INSTRUCTION MANUAL

KENWOOD

UHF APCO P25 TRANSCEIVER

TK-5310

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.

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.

This device made under license under one or more of the following US Patents: 4,590,473; 4,636,791; 4,716,407; 4,972,460; 5,148,482; 5,185,796; 5,271,017; 5,377,229; 5,502,767.

The IMBE™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights, and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this Technology is explicitly prohibited from attempting to decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form.

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.

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.
- When water gets into the microphone opening or the speaker grill, the voice level may become incoherent or distorted. Lightly shake the transceiver to remove the water from the speaker and/ or microphone before operating the transceiver.

⚠ **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.

CONTENTS

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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	Quantity
Belt clip	J29-0710-XX	1
• Screws for belt clip	N30-3008-XX	2
Univeral connector cap	B09-0682-XX	1
• Dressing screw (preassembled)	N08-0531-XX	1
• Rubber seal (preassembled)	G11-4340-XX	1
Quick reference card	B59-2393-XX	1
Instruction manual	B62- -XX	1
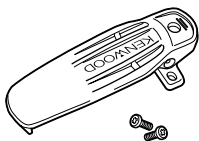
Belt clip + screws

Universal connector cap

PREPARATION

BATTERY PACK PRECAUTIONS

Do not use battery packs or battery chargers not recommended by **KENWOOD**.

> ⚠ 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 being turned OFF), recharging will start again and the battery pack will become overcharged.
> ◆ Do not use the transceiver while charging the battery pack. We recommend you switch the transceiver power OFF while charging is taking place.
> ◆ Do not charge the battery pack when the battery pack or transceiver is wet, to avoid the risk of fire or damage. Wipe the water from the battery pack or transceiver using a dry cloth before charging.
> ◆ Do not short the battery terminals or dispose of the battery by fire.
> ◆ Never attempt to remove the casing from the battery pack.

■ Charging the Battery Pack

For charging procedures, refer to the battery charger Instruction Manual.

Information concerning the (optional) Li-ion battery pack:

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

> ⚠ **DANGER**
>
> • **Do not disassemble or reconstruct 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 use or leave the battery near fires, 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.
>
> • **Avoid immersing the battery in water or getting it wet by other means!**
>
>   If the battery becomes wet, wipe it off with a dry towel before use. 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 fires 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.

- **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 remodelled 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-circuited. 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.

- **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.

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

  If the electrolyte liquid from the battery gets into your eyes, wash your eyes out 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 odor, appears to have different coloring, is deformed, or seems abnormal for any other reason, remove it from the charger or operating equipment and do not use it. The battery may generate heat or smoke, rupture, or burst into flame.

■ Using the Li-ion Battery Pack

- Charge the battery pack before using it.
- To keep the battery discharge at a minimum, remove the battery pack from the equipment when it is not in use. Store the battery pack in a cool and dry location.
- When storing the battery pack for a long period:
  1 Remove the battery pack from the equipment.
  2 Discharge the battery pack, if possible.
  3 Store the battery pack in a cool (below 25°C/ 77°F) and dry location.

■ Characteristics of the Li-ion Battery Pack

- As the battery pack is charged and discharged repeatedly, the battery capacity decreases.
- Even if the battery pack is unused, the battery pack degrades.
- It takes a longer time to charge the battery pack in cooler areas.
- The life of battery pack is shortened when it is charged and discharged in hotter areas. When the battery pack is stored in a hot location, the battery pack degrades quicker. Do not leave the battery pack in vehicles or near heating appliances.
- When the battery pack operating time becomes short, even if it is fully charged, replace the battery pack. Continuing to charge and discharge the battery pack may result in electrolyte leakage.

Installing/ Removing the (Optional) Battery Pack

1 Match the guides of the battery pack with the corresponding grooves on the upper rear of the transceiver, then firmly press the battery pack to lock it in place.
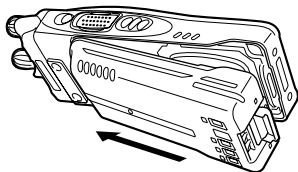
2 Lock the safety catch to prevent accidentally pressing the release latch and removing the battery pack.
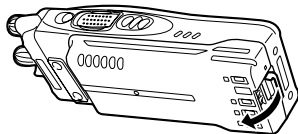
3 To remove the battery pack, lift the safety catch, press the release latch, then pull the battery pack away from the transceiver.
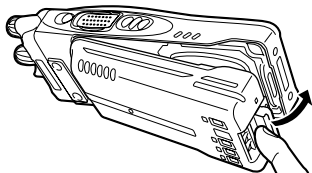
Note:

◆ To lift the battery pack safety catch, use a piece of hardened plastic or metal, such as a screwdriver, that is no more than 6 mm wide and 1 mm thick. It is imperative that you place the implement under only the lip of the safety catch so that you do not damage the release latch.

◆ Before charging a battery pack that is attached to the transceiver, ensure that the safety catch is firmly closed.

◆ While operating the transceiver using a Li-ion or Ni-MH battery pack in areas with an ambient temperature of –10°C/ +14°F and lower, operating time may be shortened.

INSTALLING THE (OPTIONAL) 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.

Optional antenna
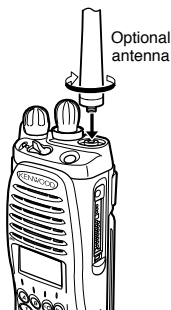
INSTALLING THE BELT CLIP

If necessary, attach the belt clip using the two supplied 3 x 8 mm binding 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.

Belt clip

Binding screws
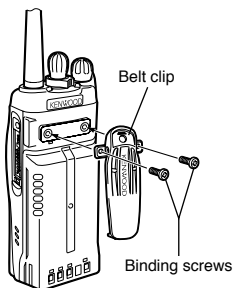
⚠ CAUTION

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 CAP OVER THE UNIVERSAL CONNECTOR

1 If you are not using an optional speaker/ microphone or headset, install the cap over the universal connector.

2 Secure the cap in place using the attached screw.

Universal connector cap
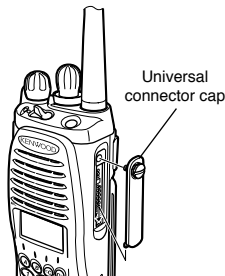
INSTALLING THE (OPTIONAL) SPEAKER/ MICROPHONE OR HEADSET

1 Insert the guide of the speaker/ microphone or headset connector into the groove of the universal connector.

2 Secure the connector in place using the attached screw.
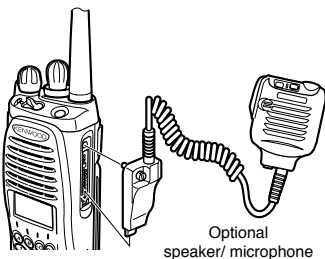
Note: When not using an optional speaker/ microphone or headset, install the cap over the universal connector.

Optional speaker/ microphone

Microphone

Speaker
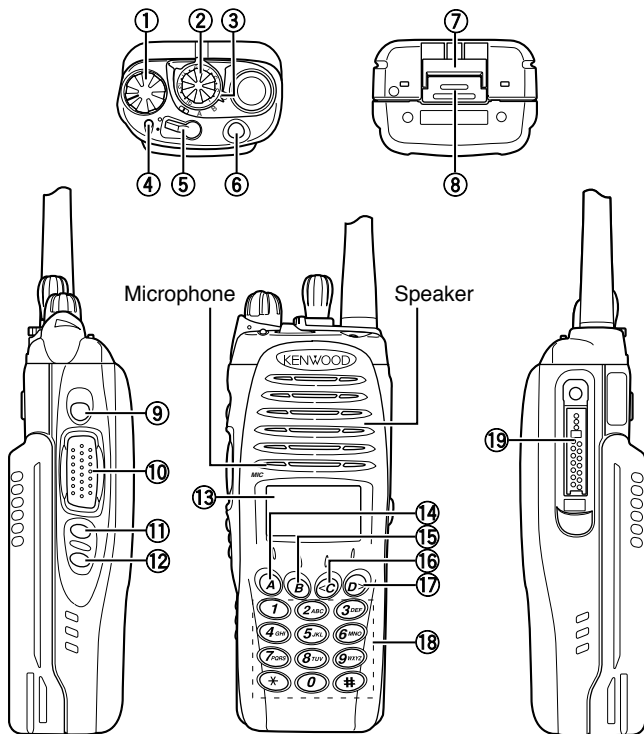
There are 3 models available:

K model: Basic model.

K2 model: Equipped with a display and 4-key keypad (**A**, **B**, **<C**, and **D>**).

K3 model: Equipped with a display and full keypad.

The above illustration displays the K3 model.

① Power switch/ Volume control
Turn clockwise to switch the transceiver ON. Rotate to adjust the volume. Turn counterclockwise fully to switch the transceiver OFF.

② Selector knob
Rotate this control to activate its programmable function {page 15}. The default setting is Channel Select.

③ Concentric switch
Rotate this switch to activate one of its programmable functions {page 15}.

④ Transmit/ Receive/ Battery low indicator
Lights red while transmitting. Lights green while receiving, and orange when receiving an encoded call (i.e. 2-tone, DTMF signaling, etc.). Flashes red when the battery power is low while transmitting. Replace or recharge the battery pack when the battery power is low.

Note: This indicator can be disabled by your dealer.

⑤ Lever switch
Switch the toggle position to activate its programmable function {page 15}. The **O** position turns the function ON. The ● position turns the function OFF.

⑥ Auxiliary (orange) key
Press to activate its programmable function {page 15}.

⑦ Safety catch
Lock this catch to avoid accidentally pressing the release latch and removing the battery pack {page 7}.

⑧ Release latch
Press the release latch to unlock and remove the battery pack {page 7}.

⑨ Side 1 key
Press to activate its programmable function {page 15}.

⑩ PTT (Push-To-Talk) switch
Press and hold this switch, then speak into the microphone to call a station.

⑪ **Side 2 key**
Press to activate its programmable function {page 15}.
Acts as an Up key for certain transceiver settings.

⑫ **Side 3 key**
Press to activate its programmable function {page 15}.
Acts as a Down key for certain transceiver settings.

⑬ **Display (K2 and K3 models only)**
Refer to the display on page 13.

⑭ **A key (K2 and K3 models only)**
Press to activate its programmable function {page 15}.
The programmed name appears on the bottom of the
display.

⑮ **B key (K2 and K3 models only)**
Press to activate its programmable function {page 15}.
The programmed name appears on the bottom of the
display.

⑯ **<C key (K2 and K3 models only)**
Press to activate its programmable function {page 15}.
The programmed name appears on the bottom of the
display. Also acts as a Down key for certain transceiver
settings.

⑰ **D> key (K2 and K3 models only)**
Press to activate its programmable function {page 15}.
The programmed name appears on the bottom of the
display. Also acts as an Up key for certain transceiver
settings.

⑱ **Keypad (K3 models only)**
Press the keys on the keypad to send DTMF tones or the
keypad keys can also be programmed with the functions
listed on page 15 if one of the other programmable
function keys is programmed as Function.

⑲ **Universal connector**
Connect the (optional) speaker/ microphone here.
Otherwise, keep the supplied cap in place.

DISPLAY (K2 AND K3 MODELS ONLY)

```
 ⟳⟱P1L0m☑▮▮▮
10 ⟳⇥╫╫□T◁)◇

Channel Name 1
MON LOW 2IN▼ 2IN▲
```
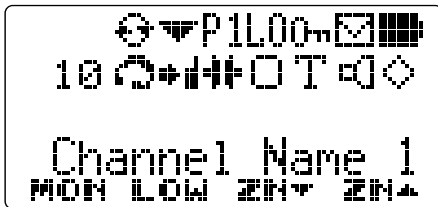
Indicator	Description
⟳	Appears when you are using Scan mode.
⟱	Appears when the current channel is added to the scanning sequence.
P1	Appears when the current channel is programmed as a Priority channel. "P1" represents Priority channel 1. "P2" represents Priority channel 2. "PP" represents Priority channels 1 and 2.
L0	Appears when low transmit power is selected. "HI" appears when using high transmit power.
0ᵐ	Appears when the key lock function is activated.
☑	Appears when there is a message stored in the transceiver memory. Flashes when a new message has arrived.
▮	Displays the current battery power status.
⟳	Appears when the VOX function is activated.
⇥	Appears when the Talk Around function is activated.
╫	Appears when the internal compander function is active.
□	Appears when the Operator Selectable Tone function is activated.

Indicator	Description
T	Appears when the Tactical Group function is activated.
◁]	Appears when the monitor function is activated and when the squelch off function is activated.
◇	Appears when the scrambler/ encryption function is activated.
10	Displays the operating zone number.
Channel Name 1	Displays the operating zone and channel number or channel name. Also displays various text messages depending on the function being used.
MON LOW ZIN▼ ZIN▲	Displays the functions of the **A**, **B**, **<C**, and **D>** keys. Abbreviated function names appear by the full function names in the descriptions starting on page 40.

PROGRAMMABLE FUNCTIONS

Refer to the following tables to determine which functions are available for appropriate channels.

Conventional FM: Channels set up for Conventional FM Operation

Conventional APCO: Channels set up for Conventional APCO Operation

- ✓ : Available
- · : Mixed Mode only
- N/A: Not Available

Programmable Function	Conventional FM	Conventional APCO	Reference Page
Autodial [1]	✓	N/A	31, 40
Battery Status	✓	✓	40
Call Response	N/A	✓	40
Channel Down	✓	✓	40
Channel Recall	✓	✓	40
Channel Select [2]	✓	✓	41
Channel Up	✓	✓	41
Clock [1]	✓	✓	39, 41
Direct Channel 1 ~ 5	✓	✓	41
Display Character [1]	✓	✓	41
Emergency [3]	✓	✓	32, 41
External Speaker	✓	✓	42
Function	✓	✓	42
Home Channel	✓	✓	42
Individual [1]	N/A	✓	21, 42
Key Delete [1]	N/A	✓	34, 42
Key Lock	✓	✓	43

Programmable Function	Conventional FM	Conventional APCO	Reference Page
Light [1]	✓	✓	43
Low Transmit Power	✓	✓	43
Monitor	✓	✓	44
Monitor Momentary	✓	✓	44
None	✓	✓	44
Operator Selectable Tone [1]	✓	•	35, 44
OST Down [1]	✓	•	44
OST Up [1]	✓	•	45
Scan	✓	✓	23, 45
Scan Delete	✓	✓	23, 45
Scan Program [1]	✓	✓	24, 45
Scrambler/ Encryption	✓	✓	33, 45
Scrambler/ Encryption Code [1]	✓	✓	33, 45
Selcall [1, 6]	✓	•	26, 46
Selcall Status [1, 6]	✓	•	26, 46
Speaker Attenuation [4]	✓	✓	46
Squelch Level [1]	✓	•	46
Squelch Off	✓	•	46
Squelch Off Momentary	✓	•	46
Status [1, 6]	✓	•	27, 47
Tactical Group	✓	✓	47
Talk Around	✓	•	47
Talkgroup [1]	N/A	✓	21, 47
Tone	✓	✓	47
VOX	✓	✓	37, 47

Programmable Function	Conventional FM	Conventional APCO	Reference Page
Zone Down	✓	✓	48
Zone Select [5]	✓	✓	48
Zone Up	✓	✓	48

[1] Autodial, Clock, Display Character, Individual, Key Delete, Light, Operator Selectable Tone, OST Down, OST Up, Scan Program, Scrambler/ Encryption Code, Selcall, Selcall Status, Squelch Level, Status, and Talkgroup are available only on K2 and K3 model transceivers.

[2] Channel Select can be programmed only on the Selector knob.

[3] Emergency can be programmed only on the Auxiliary (orange) key and the optional speaker/ microphone PF1 (orange) key.

[4] Speaker Attenuation can be programmed only on the microphone programmable function keys.

[5] Zone Select can be programmed only on the Selector knob, the Concentric switch, and the Lever switch.

[6] Selcall, Selcall Status, and Status cannot be used when the transmit mode is set as APCO.

SWITCHING POWER ON/ OFF

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

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

■ Transceiver Password

K2 and K3 model transceivers may be password protected. If the transciever is protected, "INPUT PASSWORD" will appear on the display when the power is turned ON. To unlock the transceiver, enter the correct password:

```
┌─────────────────────┐
│                     │
│  INPUT PASSWORD     │
│                     │
│ CNF DEL        SET  │
└─────────────────────┘
```

1 Enter a character using the **Side 2** and **Side 3** keys.

• On K3 model transceivers, you can enter the password by pressing the DTMF keys instead.

2 Press the **D>** key (SET) to accept the character.

• This step is unnecessary when using the keypad.

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

• Press the **B** key (DEL) to delete an incorrectly entered character. Press and hold the **B** key to delete all characters.

4 Press the **A** key (CNF) to confirm the entry.

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

• The password can contain a maximum of 6 digits.

Adjusting the Volume

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

Selecting a Zone and Channel

Select the desired zone using the selector knob or the keys programmed as **Zone Up**/ **Zone Down**. Each zone contains a group of channels

Select the desired channel using the selector knob or the keys programmed as **Channel Up**/ **Channel Down**. Each channel is programmed with settings for transmitting and receiving.

• The default setting for the selector knob is **Channel Select**.

K2 and K3 model transceivers may have names programmed for zones and channels. Each name can contain up to 16 character. While selecting a zone, the zone name will appear above the channel name for approximately 2 seconds.

• If programmed by your dealer, your transceiver will announce the zone and channel numbers as you change them.

TRANSMITTING

1 Select the desired zone and channel using the selector knob and the **Zone Up**/ **Zone Down** or **Channel Up**/ **Channel Down** keys.

```
10


Channel   A01
SCN LIT ZN▼ ZN▲
```

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. Release the **PTT** switch to receive.

- The LED indicator lights red while transmitting and green while receiving a signal. This indicator can also be disabled by your dealer.
- For best sound quality at the receiving station, hold the microphone approximately 1.5 inches (3 ~ 4 cm) from your mouth.

■ **Making Group Calls (APCO)**

Channels programmed for APCO operation already have a Group ID assigned. For these channels, you do not need to perform steps 1 to 3, below.

Otherwise, on K2 and K3 model transceivers, if a key has been programmed with **Talkgroup**, you can select a group ID from the list to make a call to those parties.

1 Press the key programmed as **Talkgroup**.

2 Press the **Side 2** and **Side 3** keys or the **<C** and **D>** keys to select a group ID/name from the list that has been pre-entered into your transceiver.

- The target group ID/name appears on the display.

3 Press the **Side 1** key to set the selected group ID.

4 Press and hold the **PTT** switch to make the call. Speak into the transceiver as you would during a normal transmission.

■ **Making Individual Calls (APCO) (K2 and K3 Models Only)**

If a key has been programmed with **Individual**, you can make calls to specified persons.

1 Press the key programmed as **Individual**.

2 Press the **Side 2** and **Side 3** keys to select a unit ID from the list that has been pre-entered into your transceiver.

- Alternatively, on K3 models, you can directly enter a unit ID by using the DTMF keypad.
- The target unit ID/name appears on the display.

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

- Speak into the transceiver as you would during a normal transmission.

Receiving

1 Select the desired zone and channel using the selector knob and the **Zone Up**/ **Zone Down** or **Channel Up**/ **Channel Down** keys. (If the Scan function has been programmed, you can switch it on or off as desired.)

2 When you hear a caller's voice, readjust the volume as necessary.

- If signaling has been programmed on the selected channel, you will hear a call only if the signal tone matches the tone set up on your transceiver.

Note: Signaling allows your transceiver to code your calls. This will prevent you from listening to unwanted calls. It does not make calls private, it only prevents them from being heard by transceivers set with a different signaling code. Refer to "SIGNALING" on page 35 for details.

■ Receiving Group Calls (APCO)

When you receive a call on your group channel and the received group ID matches the ID set up on your transceiver, you can hear the caller's voice. Readjust the volume as necessary.

■ Receiving Individual Calls (APCO)

When you receive an individual call, a ringing tone will sound and on K2 and K3 model transceivers, the display will show the caller's ID. To respond to the call, press and hold the **PTT** switch and speak into the transceiver as you would during a normal transmission.

SCAN

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

To begin scanning, press the key programmed as **Scan**.

- On K2 and K3 model transceivers, the ⊕ icon appears on the display.
- The channels included in the scan list are scanned.
- When a signal is detected on a channel, Scan pauses on that channel. The transceiver will remain on the busy channel until the signal is no longer present. When the signal "drops out", the transceiver will remain on the channel momentarily before Scan resumes. This delay time is programmed by your dealer. If a signal is received during the delay time, the transceiver will remain on the same channel.

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

> **Note:** In order for Scan to function, there must be at least 2 channels added to the scanning sequence. If there are less channels than this, Scan will not operate.

TEMPORARY CHANNEL LOCKOUT

If a key is programmed with the **Scan Delete** function, each channel can be locked out of the scan sequence manually.

During scan, you can temporarily remove specific channels from the scanning sequence by selecting them and pressing the **Scan Delete** key.

- On K2 and K3 model transceivers, the ▼ icon no longer appears on the display for that channel.
- The channel is no longer scanned. However, when scanning is ended and restarted, the channels will reset and the channel will again be in the scanning sequence.

PRIORITY SCAN

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

When using a single Priority channel, the transceiver will automatically change to the Priority channel when a call is received on it, even if a call is being received on a normal channel.

When using dual Priority channels, Priority channel 1 is given precedence over Priority channel 2. So, if a call is received on Priority channel 1 while a call is already on Priority channel 2, the transceiver will automatically change to Priority channel 1.

- On K2 and K3 model transceivers, "P1" appears on the display when the displayed channel is Priority channel 1, "P2" appears when the displayed channel is Priority channel 2, and "PP" appears when the displayed channel is both Priority channel 1 and Priority channel 2.

SCAN REVERT

The Scan Revert channel is the channel selected when you press the **PTT** switch to transmit during scan. Your dealer can program 1 of 6 types of Scan Revert channels on your transceiver:

- **Selected:** The last channel selected is assigned as the new revert channel.
- **Selected + Talkback:** If the channel has been changed, the newly selected channel is assigned as the new revert channel. The transceiver "talks back" on the current channel.
- **Priority 1/ Priority 2:** If your dealer has programmed a Priority channel (either Priority 1 or Priority 2), this channel is the revert zone and channel.
- **Priority 1 + Talkback/ Priority2 + Talkback:** If your dealer has programmed a Priority channel (either Priority 1 or Priority 2), this channel is the revert zone and channel. The transceiver "talks back" on the current receive channel.

SCAN PROGRAMMING (K2 AND K3 MODELS ONLY)

Using the key programmed with Scan Program, you are able to reprogram your scan list.

1 Press the key programmed as Scan Program.
   - The 🔁 icon appears on the display and blinks.
2 Press the **Side 2** and **Side 3** keys to select the zone or channel you will add to or remove from the scan list.
   - The ▼ icon appears on the display for zones/ channels that are added to the scan list.
   - Press the **A** key to toggle between Zone Select and Channel Select.
3 Press the **<C** key to add the selected zone or channel to the scan list or the **B** key to remove the selected zone or channel from the scan list.
   - The ▼ icon appears on the display when a zone/ channel is added to the scan list, and disappears when a zone/ channel is removed from the scan list.

If the Priority channel has been set as Operator Selectable by your dealer, you are able to reprogram the Priority mode as well.

1 Press the key programmed as Scan Program.
   - The 🔁 icon appears on the display and blinks.
2 Press the **Side 2** and **Side 3** keys to select the channel you will set as the Priority channel.
3 Press the **A** key.
4 Press the **D>** key to toggle the selected channel between Priority mode and Normal mode.
   - "P1", "P2", or "PP" appears on the display when Priority mode is selected.
5 Press the **A** key again to set the new channel setting.

FleetSync: ALPHANUMERIC 2-WAY PAGING FUNCTION

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.

Note: This function is available only in Conventional FM Operation.

SELCALL (SELECTIVE CALLING)

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

■ Transmitting (K2 and K3 Models Only)

1. Select your desired zone and channel.
2. Press the key programmed as **Selcall** or **Selcall Status** to enter Selcall mode.
3. Press the **Side 2** and **Side 3** keys to select the ID of the station you want to call.
   - On K3 model transceivers, if Manual Dialing is enabled, you can enter the station ID by using the DTMF keypad.
4. Press the **PTT** switch and begin your conversation.
   - Alternatively, you can press the **<C** 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, on K2 and K3 model transceivers, the calling station's ID will appear when a Selcall is received.

When the call station's ID appears on the display, you can respond to the call by pressing the PTT switch and speaking 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 (Fleet 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 (K2 AND K3 MODELS ONLY)

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 15 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 station ID is fixed and cannot be selected. Skip to step 5 to continue.

3. In Selcall mode, press the **Side 2** and **Side 3** keys to select the ID of the station you want to call.
   - If Manual Dialing is enabled, you can enter the station ID by using the DTMF keypad.

4. Press the **A** key to enter Status Mode.

5. Press the **Side 2** and **Side 3** keys to select the status ID you want to transmit.
   - If Manual Dialing is enabled, you can enter a status ID by using the DTMF keypad.

6. Press the **PTT** switch or the **<C** key to initiate the Status call.

■ 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 Stack mode.
   - The last received message is displayed with the message number.
2. Press the **Side 2** and **Side 3** keys to select the desired message.
3. Press the **Side 1** key to return to normal operation.
   - To delete the selected message, press the **B** or **#** key. To confirm the deletion, press the **B** or **#** key again.
   - To delete all messages, press and hold the **B** or **#** key for 1 second. To confirm the deletion, press the **B** or **#** key again.

SHORT MESSAGES

To send a short message, you must connect the transceiver to a PC. Ask your dealer for details.

- Short messages can contain a maximum of 48 characters.
- On K2 and K3 model transceivers, received short messages are displayed the same as Status messages and are stored in the same stack memory. A combined maximum of 15 Status calls and short messages can be stored in the stack memory.

LONG MESSAGES

To send and receive long messages, you must connect the transceiver to a PC. Ask your dealer for details.

- Long messages can contain a maximum of 4096 characters.

DTMF (DUAL TONE MULTI FREQUENCY) CALLS

Note: DTMF calls can be made only in Conventional FM Operation.

MAKING A DTMF CALL (K3 MODELS ONLY)

■ Manual Dialing

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

2 Enter the desired digits using the DTMF keypad.
   - The corresponding DTMF tones sound each time you press a key.
   - If you release the **PTT** switch, transmit mode will end even if the complete number has not been sent.

■ Store & Send

1 Enter the desired digits using the DTMF keypad.
   - The digits appear on the display as you enter them.
   - You can enter up to 31 digits before transmitting.

2 After entering the complete number, press the **PTT** switch to transmit.

Note: If you switch the power OFF before transmitting the number, the number will be cleared.

■ Keypad Auto PTT

If your dealer has activated the Keypad Auto PTT function, simply press the keys on the keypad to make the call.

   - The DTMF code will be sent automatically when you press a key.

Autodial (K2 and K3 Models Only)

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

1 Press the key programmed as **Autodial**.
   • The first entry in the Autodial list appears on the display.
2 Press the **Side 2** and **Side 3** keys or enter the appropriate DTMF number (01 ~ 32) to select your desired Autodial list number.
   • The stored entry appears on the display.
3 Press the **PTT** switch to make the call.
   • Alternatively, you can press the **<C** key to transmit the selected DTMF number, rather than making a call.

Stun Code

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.

EMERGENCY CALLS

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

Note: Only the Auxiliary (orange) key and the PF1 (orange) key of the optional speaker/ microphone can be programmed with the Emergency function.

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 by your dealer. Transmit periods are also set by your dealer.

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

- If the Emergency mode completes a preset number of cycles, Emergency mode will automatically end and the transceiver will return to the zone and channel that was in use before Emergency mode was entered.

Note:

◆ Your dealer can set the transceiver to emit a tone when Emergency mode starts and stops

◆ Your dealer can set the transceiver to emit tones and received signals as normal or mute the speaker during Emergency operation.

SCRAMBLER (FM)/ ENCRYPTION (APCO)

Note:

◆ The Scrambler function can be used only in Conventional FM Operation. Additionally, the Voice Scrambler board must be installed before this function can be activated.

◆ Ask your dealer for details concerning the Voice Scrambler board and the Encryption DES/AES settings.

SECURE (ENCRYPTED) TRANSMISSION

Press the key programmed as **Scrambler/ Encryption** to switch the transceiver to secure (encrypted) transmission.

- On K2 and K3 model transceivers, the ✧ icon appears when the Scrambler or Encryption function is turned ON.
- Pressing the **PTT** switch after the Scrambler or Encryption function has been turned ON encrypts the transmitted signal.
- Each group member must activate their respective Scrambler/ Encryption functions to descramble the received signals.

SELECTING THE SCRAMBLER CODE

1 Press the key programmed as **Scrambler/ Encryption Code** (K2 and K3 Models Only) or press and hold the key programmed as **Scrambler/ Encryption** for 1 second, to enter Code Selection Mode.

2 Press the **Side 2** and **Side 3** keys or the **D>** and **<C** keys to increase or decrease the Scrambler code.

- There are 16 available Scrambler codes (1 ~ 16).
- Each group member must use the same code in order for the transceivers to descramble the received signals.

3 Press the **Side 1** key to set the new Scrambler code.

SELECTING THE ENCRYPTION KEY

1 Press the key programmed as **Scrambler/ Encryption Code** (K2 and K3 Models Only) or press and hold the key programmed as **Scrambler/ Encryption** for 1 second, to enter Key Selection Mode.

2 Select the new Encryption key using the **Side 2** and **Side 3** keys or the **<C** and **D>** keys.

   • There are 16 available Encryption keys (1 ~ 16).

   • Each group member must select a key that is in each member's key list in order for the transceivers to descramble the received signals.

3 Press the **Side 1** key to set the new Encryption key.

Note: To return the transceiver to the default Encryption key programmed, select "PRESET". However, if you delete the Encryption key (see below), it will not be recovered.

DELETING THE ENCRYPTION KEY (K2 AND K3 MODELS ONLY)

1 Press the key programmed as **Key Delete** to enter Key Delete mode.

2 Select the current Encryption key using the **Side 2** and **Side 3** keys or the **<C** and **D>** keys.

3 Press the **B** key to delete the Encryption key.

4 Press the **Side 1** key to exit Key Delete mode.

Note: To delete all Encryption keys (when more than one key has been set up), select "ALL".

PASSWORD PROTECTION (K2 AND K3 MODELS ONLY)

If the transceiver is password protected, entering an incorrect password successively 15 times will automatically delete all the Encryption keys.

• Turning the transceiver power OFF and the ON again will not reset the number of attempts for entering an incorrect password.

Note: Signaling can be used only in Conventional FM Operation.

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) (K2 AND K3 MODELS ONLY)

If a key has been programmed with **Operator Selectable Tone**, you can reprogram the QT tone or DQT code on each of your channels.

1 Select your desired channel.

2 Press and hold the key programmed as **Operator Selectable Tone** for 1 second.

  • The ☐ icon appears on the display.

3 Press the **Side 2** and **Side 3** keys or the **D>** and **<C** keys to select your desired tone or code from 1 to 40.

4 Press the **Side 1** key to save your new setting.

After selecting and setting up your desired tone or code, press the **Operator Selectable Tone** key to activate the OST function. Press this key again to turn the OST function OFF.

OPTIONAL SIGNALING

Your dealer may also program several types of option 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.

Refert to "DTMF CALL" on page 30.

■ FleetSync Signaling

Refert to "SELCALL (SELECTIVE CALLING)" on page 26.

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**.
   - On K2 and K3 model transceivers, the current VOX Gain level appears on the display.
3 Press the **Side 2** and **Side 3** keys or the **D>** and **<C** keys to increase or decrease the VOX Gain level.
   - The VOX Gain can be adjusted from levels 1 to 10.
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** 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.

- On K2 and K3 model transceivers, the 🔁 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 is present to ensure 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-11BL, KHS-14, KHS-15-BH, or KHS-15-OH accessory.

CLOCK (K2 and K3 Models Only)

If activated by your dealer, your transceiver can track the time with its built-in clock. The time will display momentarily when the transceiver power is turned ON. Additionally, you can view the clock any time by pressing the key programmed as **Clock**.

Note: Removing or leaving the battery pack uncharged for extended periods will cause the clock time to clear.

CLOCK ADJUSTMENT

To set the time:

1 With the transceiver power OFF, press and hold the **Auxiliary (orange)** key and the **PTT** switch while turning the transceiver power ON.

- The current time setting appears.

```
CLOCK SET
YEAR      2004
NXT DEL   ▼   ▲
```

2 Release the **Auxiliary (orange)** key, followed by the **PTT** switch.

3 Press the **Side 2** and **Side 3** keys or the **D>** and **<C** keys to increase or decrease the year setting.

4 Press the **A** key to set the year.

- The transceiver cycles to the month setting.

5 Repeat steps 3 and 4 to set the month, day, hour, and minute.

6 Turn the transceiver power OFF and then back ON to return to normal operation.

Your transceiver operations vary according to the functions that your dealer has programmed onto the transceiver keys. Following is brief overview of the programmable functions. Refer to those functions which have been programmed onto your transceiver.

- **Autodial (AD)**
  Press this key to quickly call a DTMF number that has been pre-stored in your transceiver memory. When viewing the Autodial list, press the **<C** and **D>** keys to select your desired number, then press the **PTT** switch to make the call. Refer to "AUTODIAL" on page 31 for details.

- **Battery Status (BAT)**
  Press this key to view the battery power status. The battery power status is represented by the number of times the LED indicator flashes red. Five flashes represents high power, 4 represents medium power, 3 represents low power, and 2 represents very low power. If the LED flashes red only 1 time, recharge or replace your battery pack immediately.

  When the Low Battery Warning function is active {page 50} and the battery power is low, this key will not operate.

- **Call Response (RES)**
  Press this key to respond to an Individual call.

- **Channel Down (CH▼)**
  Press this key to decrease the channel number. Press and hold this key to cycle down through the channel numbers. When the lowest channel number is reached, the transceiver will "roll-over" to the highest channel number and continue cycling down.

- **Channel Recall (RCL)**
  Press this key during Scan to return to the last called zone and channel.

- **Channel Select**
  Using the selector, turn clockwise to increase the channel number and counterclockwise to decrease the channel number. If a channel has not been programmed, an error tone will sound.

- **Channel Up (CH▲)**
  Press this key to increase the channel number. Press and hold this key to cycle up through the channel numbers. When the highest channel number is reached, the transceiver will "roll-over" to the lowest channel number and continue cycling up.

- **Clock (CLK)**
  Press this key to display the current time.

- **Direct Channel 1 ~ 5 (DC1 ~ DC5)**
  Press one of the five Direct Channel keys to jump to a frequently used zone and channel. The zones and channels are programmed by your dealer.

  If activated by your dealer, you can set your own Direct Channels. First, select your desired zone and channel, then press and hold the **Direct Channel 1 ~ Direct Channel 5** key for 3 seconds to set your selected zone and channel as that Direct Channel.

- **Display Character (CHR)**
  Press this key to switch the display between the zone and channel number and the channel name (if a name has been programmed).

- **Emergency**
  Press and hold this key to enter Emergency mode. This key is set up with a delay time to avoid accidentally entering Emergency mode. The length of time you must hold the key before entering Emergency mode depends on the key setup. Refer to "EMERGENCY CALLS" on page 32 for details.

- **External Speaker (ESP)**
  Press this key to switch the speaker from the transceiver's built-in speaker to an optional external speaker. When pressed, all messages and tones will sound from the optional external speaker that is attached to the transceiver, rather than from the transceiver's built-in speaker.

- **Function (FNC)**
  Press this key to activate the second function of the programmable keys. "FC" appears on the display when this key is pressed. Press a programmable key to activate its secondary function. (DTMF keys can also be programmed with second functions for use with this key.)

- **Home Channel (HOM)**
  Press this key to jump to your home zone and channel. Your home zone and channel is programmed by your dealer.

  If activated by your dealer, you can set your own Home Channel. First, select your desired zone and channel, then press and hold the **Home Channel** key for 3 seconds to set your selected zone and channel as the Home Channel.

- **Individual (IDV)**
  Press this key to activate the Individual Call function. When activated, you must select the ID of the person you want to call before the call can be made. Refer to "MAKING INDIVIDUAL CALLS" on page 21 for details.

- **Key Delete (KDL)**
  Use this key to delete any Encryption keys you have programmed onto your transceiver. Refer to "DELETING THE ENCRYPTION KEY" on page 34 for details.

- **Key Lock (LCK)**
  Press and hold this key for 1 second to lock the transceiver keys. When activated, the front panel keypad and the programmable function keys (other than those listed below) can no longer be used and "LOCKED" appears on the display.

  The following programmable functions can still be operated: Emergency, Light, Monitor, Monitor Momentary, Squelch Off, Squelch Off Momentary, Function, and Key Lock. Likewise, the Selector, Concentric switch, and Toggle switch still function normally.

  Press and hold the **Key Lock** key again to unlock the keys.

- **Light (LIT)**
  Press this key to turn the display and keypad backlight on. The backlight remains on for 5 seconds before automatically turning off again. To manually turn the backlight off before the timer expires, press the **Light** key again.

  If Auto backlight is activated by your dealer, the display and keypad backlight will activate by pressing any key other than the **PTT** switch or the **Volume** control. The backlight will remain on for 5 seconds or until the **Light** key is pressed.

  While the backlight is on, pressing any key other than the **PTT** switch, the **Volume** control, or the **Light** key will reset the 5 second timer. The backlight will remain on for 5 seconds after the new key has been pressed.

- **Low Transmit Power (LOW)**
  Press this key to change the output power of the transceiver to low. When using low power, your signal strength will not be as strong but you will save your battery power. Use this function when you are within close range to other members of your zone. When using low power, the LO icon appears on the display.

Channels programmed with low power cannot be switched to high power, but channels programmed with high power can be switched to low power and then back to high power by pressing this key again. When using high power, the HI icon appears on the display.

- **Monitor (MON)**
  Press this key to turn the transceiver signaling off. This will allow you to listen to all calls that are received on your selected channel. While monitor is activated, the ◘ icon appears on the display. Press the **Monitor** key again to turn the transceiver signaling back on.

- **Monitor Momentary (MON)**
  Press and hold this key to momentarily turn the transceiver signaling off. Releasing this key turns the transceiver signaling back on. While signaling is off, you can listen to all calls that are received on your selected channel. While monitor is activated, the ◘ icon appears on the display.

- **None**
  No function has been programmed on the key.

- **Operator Selectable Tone (OST)**
  Press and hold this key for 1 second to enter Tone Selection mode. When activated, the ▢ icon appears on the display. When in Tone Selection mode, use **Side 2** and **Side 3** keys or the the **D>** and **<C** keys to select your desired tone from 1 to 40. Press the **Side 1** key to complete the selection.

  To toggle the OST function ON and OFF, press the **Operator Selectable Tone** key. Refer to "QUIET TALK (QT)/ DIGITAL QUIET TALK (DQT)" on page 35 for details.

- **OST Down (OS▼)**
  Press this key to decrease the Operator Selectable Tone number of your selected channel. (This key functions similar to the Operator Selectable Tone key.)

- **OST Up (OS▲)**
  Press this key to increase the Operator Selectable Tone number of your selected channel. (This key functions similar to the Operator Selectable Tone key.)

- **Scan (SCN)**
  Press this key to scan your transceiver channels for a signal. While scanning, the 🔁 icon appears on the display. Press this key again to quit scan. Refer to "SCAN" on page 23 for details.

- **Scan Delete (DEL)**
  Press this key during scan operation to temporarily delete a channel from the scanning sequence. The channel settings are returned to normal when scan is ended. Refer to "TEMPORARY CHANNEL LOCKOUT" on page 23 for details.

- **Scan Program (SCP)**
  Press this key to access the scan list. You can set each transceiver channel to be added to or removed from your scan list. Refer to "SCAN PROGRAMMING" on page 24 for details.

- **Scrambler/ Encryption (SE)**
  Press this key to activate or deactivate the Scrambler/ Encryption function. When activated, the transceiver encrypts your voice so that anybody listening to your conversation will not be able to understand what you are saying. Press and hold this key for 1 second, to enter Scrambler code/ Encryption key selection mode. Refer to "SCRAMBLER/ ENCRYPTION" on page 33 for details.

- **Scrambler/ Encryption Code (SEC)**
  Press this key to enter Scrambler code/ Encryption key selection mode. After entering Scrambler code/ Encryption key selection mode, press the **Side 2** and **Side 3** keys or the **<C** and **D>** keys to change your Scrambler code/ Encryption key from 1 to 16, press the **Side 1** key to set the new Scrambler code/ Encryption key. Refer to "SCRAMBLER/ ENCRYPTION" on page 33 for details.

- **Selcall (SEL)**
  Press this key to enter Selcall mode. Press and hold this key to enter Stack mode. Refer to "FleetSync: ALPHANUMERIC 2-WAY PAGING SYSTEM" on page 26 for details.

- **Selcall Status (SES)**
  Press this key to enter Selcall mode. Press and hold this key to enter Stack mode. Refer to "FleetSync: ALPHANUMERIC 2-WAY PAGING SYSTEM" on page 26 for details.

- **Speaker Attenuation**
  Press this key (on the optional speaker/microphone) to attenuate the received voice signals. This reduces the strength of the speaker output to cut back any noise and distortion present in the signal.

- **Squelch Level (SQL)**
  Press this key to adjust the transceiver squelch level. When adjusting the squelch level, use the **Side 2** and **Side 3** keys or the **D>** and **<C** keys to increase and decrease the squelch level.

  The squelch level can be adjusted from 0 (open) to 9 (tight). The default setting is 1.

- **Squelch Off (MON)**
  Press this key to turn the transceiver squelch off. This will allow you to better hear weak signals on your selected channel, as well as background noise. While squelch is off, the ◁ icon appears on the display. Press the **Squelch Off** key again to turn the transceiver squelch back on.

- **Squelch Off Momentary (MON)**
  Press and hold this key to momentarily turn the transceiver squelch off. Releasing this key turns the transceiver squelch back on. While squelch is off, you can better hear weak signals on your selected channel, as well as background noise. While squelch is off, the ◁ icon appears on the display.

- **Status (STS)**
  Press this key to enter Status mode. Press and hold this key to enter Stack mode. Refer to "FleetSync: ALPHANUMERIC 2-WAY PAGING SYSTEM" on page 26 for details.

- **Tactical Group (TAC)**
  Press and hold this key for 1 second to register the selected channel as a Tactical Group channel. Press and hold this key for 3 seconds to register all channels within the current zone as Tactical Group channels.

- **Talk Around (TA)**
  Press this key to toggle Talk Around ON and OFF. Talk Around redirects the transceiver signals directly to other party members rather than relaying the signals through a repeater. When activated, the ✦ icon appears on the display.

  While using Talk Around, you free up the repeater and communicate directly to other transceivers that are within range. If the other party is too far away, you must continue to use the repeater to engage in communication.

- **Talkgroup (TGR)**
  Press this key to select the Group ID list. You can then select the ID of the group you want to call. Refer to "MAKING GROUP CALLS" on page 21 for details.

- **Tone (TON)**
  Press this key to turn the transceiver audible tones off. When active, you will no longer hear tones from the transceiver. Press this key again to turn the audible tones back on.

- **VOX (VOX)**
  Press this key to adjust the external microphone VOX level. When adjusting the VOX level, use the **Side 2** and **Side 3** keys or the **D>** and **<C** keys to increase and decrease the VOX Gain level. The VOX Gain level can be adjusted from 1 to 10.

Press and hold the **VOX** key for 2 seconds to turn VOX Operation mode ON or OFF. Refer to "VOICE OPERATED TRANSMISSION (VOX)" on page 37 for details.

• **Zone Down (ZN▼)**
  Press this key to decrease the zone number. Press and hold this key to cycle down through the zone numbers. When the lowest zone number is reached, the transceiver will "roll-over" to the highest zone number and continue cycling down. After selecting your desired zone, the channel display will reappear.

• **Zone Select**
  Using the selector, turn clockwise to increase the zone number and counterclockwise to decrease the zone number. If a zone has not been programmed, an error tone will sound.

• **Zone Up (ZN▲)**
  Press this key to increase the zone number. Press and hold this key to cycle up through the zone numbers. When the highest zone number is reached, the transceiver will "roll-over" to the lowest zone number and continue cycling up. After selecting your desired zone, the channel display will reappear.

Your dealer can activate a variety of transceiver functions to perform without any additional operation on your part.

TIME-OUT TIMER (TOT)

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

If you continuously transmit for a period of time that exceeds the programmed time, the transceiver will stop transmitting and an alert tone will sound. To stop the tone, release the **PTT** switch. Your dealer can program the TOT time in the range of 15 seconds to 20 minutes.

If programmed by your dealer, a pre-alert tone will sound before the timer expires. Also, if programmed by your dealer, you may have to wait for a short duration before you can continue to transmit. If you press the **PTT** switch before the timer has been reset, an alert tone will sound and the transceiver will not enter transmit mode.

BATTERY SAVER

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.

LOW BATTERY WARNING

Low Battery Warning alerts you when the battery needs to be recharged.

On all transceivers, your dealer can set an alert tone to sound and the LED indicator to blink red when the battery power is low.

On K2 and K3 model transceivers, the battery power icon displays the battery power remaining, as illustrated below.

■	High
▮	Sufficient
▯	Low
▯	Very low

When the battery power is very low, recharge or replace the battery pack.

COMPANDER

The compander is programmed only for specific (analog) channels. If it has been programmed by your dealer, transmitted signals are compressed before being sent and received signals are expanded when they arrive.

- Your dealer must set the compander for both the transmit side and the receive side in order for the compander to operate.
- On K2 and K3 model transceivers, the ╫ icon appears on the display for when the compader activates.

This background feature allows higher clarity of signals, avoiding excessive noise and interference. This feature is not used on digital channels, as they are not susceptible to noise and interference.

PTT ID

PTT ID is the transceiver unique ID code which sent each time the PTT switch is pressed.

Note: PTT ID can be made only in FM Operation.

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.

BUSY CHANNEL LOCKOUT (BCL)

If set up by your dealer, you will be unable to transmit on a conventional channel if it is already in use. Under these circumstances, use a different channel or wait until the channel becomes free.

However, if BCL Override has also been programmed, you can transmit overtop of the current signal:

1 Press and hold the **PTT** switch.
   • If the channel is already in use, a warning tone will sound.
2 Release the **PTT** switch, then press and hold the **PTT** switch again within half a second.
3 Speak into the transceiver as you would during a normal transmission.

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.

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