Press **S** to exit without making a call.

STUN

This function is used when a transceiver is stolen or lost. When the transceiver receives a call containing a stun code, the transceiver becomes disabled. The stun code is cancelled when the transceiver receives a call with a revive code.

- "STUN" appears while the transceiver is stunned.

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.

Press any key to cancel the DTMF number display.

SIGNALING

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

Your dealer may have programmed QT or DQT signaling on your transceiver channels. QT and DQT signals allow you to ignore (not hear) calls from other parties who are using the same channel.

OPTIONAL SIGNALING

Your dealer may also program several types of optional signaling for your transceiver channels.

2-tone Signaling: 2-tone Signaling opens the squelch only when your transceiver receives a call containing matching 2 tones.

DTMF Signaling: DTMF Signaling opens the squelch only when the transceiver receives a call containing a matching DTMF code.

FleetSync Signaling: Refer to "SELCALL (SELECTIVE CALLING)" on page 17.

MDC-1200: MDC-1200 is a data system using Audio Frequency Shift Keying (AFSK).

OPERATOR SELECTABLE TONE (OST)

You can change the preset encode and decode tones for the selected channel. Up to 40 OST pairs can be pre-programmed by your dealer.

1 Select your desired channel.

2 Press the key programmed as **[Operator Selectable Tone (OST)]** to enter OST Select Mode.

- "OST" and the current OST number appear.

3 Press **<B** or **C>** to select the desired OST table number.

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

5 To exit OST mode and return to the preset encode and decode tones, press **S**.

FleetSync

FleetSync is an Alphanumeric 2-way Paging Function and is a protocol owned by **Kenwood** Corporation.

Note: If set up by your dealer, your transceiver may use the MDC-1200 feature in place of FleetSync. MDC-1200 and FleetSync cannot be operated simultaneously.

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 **<B** or **C>** 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.

Note: The ID range may be limited by programming.

STATUS MESSAGES

You can transmit pre-programmed status messages by pressing the keys programmed as **[Status]** and **[Selcall + Status]**.

Status messages are 2-digit codes ranging from 10 to 99 (80 ~ 99 are reserved for special messages).

■ 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 **<B** or **C>** to select the ID of the station you want to call.
4. Press **S** to enter Status Mode.
5. Press **<B** or **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" appears when the call has been successfully transmitted.

■ Receiving

The ☑ indicator 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 **<B** or **C>** to select the desired message.

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

SHORT MESSAGES

This transceiver can receive short data messages which contain a maximum of 48 characters.

- Received short messages are displayed the same as Status messages. A maximum of 3 short message can be stored in the stack memory, along with 5 Status messages.

VOICE OPERATED TRANSMISSION (VOX)

VOX operation allows you to transmit hands-free. This feature can be activated or deactivated by your dealer.

VOX OPERATION

1 If the VOX function is not ON, press and hold the key programmed as **[VOX]** for 2 seconds.

- The VOX indicator (VOX) appears when the VOX function is ON.

2 Connect a headset to the transceiver.

3 To transmit, simply speak into the microphone.

- The transceiver recognizes sound levels depending on the VOX Gain level.

4 When you finish speaking, transmission ends.

VOX GAIN LEVEL

1 Press the key programmed as **[VOX]** when the VOX function is not ON.

- The current VOX Gain level appears on the display.

2 Press **<B** or **C>** to select your desired VOX Gain level.

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

3 While adjusting the level, speak into the headset microphone to test the sensitivity level. (Your voice is not transmitted during this test procedure.)

- If the VOX Gain is too sensitive, transmission will occur when there is noise in the background. If it is not sensitive enough, it will not pick up your voice when you begin speaking.

4 Press **S** to save the setting.

TRANSMIT POWER

Each channel is programmed with either high or low transmit power. On high transmit power channels, press the key programmed as **[Low Transmit Power]** to change the transmit power to low power (you cannot change low transmit power channels to use high power).

- The L indicator appears while using low transmit power.

CALLING ALERT

The Calling Alert tone alerts party members that you are making a call. To make a call:

1 Briefly press and hold the key programmed as **[Calling Alert]**.

- Release the key to end the tone transmission.

2 Press the **PTT** switch and speak into the microphone in your normal speaking voice.

KEY LOCK

Press and hold the key programmed as **[Key Lock]** for 2 seconds to lock the transceiver keys. Press and hold the **[Key Lock]** key again to unlock the keys.

- "LOCKED" appears when a key is pressed while the keys are locked.

Note: You can still use the following keys and functions when Key Lock is activated: **[Emergency]**, **[Monitor]**, **[Monitor Momentary]**, **[Squelch Off]**, **[Squelch Off Momentary]**, **[Key Lock]**, **PTT**.

EMERGENCY CALLS

If your transceiver has been programmed with the Emergency function, you can make emergency calls.

1 Press and hold the key programmed as **[Emergency]**.

- Depending on the delay time programmed into your transceiver, the length of time you must hold the Emergency key will vary.
- When the transceiver enters Emergency mode, the transceiver will change to the Emergency channel and begin transmitting based on how the transceiver is set up.

2 To exit Emergency mode, press and hold the **[Emergency]** key again.

- If the Emergency mode completes the preset number of cycles, Emergency mode will automatically end and the transceiver will return to normal.

■ Lone Worker Mode

Lone Worker Mode is a safety feature built into the transceiver. If the transceiver is not operated for a pre-programmed period of time, the transceiver will emit a tone and automatically enter Emergency operation.

Press and hold the key programmed as **[Lone Worker]** for 2 seconds to toggle the Lone Worker function ON or OFF.

TALK AROUND

During interruptions in service (such as a power failure), you can continue to communicate by using the Talk Around feature. Talk Around allows you to communicate directly with other transceivers without the use of a repeater, as long they are not too far away or there are no geographical obstacles in the way.

Press the key programmed as **[Talk Around]** to toggle the Talk Around function ON or OFF.

- The indicator appears while Talk Around is activated.

VOICE SCRAMBLER

The scrambler prevent others from easily listening in on your calls. When activated, the transceiver distorts your voice so that anybody listening to your conversation will not be able to clearly hear what you are saying.

In order for members of your own group to hear your call while you are using the scrambler, all members must activate their scrambler functions.

Press the key programmed as **[Scrambler]** to toggle the Scrambler function ON or OFF.

- The ◊ indicator appears while the Scrambler is activated.

If necessary, you can change your transceiver scrambler code:

1 Press and hold the key programmed as **[Scrambler]** for 1 second.
   - The ◊ indicator and current scrambler code appear.

2 Press **<B** or **C>** to select your desired scrambler code.

3 Press **S** to store the new setting.
   - After changing your scrambler code, be sure to inform all of your group members of the new code so they can also reset their transceivers. The scrambler function will not work with transceivers set up with different scrambler codes.

Note: This function cannot be used in certain countries. Contact your **Kenwood** dealer for further information.

MONITOR/ SQUELCH OFF

You can use the key programmed as **[Monitor]** or **[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.

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

- **Monitor:** Press to deactivate all signaling. Press again to return to normal operation.
- **Monitor Momentary:** Press and hold to deactivate all signaling. Release to return to normal operation.
- **Squelch Off:** Press to hear background noise. Press again to return to normal operation.
- **Squelch Off Momentary:** Press and hold to hear background noise. Release to return to normal operation.

■ Squelch Level

If a key has been programmed as **[Squelch Level]**, you can readjust your transceiver's squelch level.

1 Press the key programmed as **[Squelch Level]**.

- "SQL.LEV." and the current squelch level appear.

2 Press **<B** or **C>** to select the desired squelch level from 0 (open) to 9 (tight).

3 Press **S** to store the new setting.

TRANSCEIVER BACKLIGHT

To turn the transceiver display and front panel key backlight on, press the key programmed as **[Lamp]**.

- The display and keypad remain lit for 5 seconds. Pressing any key other than the **PTT** switch and the Power switch/ Volume control while the backlight is on will reset the timer to 5 seconds.

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

DIRECT ZONE CHANNEL

Press the key programmed as **[Direct Zone Channel]** to immediately select the lowest channel of the lowest zone.

BACKGROUND OPERATIONS

TIME-OUT TIMER (TOT)

The Time-out Timer prevents you from using a channel for an extended duration. If you continuously transmit for a preset time, the transceiver will stop transmitting and an alert tone will sound. Release the **PTT** switch.

BATTERY SAVER

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

Note: While the Battery Saver is operating, the LED may flash green when receiving a QT/DQT signal which does not match the transceiver QT/DQT setting.

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.

SIGNAL STRENGTH INDICATOR

The signal strength indicator displays the strength of received calls, as illustrated below.

Strong	Medium	Weak	Very Weak

BUSY CHANNEL LOCKOUT (BCL)

If BCL is set up by your dealer, you will be unable to transmit if the channel is already in use. Use a different channel or wait until the channel becomes free.

COMPANDER

If programmed by your dealer for a channel, the compander will remove excessive noise from transmitted signals, to provide higher clarity of signals.

PTT ID

PTT ID is the transceiver unique ID code which is sent each time the **PTT** switch is pressed and/or released.

KENWOOD

RADIO FREQUENCY ENERGY SAFETY INFORMATION

This **Kenwood** transceiver has been tested and complies with the standards listed below, in regards to Radio Frequency (RF) energy and electromagnetic energy (EME) generated by the transceiver.

- FCC RF exposure limits for *Occupational Use Only*. RF Exposure limits adopted by the FCC are generally based on recommendations from the National Council on Radiation Protection and Measurements, & the American National Standards Institute.
- FCC OET Bulletin 65 Edition 97-01 Supplement C
- American National Standards Institute (C95.1 – 1992)
- American National Standards Institute (C95.3 – 1992)

WARNING

This **Kenwood** transceiver generates RF EME while transmitting. RF EME (Radio Frequency Electric & Magnetic Energy) has the potential to cause slight thermal, or heating effects to any part of your body less than the recommended distance from this radio transmitter's antenna. RF energy exposure is determined primarily by the distance to and the power of the transmitting device. In general, RF exposure is minimized when the lowest possible power is used or transmission time is kept to the minimum required for consistent communications, and the greatest distance possible from the antenna to the body is maintained. The transceiver has been designed for and is classified for *Occupational Use Only*. Occupational/ controlled exposure limits are applicable to situations in which persons are exposed to RF energy as a consequence of their employment, and such persons have been made aware of the potential for exposure and can exercise control over their exposure. This means you can use the transceiver only if you are aware of the potential hazards of operating a transceiver and are familiar in ways to minimize these hazards. This transceiver is not intended for use by the general public in uncontrolled environments. Uncontrolled environment exposure limits are applicable to situations in which the general public may be exposed to RF energy, or in which the persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

The following list provides you with the information required to ensure that you are aware of RF exposure and of how to operate this transceiver so that the FCC RF exposure limitations are not exceeded.

- While transmitting (holding the **PTT** switch or speaking with **VOX** enabled), always keep the antenna and the radio at least 3 cm (1 3/16 inches) from your body or face, as well as from any bystanders. A LED on the top of the radio shows red when the transmitter is operating in both **PTT** and **VOX** modes.
- Do not transmit for more than 50% of the total transceiver use time; transmitting over 50% of the total use time may exceed the limits in accordance to the FCC RF exposure requirements. Nominal transceiver operation is 5% transmission time, 5% reception time, and 90% stand-by time.
- Use only the specified antenna for this transceiver; this may be either the antenna provided with the transceiver or another antenna authorized by **Kenwood**.

Use only **Kenwood** authorized accessories (antennas, battery packs, belt clips, Speaker/ Mics or headsets etc.): When worn on the body, always place the radio in a **Kenwood** recommended clip or carrying case meant for this product. The use of other than recommended or approved body- worn accessories may result in RF exposure levels which exceed the FCC's occupational/ controlled environment RF exposure limits.

CAUTION

To ensure that your exposure to RF EME is within the FCC limits for occupational use, you must observe and adhere to the above points.

Electromagnetic Interference Compatibility

Electronic devices are susceptible to electromagnetic interference (EMI) if they are not adequately shielded or designed for electromagnetic compatibility. Because this transceiver generates RF energy, it can cause interference to such equipment.

- Turn OFF your transceiver where signs are posted to do so. Hospitals and health care facilities use equipment that is sensitive to electromagnetic radiation.
- Turn OFF your transceiver while on board an aircraft when so instructed. Use of the transceiver must be in accordance with airline regulations and/or crew instructions.