KENWOOD

NEXEDGE
NX-200/ NX-300

VHF DIGITAL TRANSCEIVER/
UHF DIGITAL TRANSCEIVER
INSTRUCTION MANUAL

ÉMETTEUR-RÉCEPTEUR NUMÉRIQUE VHF/
ÉMETTEUR-RÉCEPTEUR NUMÉRIQUE UHF
MODE D'EMPLOI

TRANSCEPTOR DIGITAL VHF/
TRANSCEPTOR DIGITAL UHF
MANUAL DE INSTRUCCIONES

Kenwood Corporation

**VHF DIGITAL TRANSCEIVER/
UHF DIGITAL TRANSCEIVER**

NX-200/ NX-300

INSTRUCTION MANUAL

Kenwood Corporation

American Communication Systems

Discover the Power of Communications ™

TO ORDER – VISIT http://www.ameradio.com

Thank You

We are grateful you have chosen **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

NXDN™

NXDN™ is a protocol name for the new digital communication system using 4-level FSK technology which has been co-developed by **Kenwood** and Icom.

Models Covered by this Manual

The models listed below are covered by this manual:
NX-200: VHF Digital Transceiver
NX-300: UHF Digital Transceiver

Notices to the User

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

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

The AMBE+2™ 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 extract, remove, decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form. U.S. Patent Nos. #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084 and #5,195,166.

One or more of the following statements may be applicable:

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.
- Always switch the transceiver power off before installing optional accessories.

⚠ WARNING

- Do not remove the black sheet from the reverse side of the transceiver (refer to the illustration below). Removal of this sheet decreases the waterproof efficiency of the transceiver and may cause malfunctions if water seeps into the transceiver.

- The orange packing material on the reverse side of the transceiver is important with respect to the waterproof efficiency of the transceiver. Do not place stickers or other materials on or around the packing material shown in the figure, or on the reverse side of the battery pack. Doing so will impair the waterproof efficiency of the transceiver and may cause it to break down. Additionally, in order to prevent damage to the packing material, do not allow it to come in contact with foreign materials.

⚠ WARNING

Turn the transceiver power off in the following locations:

- 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 wearing pacemakers.

Turn the transceiver power off in the following locations, unless the model is specifically qualified for such use (Intrinsically Safe such as approved by Factory Mutual, CSA):

- In explosive atmospheres (inflammable gas, dust particles, metallic powders, grain powders, etc.).
- While taking on fuel or while parked at gasoline service stations.

⚠ 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.

CONTENTS

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	J29-0730-XX	1
• Screws for belt clip	N30-3008-XX	2
Universal connector cap	B09-0712-XX	1
• Dressing screw (preassembled)	N08-0564-XX	1
• Packing (preassembled)	G53-1769-XX	1
Instruction manual	B62-2014-XX	1

Belt clip + screws

Universal
connector cap

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.

⚠ DANGER

- **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-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.

- **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.

⚠ DANGER

- **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 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
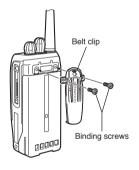
Installing the Belt Clip

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.

⚠ 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.

Belt clip

Binding screws

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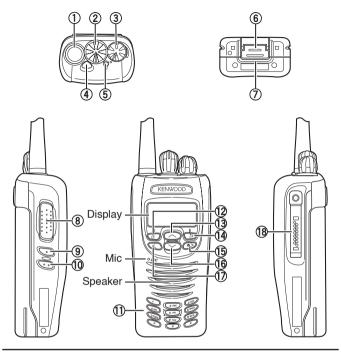
1 Insert the guide of the speaker/ microphone or headset connector into the groove of the universal connector.

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

Display

Mic

Speaker

Note: The transceiver is also available without the DTMF keypad ⑪.

① **Antenna connector**
Connect an optional antenna here {page 8}.

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

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

④ **Auxiliary (orange) key**
Press to activate its programmable function {page 15}.

⑤ **Transmit/ Receive/ Battery low indicator**
Lights red while transmitting, green while receiving (on Conventional channels only), and orange when receiving an optional signaling call (i.e. 2-tone, DTMF signaling, etc.). Blinks 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.

⑥ **Safety catch**
Lock this catch to avoid accidentally pressing the release latch and removing the battery pack {page 7}.

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

⑧ **PTT (Push-To-Talk) switch**
Press and hold this switch, then speak into the microphone to call a station.

⑨ **Side 1 key**
Press to activate its programmable function {page 15}. The default setting is Squelch Off.

⑩ **Side 2 key**
Press to activate its programmable function {page 15}. The default setting is Backlight.

⑪ **Keypad (keypad models only)**
Press the keys on the keypad to send DTMF tones. The keypad keys can also be programmed with secondary functions {page 15} if a programmable function key is programmed as Function.

⑫ ⊚ **key**
Press to activate its programmable function {page 15}. The default setting is Menu mode.

⑬ ⌣ **key**
Press to activate its programmable function {page 15}. The default setting is Zone Up.

⑭ ⌣ **key**
Press to activate its programmable function {page 15}.

⑮ ⌣ **key**
Press to activate its programmable function {page 15}.

⑯ ⌣ **key**
Press to activate its programmable function {page 15}. The default setting is Zone Down.

⑰ ⌣ **key**
Press to activate its programmable function {page 15}.

⑱ **Universal connector**
Connect the (optional) speaker/ microphone here {page 9}. Otherwise, keep the supplied cap in place.

DISPLAY

```
◁)♪▼◘▣PO▼ ▚ 📶 ▭▭
GPS 🔋◇☒□H○ 12:34P
KenwoodDigital
MENU   ZONE▲   MONI
```

Indicator	Description
◁)	Appears when the Monitor or Squelch Off function is activated.
♪	Blinks when signaling of an incoming call matches the Optional Signaling set up on your transceiver.
▼	Appears when the current zone (left icon) or CH/GID (right icon) is added to the scanning sequence.
⟲	Appears when you are using Scan mode. Blinks while paused at a channel.
☒	Appears when there is a message stored in the transceiver memory. Blinks when a new message has arrived.
P:	Appears when the current channel is programmed as a Priority channel. "P" represents Priority channel 1. "P." represents Priority channel 2. "P:" represents priority channels 1 and 2.
O	Appears when the Operator Selectable Tone (OST) function is activated.
↘	Appears when the call is a Telephone ID call. Blinks when Auto Telephone search is activated. (The location of this icon is the same as the OST icon.)

Indicator	Description
Tull	The number of bars indicates the strength of incoming signals. The antenna plus 3 bars represents a strong signal while only the antenna represents a weak signal. No antenna means no signal is present. On NXDN Trunking channels, the antenna indicator flashes when you are out of range.
▭▭▭▸	The number of bars indicates the current battery power status. 3 bars represents high power while no bars means you need to recharge your battery.
▯	Appears when the Talk Around function is activated.
◇	Appears when the Scrambler/ Encryption function is activated.
⬚	Appears when the Auto Recording function on the VGS-1 option is activated.
⊞	Appears when the Auto Reply Message is on. (The location of this icon is the same as the Auto Recording icon.)
⊡	Appears when the auxiliary function is activated.
H	Appears when using high transmit power. "L" appears when using low transmit power.
⌒	Appears when the VOX function is activated.
⫶⫶⫶	Appears when the vibrator function is activated. Blinks when the vibrator is inhibited. (The location of this icon is the same as the VOX icon.)
12:34P	Displays the current time.
MENU ZONE▲ MONI	Displays the key functions for the ⬤, ⬤, and ⬤ keys.

PROGRAMMABLE FUNCTIONS

Following is a list of available programmable functions. Please contact your dealer for further details on those functions which have been programmed on your transceiver.

Conv: Channels set up for Conventional Operation

Trunk: Channels set up for Trunking Operation

✓: Available

N/A: Not Available

Programmable Function	Analog		NXDN (Digital)	
	Conv	LTR Trunk	Conv	Trunk
2-tone	✓	N/A	N/A	N/A
Auto Reply Message [1]	✓	✓	✓	✓
Auto Telephone	N/A	✓	N/A	N/A
Autodial	✓	✓	N/A	N/A
Autodial Programming	✓	✓	N/A	N/A
AUX	✓	✓	✓	✓
Backlight	✓	✓	✓	✓
Broadcast	N/A	N/A	N/A	✓
Call 1 ~ 6	✓	✓	✓	✓
CH/GID Down	✓	✓	✓	✓
Channel Entry	✓	✓	✓	✓
CH/GID Select [2]	✓	✓	✓	✓
CH/GID Up	✓	✓	✓	✓
CH/GID Recall	✓	✓	✓	✓
Clock	✓	✓	✓	✓
Clock Adjustment	✓	✓	✓	✓
CW Message	N/A	N/A	✓	N/A
Direct CH/GID 1 ~ 5	✓	✓	✓	✓
Direct CH/GID Select 1 ~ 5	✓	✓	✓	✓
Display Format	✓	✓	✓	✓
Emergency [3]	✓	✓	✓	✓

Programmable Function	Analog		NXDN (Digital)	
	Conv	LTR Trunk	Conv	Trunk
Fixed Volume	✓	✓	✓	✓
Forced Search	N/A	N/A	N/A	✓
Function	✓	✓	✓	✓
GPS Position Display	✓	✓	✓	✓
Group (NXDN)	N/A	N/A	✓	N/A
Group + Status (NXDN)	N/A	N/A	✓	✓
Home CH/GID	✓	✓	✓	✓
Home CH/GID Select	✓	✓	✓	✓
Individual (NXDN)	N/A	N/A	✓	✓
Individual + Status (NXDN)	N/A	N/A	✓	✓
Key Lock	✓	✓	✓	✓
Low Transmit Power	✓	✓	✓	✓
Maintenance	✓	✓	✓	✓
Menu	✓	✓	✓	✓
Monitor	✓	✓	✓	N/A
Monitor Momentary	✓	✓	✓	N/A
OST	✓	N/A	N/A	N/A
Playback [1]	✓	✓	✓	✓
Priority-channel Select	✓	N/A	✓	N/A
Scan	✓	✓	✓	✓
Scan Delete/Add	✓	✓	✓	✓
Scrambler/Encryption	✓	✓	✓	✓
Scrambler/Encryption Code	✓	✓	✓	✓
Selcall (FleetSync)	✓	✓	N/A	N/A
Selcall + Status(FleetSync)	✓	✓	N/A	N/A
Send the GPS data	✓	✓	N/A	N/A
Site Lock	N/A	N/A	N/A	✓
Speaker Attenuation [4]	✓	✓	✓	✓
Squelch Level	✓	N/A	N/A	N/A

Programmable Function	Analog		NXDN (Digital)	
	Conv	LTR Trunk	Conv	Trunk
Squelch Off	✓	N/A	N/A	N/A
Squelch Off Momentary	✓	N/A	N/A	N/A
Stack	✓	✓	✓	✓
Status (FleetSync/NXDN)	✓	✓	✓	✓
Talk Around	✓	✓	✓	N/A
Telephone Disconnect	N/A	✓	N/A	N/A
Transceiver Password	✓	✓	✓	✓
Vibrator	✓	✓	✓	✓
Voice Memo [1]	✓	✓	✓	✓
VOX	✓	N/A	✓	N/A
Zone Delete/Add	✓	✓	✓	N/A
Zone Down	✓	✓	✓	✓
Zone Select [2]	✓	✓	✓	✓
Zone Up	✓	✓	✓	✓

[1] Auto Reply Message, Playback, and Voice Memo are available only if the VGS-1 optional board has been installed.

[2] CH/GID Select and Zone 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.

BASIC OPERATIONS

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

If the transceiver is password protected, "PASSWORD" will appear on the display when the power is turned ON. To unlock the transceiver, enter the correct password:

1 Select a character using the ⌃ and ⌄ keys.
   - On keypad models, you can enter the password by direclty pressing the DTMF keys instead.

2 Press the � key to enter the selected character.
   - This step is unnecessary when using the keypad.

3 Repeat steps 1 and 2 to enter the entire password.
   - Press the ⌓ key or **#** key to delete an incorrectly entered character. Press and hold the ⌓ key or **#** key to delete all characters.

4 Press the � key or **✳** key 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/Group ID

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/group ID using the selector knob or the keys programmed as **CH/GID Up** / **CH/GID Down**. Each channel/group ID is programmed with settings for transmitting and receiving.

• The default setting for the selector knob is **CH/GID Select**.

Names can be programmed for zones and channels/group IDs. Each name can contain up to 14 characters.

• You can toggle the display between the zone and channel/group ID names and number by pressing the key programmed as Display Format, or by accessing the Display Format function through the Menu {page 23}.

TRANSMITTING

For Trunking channels, refer to "Making Group Calls (Digital)" and "Making Individual Calls (Digital)", below.

1 Select the desired zone and channel using the selector knob and the **Zone Up**/ **Zone Down** or **CH/GID Up**/ **CH/GID Down** 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. 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, hold the transceiver approximately 1.5 inches (3 ~ 4 cm) from your mouth.

■ Making Group Calls (Digital)

If a key has been programmed with **Group** or **Group + Status**, you can select a group ID from the list to make a call to those parties. To select a group ID:

1 Press the key programmed as **Group** or **Group + Status**.

2 Press the ⌒/⌄ 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.
- On keypad models, you can enter a group ID by pressing the DTMF keypad.

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

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

■ **Making Individual Calls (Digital)**

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

1 Press the key programmed as **Individual** or **Individual + Status**.

2 Press the $\bigcirc$/$\bigcirc$ keys to select a unit ID from the list that has been pre-entered into your transceiver.

· The target unit ID/name appears on the display.

· On keypad models, you can enter a unit ID by pressing the DTMF keypad.

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 **CH/GID Up/ CH GIH/ 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 signaling 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 39 for details.

■ Receiving Group Calls (Digital)

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

When you receive a group call on a Trunking channel, the transceiver automatically switches to the communications channel to receive the call.

• Readjust the volume as necessary.

■ Receiving Individual Calls (Digital)

When you receive an individual call on a Conventional channel, a ringing tone will sound and 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.

When you receive an individual call on a Trunking channel, a ringing tone will sound and the the caller's ID will appear on the display. After receiving the call, you can respond to the call by pressing and holding the **PTT** switch and speaking into the transceiver as you would during a normal transmission.

MENU MODE

Many functions on this transceiver are selected or configured through the Menu instead of physical controls. Once you become familiar with the Menu system, you will appreciate the versatility it offers.

Menu Access

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

2 Press the ⊙/⊘ keys to select your desired Menu item.
   • On keypad models, you can directly enter a Menu number to skip to that Menu.

3 Press the ⊙ key to set up the selected Menu item.

4 Press the ⊙/⊘ keys to select your desired setting.
   • For settings with more than 1 level, repeat steps 3 and 4.

5 Press the ⊙ key to set the selected setting and exit Menu mode.
   • Press the ⊃ key at any time to return to the previous display.
   • Press the ⊘ key at any time to exit Menu mode.

Menu Configuration

Some transceiver keys may already be programmed with functions listed in the Menu. Those functions can be accessed directly by pressing the key, or by accessing the Menu. All other functions can still be accessed using the transceiver Menu. The following table lists all the available Menu items.

No.	Menu	Description
01	2-TONE	2-tone Mode
02	AUTO REPLY MSG	Auto Reply Message ON/OFF
03	AUTO TELEPHONE	Auto Telephone
04	AUTO DIAL	Autodial Mode
05	AUTO DIAL PROG	Autodial Programming Mode
06	AUX	AUX ON/OFF
07	BROADCAST	Broadcast ON/OFF
08	CLOCK	Clock ON/OFF
09	CLOCK ADJUST	Clock Adjustment mode
10	DIRECT CH1 SEL	Direct CH/GID 1 ~ 5 Select
11	DISP FORMAT	Display Format ON/OFF
12	FIXED VOLUME	Fixed Volume
13	FORCED SEARCH	Forced Search
14	GPS POS DISP	GPS Position Display mode
15	GROUP	Group mode
16	GROUP+STATUS	Group + Status mode
17	HOME CH SEL	Home CH/GID Select
18	INDIVIDUAL	Individual mode
19	INDIV+STATUS	Individual + Status mode
20	LOW TX POWER	Low Transmission Power ON/OFF

No.	Menu	Description
21	MONITOR	Monitor ON/OFF
22	OST	OST ON/OFF
23	OST LIST	OST mode
24	PLAYBACK	Playback mode
25	PRI CH SEL	Priority Channel Select mode
26	SCAN	Scan ON/OFF
27	SCAN DEL/ADD	Scan Delete/Add
28	SCRAM/ENCRYP	Scambler/Encryption ON/OFF
29	SCRAM CODE	Scrambler Code mode
30	SELCALL	Selcall mode
31	SELCALL+STATUS	Selcall + Status mode
32	SEND GPS DATA	Transmit your GPS data
33	SITE LOCK	Site Lock ON/OFF
34	SITE No.	Display Site Number
35	SQUELCH LEVEL	Squelch Level mode
36	SQUELCH OFF	Squelch Off ON/OFF
37	STACK	Stack mode
38	STATUS	Status mode
39	TALK AROUND	Talk Around ON/OFF
40	PASSWORD	Transceiver Password mode
41	VIBRATOR	Vibrator ON/OFF
42	VOICE MEMO	Voice Memo mode
43	VOX LEVEL	VOX Level mode
44	VOX	VOX ON/OFF
45	ZONE DEL/ADD	Zone Delete/Add

CHARACTER ENTRY

There are 2 methods available for entering characters:
1) pressing the ⌒/⌒ keys and 2) using the DTMF keypad.

When pressing the ⌒/⌒ keys, the displayed character entry
cycles through A ~ Z, 0 ~ 9 and a space (default settings).

You can also assign a character to an optional key and later
press that key to recall the assigned character: A ~ Z, a ~ z, 0
~ 9, or a space and characters.

When using the DTMF keypad, you can enter characters as
shown in the table below:

DTMF Key	Default Character Cycle
1	1
2	A > B > C > 2
3	D > E > F > 3
4	G > H > I > 4
5	J > K > L > 5
6	M > N > O > 6
7	P > Q > R > S > 7
8	T > U > V > 8
9	W > X > Y > Z > 9
0	[space] > 0

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**.

- 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 operate, 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.

- The ▼ icon (right side) 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.

- " **P** " appears on the display when the channel is Priority channel 1, " **P.** " appears when the channel is Priority channel 2, and " **P:** " appears when the channel is both Priority channel 1 and 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 one of the following Scan Revert channels:

- **Last Called + Selected:** The last channel on which you received a call is assigned as the new revert channel. If the channel has been changed, the newly selected channel is assigned as the new revert channel.
- **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 DELETE/ADD

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

1 Select your desired zone and/or channel/group ID.

2 Press the key programmed as **Zone Delete/Add** (to add/remove zones) or **Scan Delete/Add** (to add/remove channels/group IDs)

- You can also press and hold the key programmed as **Scan Delete/Add** to add/ remove zones.

PRIORITY-CHANNEL SELECT

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

1 Select your desired zone and channel.

2 Press the key programmed as **Priority-chanel Select**.

- A list of channel types appears on the display.

3 Press the ⌣/⌣ keys to select the channel type for your current channel.

- You can set the channel as "NORMAL", "PRIORITY 1", "PRIORITY 2", or "PRIORITY 1&2".

4 Press the ⌣ key to save the setting and exit Priority-channel Select Mode.

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.

Your dealer can set up either FleetSync or FleetSync II on your transceiver. Transceivers set up with FleetSync can communicate with other transceivers that have been set up with FleetSync. Likewise, transceivers set up with FleetSync II can communicate with other transceivers set up with FleetSync II. However, transceivers set up with FleetSync cannot communicate with transceivers that have been set up with FleetSync II and viceversa.

Note: This function is available only in analog operation.

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.
3 Press the ⬠/⬡ keys to select the ID of the station you want to call.
   • On keypad models, 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.

■ Receiving

An alert tone will sound and the transceiver will automatically enter Selcall Mode.

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

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 target Fleet/ ID is fixed and cannot be skipped. Skip to step 5 to continue.

3 In Selcall mode, press the $\bigcirc$/$\bigcirc$ keys to select the ID of the station you want to call.

- If Manual Dialing is enabled, you can enter a status ID by using the DTMF keypad, or by using the $\bigcirc$/$\bigcirc$ keys. When using the $\bigcirc$/$\bigcirc$ keys, cycle through the digits to select a digit, then press the $\bigcirc$ key to set the digit and move the cursor to the right. Repeat this process until the entire ID is entered.

4 Press the $\bigcirc$ key to enter Status mode.

5 Press the $\bigcirc$/$\bigcirc$ 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, or by using the $\bigcirc$/$\bigcirc$ keys. When using the $\bigcirc$/$\bigcirc$ keys, cycle through the digits to select a digit, then press the $\bigcirc$ key to set the digit and move the cursor to the right. Repeat this process until the entire ID is entered.

6 Press the **PTT** switch or the **Side 2** key to initiate the Status call.

- "<<COMPLETE>>" is displayed when the call has been successfully transmitted.

■ **Receiving**

The ⊠ icon will flash and a calling ID or text message will appear when a Status call is received. Also, if the Vibrator function has been activated {page 40}, the transceiver will vibrate when a Status call is received.

Press any key to return to normal operation.

■ **Reviewing Messages in the Stack Memory**

1 Press the key programmed as **Stack**, or press and hold the key programmed as **Selcall**, **Status**, or **Selcall** + **Status** to enter Stack mode.

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

2 Press the $\bigcirc$/$\bigcirc$ keys to select the desired message.

- Message types are identified as follows:
  - I: Caller ID
  - S: Status Message
  - M: Short Message
- Press and hold the $\textcircled{\tiny\textregistered}$ key for 1 second to cycle the display information as follows:
  ID Name > Status/Short Message > CH/GID > Time Stamp

3 Press the $\textcircled{\tiny\textregistered}$ key to return to normal operation.

- To delete the selected message, press the $\textcircled{\tiny\textregistered}$ key or **#** key. To confirm the deletion, press the $\textcircled{\tiny\textregistered}$ key or ✳ key.
- To delete all messages, press and hold the $\textcircled{\tiny\textregistered}$ key for 1 second. To confirm the deletion, press the $\textcircled{\tiny\textregistered}$ key or ✳ key.

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.
- 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.

GPS REPORT

To send your location data, you must first connect a GPS unit to the transceiver. GPS data can be manually transmitted by pressing the key programmed as **Send the GPS data**, or by accessing the Send the GPS data function through the Menu {page 23}. If set up by your dealer, GPS data may be automatically transmitted at a preset time interval.

DTMF (DUAL TONE MULTI FREQUENCY) CALLS

Note: DTMF calls can be made only in analog operation.

MAKING A DTMF CALL

■ Manual Dialing (Keypad Models Only)

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.

■ Keypad Auto PTT (Keypad Models Only)

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.

■ Store & Send

1. Press the key programmed as **Autodial**.
2. Enter the desired digits using the DTMF keypad.
   - The digits appear on the display as you enter them.
   - Alternatively, you can enter digits by using the $\bigcirc$/$\bigcirc$ keys {page 26}.
   - You can enter up to 30 digits before transmitting.
3. 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.

Autodial

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

1 Press the key programmed as **Autodial**, or access the Autodial function through the Menu {page 23}.

  • The first entry in the Autodial list appears on the display.

2 Press the ⊘/⊘ 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.

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.

MAKING A TELEPHONE CALL

■ Manual Dialing

1. Select your desired zone and telephone group ID.
2. Press the **PTT** switch to start the call.
3. Enter your desired number using the DTMF keys.

■ Selecting a Number from the List

1. Select your desired zone and telephone group ID.
2. Press the key programmed as **Autodial**.
   - The last called unit appears on the display.
3. Press the ⌃/⌄ keys to select your desired list number.
4. Press the **PTT** switch to make the call.

RECEIVING A TELEPHONE CALL

When a call is received, press and hold the **PTT** switch to speak, and release it to receive.

- Only one person can speak at a time.

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 optional speaker/microphone PF1 (orange) key 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 it takes to switch to Emergency mode 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 transmitting in Emergency mode.
◆ Your dealer can set the transceiver to emit tones and received signals as normal or mute the speaker during Emergency operation.

Note:

◆ Ask your dealer for details concerning the Voice Scrambler board.

SECURE (ENCRYPTED) TRANSMISSION

Press the key programmed as **Scrambler/ Encryption**, or access the Scrambler function through the Menu {page 23}, to switch the transceiver to secure (encrypted) transmission.

- The ✪ icon appears when the Scrambler function is turned ON.
- Pressing the **PTT** switch after the Scrambler function has been turned ON encrypts the transmitted signal.

Quiet Talk (QT)/ Digital Quiet Talk (DQT)

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

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

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

■ Operator Selectable Tone (OST)

If a key has been programmed with **OST**, you can reprogram the QT/DQT settings on each of your channels.

1 Select your desired channel.

2 Press and hold the key programmed as **OST** for 1 second.

   • The ○ icon appears on the display.

3 Press the ⬜/⬜ keys to select your desired tone or code. (Your dealer can set up to 40 tones/codes.)

4 Press the ⬜ key to save your new setting.

After selecting and setting up your desired tone or code, the OST function is activated. When you have finished operating using OST, press the **OST** key to turn the OST function OFF.

Radio Access Number (RAN)

RAN is a new signaling system designed only for digital radio communications. The operation is the same as the analog QT/ DQT signaling.

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

If a call containing a different RAN 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.

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. Refer to "DTMF (DUAL TONE MULTI FREQUENCY) CALLS" on page 34.

FleetSync Signaling: Refer to "SELCALL (SELECTIVE CALLING)" on page 30.

NXDN ID Signaling: NXDN ID is an optional signaling system available only for digital communications.

Vibrator

When an optional external vibrator is installed, the vibrator function will alert you when an optional signaling call is received.

Press the key programmed as **Vibrator**, or access the Vibrator function through the Menu {page 23}, to turn the Vibrator function ON and OFF.

• When activated, the ⠿ icon appears on the display.

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

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

VOX GAIN LEVEL

1 Connect the headset to the transceiver.

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

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

- The current VOX Gain level appears on the display.

3 Press the ⊘/⊘ 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 ⊙ key to save the setting.

VOX Operation

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

2 Press and hold the key programmed as **VOX** for 2 seconds.
- The 🔁 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.
- ◆ To operate the transceiver using the VOX function, you must use an optional KHS-11, KHS-14, KHS-15-BH, or KHS-15-OH accessory.

CLOCK

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 Press the key programmed as **Clock Adjustment**.

- The current time setting appears.

2 Press the ⌢/⌣ keys to increase or decrease the year setting.

3 Press the ⌀ key to set the year and cycle to the month setting.

4 Repeat steps 2 and 3 to set the day, hour, and minute.

5 Press the ⌀ key to exit Clock Adjustment mode.

- You can press ⌀ at any time to exit Clock Adjustment mode.

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 can be activated only on Conventional channels. When activated, this 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.

Key Lock

Press the key programmed as **Key Lock** to lock and unlock the transceiver keys. The following keys still function when Key Lock is activated:

Emergency, Backlight, Monitor, Monitor Momentary, Squelch Off, Squelch Off Momentary, Function, Key Lock, PTT

Low Battery Warning

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

Your dealer can set an alert tone to sound and the LED indicator to blink red when the battery power is low. 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.

Signal Strength Indicator

The signal strength indicator displays the strength of received calls.

Strong signal

Sufficient signal

Weak signal

Very weak signal

No icon appears when no signal is available

Flashes when out of range (NXDN Trunking only)

COMPANDER

The compander can be programmed only for specific
FM 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.

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

BUSY CHANNEL LOCKOUT (BCL)

On Conventional channels, if BCL is set up by your dealer, you
will be unable to transmit on the 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 over 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
call.

CONTROL CHANNEL HUNT

On digital Trunking channels, the transceiver must search for
a control channel. While searching for a control channel, no
signals can be received. The search begins automatically
when you change to a digital Trunking channel.

- While hunting for a control channel, the antenna icon will flash.
  When an available system has been found, the antenna icon
  remains on the display without flashing.

PTT ID

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

Note: PTT ID can be made only in analog 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.

When using the optional VGS-1 voice guide & storage unit, you gain access to the voice recorder and voice announcement functions. Ask your dealer for details.

VOICE RECORDER

The voice recorder provides you with an auto recorder to record your conversations and a voice memo function to create voice memos.

■ Auto Recording

If activated, the auto recording function will continuously record all transmitted and received signals. The recording storage area retains 30 seconds of recording, so all transmitted and received signals are simultaneously recorded and erased, leaving only the last 30 seconds of recording in memory.

- The ⊞ icon appears on the display when this function is activated.

■ Voice Memos

To record a voice memo, for later playback:

1 Press the key programmed as **Voice Memo**, press and hold the key programmed as **Playback** for 1 second, or access the Voice Memo function through the Menu {page 23}.

• The duration of recording memory will appear on the display and begin counting down.

2 Speak into the microphone to record your voice memo.

3 Press the ⊙ key to end the recording at any time and store it into the transceiver memory.

- If the memory becomes full, recording will stop automatically and store the voice memo to memory.

■ Auto Reply Message

You can set the transceiver to automatically respond to Individual Calls (while using FleetSync/NXDN):

1 Press the key programmed as **Auto Reply Message** to enter Auto Reply Message mode.

  • The ⊞ icon appears on the display.

2 When you receive an Individual Call, Auto Reply will begin after waiting for 3 seconds, the transceiver will send an automatic response to the caller, and "GREETING" appears on the display.

  • If you are available to receive the call, press any key to cancel the auto response.

  • If there is a channel available on your transceiver for recording, "I am not available. Leave your Message." will be sent to the caller. The caller can then leave a recorded message on your transceiver which you can later recall and listen to. When a message is stored on your transceiver, "Msg Rcvd" appears on the display.

  • If there is no channel available on your transceiver for recording, "I am not available" will be sent to the caller and " MEMORY FULL" appears on the display.

■ Playback

To play back a recorded conversation, memo, or message:

1 Press the key programmed as **Playback** or access the Playback function through the Menu {page 23}.

  • If the last action on your transceiver was to auto record your conversation, "STORE?" will appear on the display, otherwise a recording channel with the time of the recording will appear.

2 Press the ⌒/⌄ keys to select the channel you want to play back.

  • "AR" represents auto recorded conversations.

  • "RM" represents auto reply messages.

  • "VM" represents voice memos.

3 The transceiver will announce the time and channel, then the recording will automatically play back.

- When the entire recording has been played, "END OF MESSAGE" is displayed. You can also end the recording at any time by pressing the ⊚ key.
- To delete the selected recording, press the ⊙ key. To clear all the recorded data, press and hold the ⊙ key.

VOICE GUIDE

If set up by your dealer, when changing the zone and/or channel, an audio voice will announce the new zone and channel number/group ID. Additionally, when changing a function setting, an audio voice will announce the new setting. (Voice announcements vary by dealer setting.)