KENWOOD

NX-3000 series

USER GUIDE

GUIDE DE L'UTILISATEUR

GUIA DEL USUARIO

JVCKENWOOD Corporation

B5A-2071-00 (K)

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.

VHF DIGITAL TRANSCEIVER

NX-3200/ NX-3220

UHF DIGITAL TRANSCEIVER

NX-3300/ NX-3320

USER GUIDE

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. #8,315,860, #8,595,002, #6,199,037, #6,912,495, #8,200,497, #7,970,606, and #8,359,197.

The Bluetooth® word mark and logo are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by JVC KENWOOD Corporation is under license. Other trademarks and trade names are those of their respective owners.

Firmware Copyrights

The title to and ownership of copyrights for firmware embedded in KENWOOD product memories are reserved for JVC KENWOOD Corporation.

This User Guide covers only the basic operations of your radio. Ask your dealer for information on anycustomized features they may have added to your radio. For using details User Manual, refer to the following URL.

http://manual.kenwood.com/en_contents/search/keyword

THANK YOU

We are grateful you have chosen **KENWOOD** for your Digital Transceiver applications.

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NOTICES TO THE USER

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

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

One or more of the following statements may be applicable:

FCC WARNING

This equipment generates or uses radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved by the party responsible/ JVC KENWOOD. 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.

ATTENTION:

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

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

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

ATTENTION:

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

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

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

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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.
- 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.
- The charger is the device that disconnects the unit from the AC mains line. The AC plug should be readily accessible.
- To dispose of batteries, be sure to comply with the laws and regulations in your country or region.

WARNING

Turn the transceiver power off before entering the following locations:

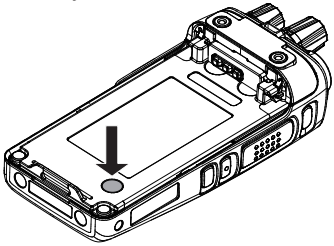
- Near explosives or blasting sites.
- In aircrafts. (Any use of the transceiver must follow the instructions and regulations provided by the airline crew.)
- Where restrictions or warnings are posted regarding the use of radio devices, including but not limited to medical facilities.
- Near persons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

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

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

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.



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.
- Danger of explosion if the battery is incorrectly replaced; replace only with the same type.
- When attaching a commercial strap to the transceiver, ensure that the strap is durable. In addition, do not swing the transceiver around by the strap; you may inadvertently strike and injure another person with the transceiver.
- If a commercially available neck strap is used, take care not to let the strap get caught on nearby machine.
- When operating the transceiver in areas where the air is dry, it is easy to build up an electric charge (static electricity). When using an earphone accessory in such conditions, it is possible for the transceiver to send an electric shock through the earphone and to your ear. We recommend you use only a speaker/microphone in these conditions, to avoid electric shocks.
- Do not expose the transceiver to long periods of direct sunlight, nor place it near heating appliances.

Information concerning the battery pack:

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

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 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 color changes, 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.

NOTIFICATION OF WATER-RESISTANT MODEL

Water Resistance and Maintenance

Water-Resistant Model transceiver conforms to the following standards.

IP67: The IP standard is the protection level specified by the international standard IEC 60529. The first numeral indicates the "dust-resistant level" and the second numeral indicates the "water-resistant" level.

Note:

- Initial water-resistant tests and procedures are performed products upon being ordered from **KENWOOD**.

PRECAUTIONS

- The applicable standards listed above do not assure that the transceiver can be used in water. The transceiver may be damaged in a situation in which the maximum depth is over 1 meter or the maximum submersion time exceeds 30 minutes.
- Observe the following precautions to maintain the transceiver's water-resistant performance:
  a) Do not drop or apply strong physical shocks to the transceiver.
  b) Do not disassemble or attempt to modify the transceiver. (If it is disassembled or modified, its performance is not guaranteed.)
  c) Do not soak the transceiver in water that contains a solvent or surfactant, such as detergent or alcohol.
- If it is soaked in muddy water or salt water (including sea water), it may become corroded. Immediately flush with fresh water and then wipe dry with a soft cloth.
- If water is splashed onto the microphone, the battery, or the antenna terminal, clean and dry them with a soft cloth before reconnecting to the transceiver.
- When water gets into the microphone opening or the speaker grill, the voice level may become low or distorted. Lightly shake the transceiver to remove the water from the speaker and/or microphone before operating the transceiver.
- Use of any option on the transceiver not specified by **KENWOOD**, may reduce or void the water resistant and dust resistant performance.

TERMINAL DESCRIPTIONS

Universal connector (NX-3200/ NX-3300)

It is possible to use a resin-based cover for the Universal connector.

Pin No.	Name	Description	Specification	I/O
1	SSW	Ext/ Int Speaker Switch Input	Hi: INT, Low: EXT	I
2	SP+	BTL Output + for External Speaker	Standard load 8 Ω	O
3	SP-	BTL Output – for External Speaker	Standard load 8 Ω	O
4	MSW	Ext/ Int MIC Switch Input	Hi: INT, Low: EXT	I
5	EMC	External MIC Input	Impedance: 2.2 kΩ	I
6	ME	External MIC GND	-	
7	PTT	External PTT Input	Low: PTT ON	I
8	PF	Programmable Function Button Input	Input voltage: 0 V - 5.0 V	I
9	OPT	Aux I/O Port (for EXT Option)	I: 0 V - 5.0 V O: Standard load 25 kΩ	I/O
10	E	GND	GND	
11	5V	5 V	5 V power supply output Max output current: 140 mA	O
12	TXD	Serial Data Output	Baud rate: 1.152 Mbps max	O
13	RXD	Serial Data Input	Baud rate: 1.152 Mbps max	I
14	EMC	External MIC input	Impedance: 2.2 kΩ	I

Speaker/ Microphone Jacks (NX-3220/ NX-3320)

It is possible to use a resin-based cover for the Speaker/ Microphone jacks.

Pin No.	Name	Description	Impedance	I/O
1	PTT/RXD	PTT input / Serial data input	2.7 kΩ	I
2	MICI	MIC input	2.2 kΩ	I
3	NC	No connection	–	–
4	OPTDET	Option Detect	74 kΩ	I
5	50J	5V output	–	O
6	AE	Audio Earth	GND	–
7	TXD	Serial data output	10 kΩ	O
8	EXTSPDET	External speaker detection	–	–
9	SPO	AF power output	–	O

Antenna Terminal

50 Ω impedance

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

Belt clip 1

- Screws for belt clip (M3 x 8 mm) 2

Universal connector cap <NX-3200/ NX-3300 only> 1

Speaker/ microphone jacks cap <NX-3220/ NX-3320 only> 1

Speaker/ microphone locking bracket <NX-3220/ NX-3320 only> 1

Stopper <Full Button Model and Standard Button Model only> 1

Users Guide 1

INSTALLING/ REMOVING THE (OPTIONAL) BATTERY PACK

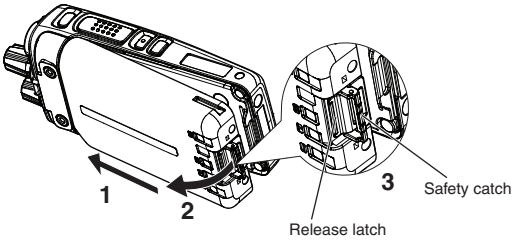
CAUTION

- Do not short the battery terminals or dispose of the battery by fire.
- Never attempt to remove the casing from the battery pack.
- Install the battery pack after cleaning the battery pack contacts and the transceiver terminals.
- Before charging a battery pack that is attached to the transceiver, ensure that the safety catch is firmly closed.
- If the release latch is tilted and the battery pack is not attached to the transceiver, return the release latch to its original position using your finger.

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.



INSTALLING/ REMOVING ALKALINE BATTERIES (OPTIONAL BATTERY CASE)

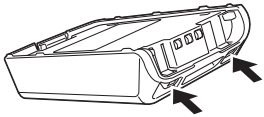
WARNING

- Do not install batteries in a hazardous environment where sparks could cause an explosion.
- Never discard batteries in fire; extremely high temperatures can cause batteries to explode.
- Do not short circuit the battery case terminals.
- Do not use rechargeable batteries.

Note:

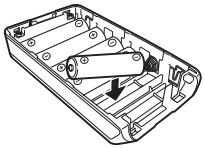
- If you do not plan to use the transceiver for a long period, remove the batteries from the battery case.
- This battery case has been designed for transmitting at a power of approximately 1 W (the low power setting on your transceiver). If you want to transmit a stronger signal (using the high power setting on your transceiver), use an optional rechargeable battery pack.

1 To open the battery case, press on the two tabs on the upper rear of the case, then pull the two halves apart.

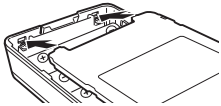


2 Insert 6 AA (LR6) Alkaline batteries into the battery case.

- Be sure to match the polarities with those marked in the bottom of the battery case.



3 Align the tabs of the cover with the base, then push down on the cover until it locks in place.



INSTALLING THE (OPTIONAL) ANTENNA

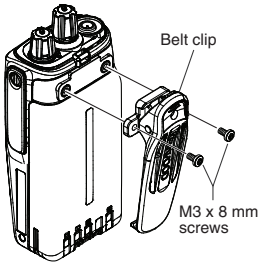
Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

INSTALLING THE BELT CLIP

If necessary, attach the belt clip using the two supplied M3 x 8 mm binding screws.

Note:

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



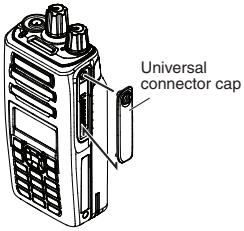
CAUTION

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

INSTALLING THE CAP OVER THE UNIVERSAL CONNECTOR <NX-3200/ NX-3300>

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

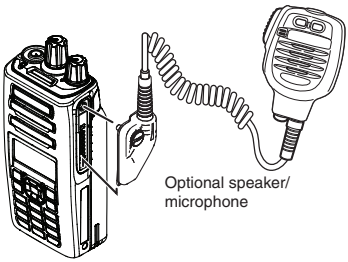
2 Secure the cap in place using the dressing screw.



INSTALLING THE (OPTIONAL) SPEAKER/ MICROPHONE OR HEADSET <NX-3200/ NX-3300>

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.
- The noise canceling function on KMC-54WD Speaker Microphone works using the built-in DSP of the transceiver, and can only be used with NX-3000 series Portable models.

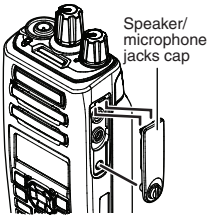
INSTALLING THE CAP OVER THE SPEAKER/ MICROPHONE JACKS <NX-3220/ NX-3320>

Install the cap over the speaker/ microphone jacks when not using an optional speaker/ microphone.

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

1 If you are not using an optional speaker/ microphone or headset, install the cap over the Speaker/ Microphone Jacks.

2 Secure the cap in place using the dressing screw.

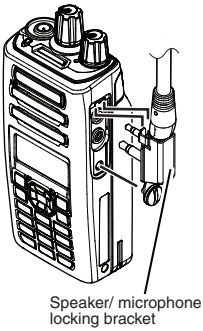


INSTALLING THE (OPTIONAL) SPEAKER/ MICROPHONE <NX-3220/ NX-3320>

1 Insert the speaker/ microphone plugs into the speaker/ microphone jacks of the transceiver.

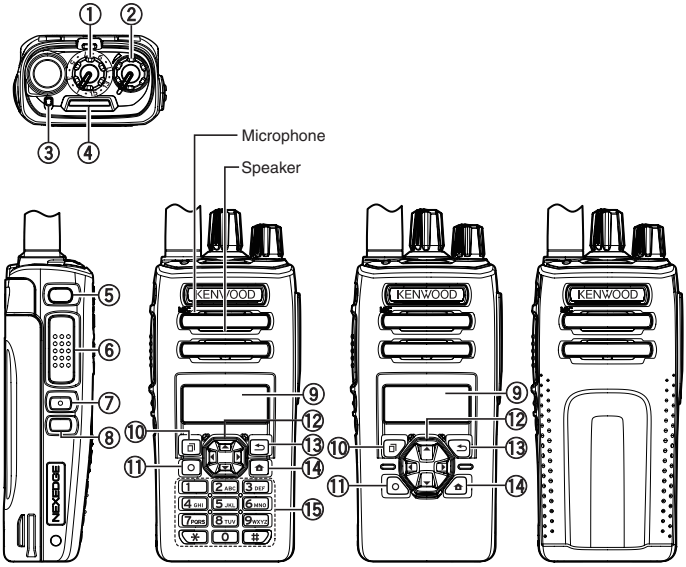
2 Place the locking bracket over the speaker/ microphone plugs so that the locking tabs insert into the transceiver grooves.

3 Secure the locking bracket in place using the dressing screw.



ORIENTATION

BUTTONS AND CONTROLS



Full Button Model　　Standard Button Model　　Basic Button Model

① **Selector**
Rotate this control to activate its programmable function. The default setting is Channel Select.

② **Power switch/ Volume control**
Turn clockwise to switch the transceiver ON. To switch the transceiver OFF, turn counterclockwise fully. Rotate to adjust the volume level.

③ **Transmit/ Receive/ Battery low indicator**
The indicator lights in different colors to indicate the current status of the transceiver.

Lights red while transmitting and green while receiving.

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.

④ **Light Bar**
This Light Bar lights when selecting a channel or upon reception.

Note:
- This indicator can be disabled by your dealer.

⑤ **Auxiliary (orange) button**
Press to activate its programmable function.

⑥ **PTT (Push-To-Talk) switch**
Press and hold, then speak into the microphone to call a station.

⑦ **Side 1 button**
Press to activate its programmable function. The default button setting is **[Squelch Off Momentary]**.

⑧ **Side 2 button**
Press to activate its programmable function. The default button setting is **[Backlight]**.

⑨ **LCD Display**
Refer to the display. {p. 20}

⑩ [ ] **button**
Press to activate its programmable function. The default button setting is **[Menu]**.

⑪ [ ] **button**
Press to activate its programmable function. The default button setting is **[Function]**.

⑫ **4-way D-pad (Full Button Model/ Standard Button Model)**
Press to activate its programmable function.

[◀] : The default setting is **[None]**.

[▶] : The default setting is **[None]**.

[▲] : The default setting is **[Zone Up]**.

[▼] : The default setting is **[Zone Down]**.

⑬ [⮌] **button**
Press to activate its programmable function. The default button setting is **[None]**.

⑭ [⌂] **button**
Press to activate its programmable function. The default button setting is **[Clear]**.

⑮ **Keypad (Full Button Model only)**
The keypad buttons can also be programmed with secondary functions if a programmable function buttons is programmed as Function.

For details on programming functions to the buttons on your transceiver, please contact your dealer or refer to the instruction manual available from the following URL.

http://manual.kenwood.com/en_contents/search/keyword

DISPLAY

Basic Frame

Display Area	Description
Function Indicator Area	Display the various function Icons ,signal strength indicator and battery power indicator and clock.
Main Area	Display the information of the transceiver such as Channel number and Zone number.
Button Guide Area	Display the button functions for [▯],[▲] and [↩].

Function Indicator

Indicator	Description
	Displays the signal strength.
	Displays the battery power.
H	The channel is using high transmit power.
M	The channel is using medium transmit power.
L	The channel is using low transmit power.
	In Digital mode (Digital Channel)
	In Analog mode (Analog Channel)
	In Digital mode (Mixed Channel)
	In Analog mode (Mixed Channel)

Indicator	Description
	Connected to Bluetooth device.
	The Bluetooth function is activated. Blinks in the process of turning on Bluetooth.
	The GPS position is determined. Blinks when the GPS is unable to determine the position.
	Scan, Priority Scan or Voting/Site Roaming is in progress. Blinks when the scan is paused.
P1	Indicates Priority channel 1 or Priority Monitor ID 1.
P2	Indicates Priority channel 2 or Priority Monitor ID 2.
P3	Indicates Priority Monitor ID 3.
P4	Indicates Priority Monitor ID 4.
	The current channel is added to the scanning sequence.
	The current Zone is added to the Multi-Zone scanning sequence.
	The Scrambler function is activated.
	The Encryption function is activated. Blinks when receiving an encrypted carrier.
A	The Encryption (AES) function is activated. Blinks when receiving an encrypted carrier.
D	The Encryption (DES) function is activated. Blinks when receiving an encrypted carrier.
E	The Encryption (ARC4) function is activated. Blinks when receiving an encrypted carrier.
	The Talk Around function is activated.
	The Monitor or Squelch Off function is activated.

Indicator	Description
	The External Speaker is activated.
	Blinks when an incoming call matches your Optional Signaling.
	The Vibrator function is activated. Blinks when the Vibrator is not functioning.
	A message is stored in the memory. Blinks when a new message is received.
	The VOX function is activated.
	The Site Lock function is activated.
	The Broadcast Call function is activated.
	The Surveillance function is activated.
	The System Lock function is activated.
	The auxiliary port is activated.
	Appears when the selected group is programmed as telephone IDs.
	The Tactical Zone is activated.
	The Lone Worker function is activated.
	The OVCM function is activated.
	The Activity Detection function is activated.
	The Operator Selectable Tone function is activated.
	Blinks during Auto Recording.

BASIC OPERATIONS

SWITCHING POWER ON/ OFF

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

Turn the **Power** switch/ **Volume** control counter-clockwise to switch the transceiver power OFF.

ADJUSTING THE VOLUME

rotate the **Power** switch**/ Volume** control to adjust the volume.

SELECTING A ZONE AND CHANNEL

1 Select the desired zone using the **Selector** or **4-way D-pad** or the buttons programmed as **[Zone Up]**/ **[Zone Down]**. Each zone contains a group of channels.

2 Select the desired channel using the **Selector** or **4-way D-pad** or the buttons programmed as **[Channel Up]**/ **[Channel Down]**. Each channel is programmed with settings for transmitting and receiving.

- The default setting for the **Selector** is **[Channel Select]**.
- The transceivers may have names programmed for zones and channels. The zone name and channel name can contain up to 12 and 14 characters respectively. While selecting a zone, the zone name will appear above the channel name.
- 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** or **4-way D-pad** and the **[Zone Up]**/ **[Zone Down]** or **[Channel Up]**/ **[Channel Down]** buttons.

2 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 3 cm to 4 cm (1.5 inches) from your mouth.

RECEIVING

Select the desired zone and channel. If signaling has been programmed on the selected channel, you will hear a call only if the received signal matches your transceiver settings.

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A “png_get_copyright” function is available, for convenient use in “about” boxes and the like:

```
printf("%s",png_get_copyright(NULL));
```

Also, the PNG logo (in PNG format, of course) is supplied in the files “pngbar.png” and “pngbar.jpg” (88x31) and “pngnow.png” (98x31).

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Glenn Randers-Pehrson

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December 19, 2013

***Md5**

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