

KENWOOD

NX-3000 series

USER GUIDE

GUIDE DE L'UTILISATEUR

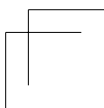
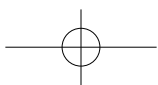
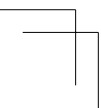
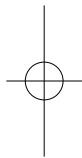
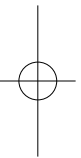
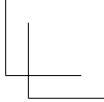
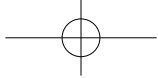
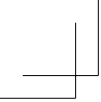
GUÍA DEL USUARIO



JVCKENWOOD Corporation

B5A-1562-00 (K)





VHF DIGITAL TRANSCEIVER

NX-3720H(G)

UHF DIGITAL TRANSCEIVER

NX-3820H(G)

USER GUIDE

This User Guide covers only the basic operations of your radio. Ask your dealer for information on any customized 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



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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.



- **EXPLOSIVE ATMOSPHERES (GASES, DUST, FUMES, etc.)**
Turn OFF your transceiver while taking on fuel or while parked in gasoline service stations. Do not carry spare fuel containers in the trunk of your vehicle if your transceiver is mounted in the trunk area.
- **INJURY FROM RADIO FREQUENCY TRANSMISSIONS**
Do not operate your transceiver when somebody is either standing near to or touching the antenna, to avoid the possibility of radio frequency burns or related physical injury.
- **DYNAMITE BLASTING CAPS**
Operating the transceiver within 500 feet (150 m) of dynamite blasting caps may cause them to explode. Turn OFF your transceiver when in an area where blasting is in progress, or where "TURN OFF TWO-WAY RADIO" signs have been posted. If you are transporting blasting caps in your vehicle, make sure they are carried in a closed metal box with a padded interior. Do not transmit while the caps are being placed into or removed from the container.

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.

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.

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Firmware Copyrights

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

PRECAUTIONS

Observe the following precautions to prevent fire, personal injury, and transceiver damage.

- Do not attempt to configure the transceiver while driving; it is too dangerous.
- Do not disassemble or modify the transceiver for any reason.
- Do not expose the transceiver to long periods of direct sunlight, nor place it near heating appliances.
- If an abnormal odor or smoke is detected coming from the transceiver, switch the transceiver power off immediately, 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 use options not specified by **KENWOOD**.
- Do not put the plastic bag used for packing of this equipment on the place which reaches a small child's hand. It will become a cause of suffocation if it wears flatly.
- Do not place the transceiver on unstable surfaces.
- Keep the volume as low as possible to protect your hearing.
- Always switch the transceiver power off before installing optional accessories.
- To dispose of batteries, be sure to comply with the laws and regulations in your country or region.



CAUTION

- The transceiver operates in 12 V negative ground systems only! Check the battery polarity and voltage of the vehicle before installing the transceiver.
- Use only the supplied DC power cable or a **KENWOOD** optional DC power cable.
- Do not cut and/or remove the fuse holder on the DC power cable.
- Do not place the microphone cable around your neck while near machinery that may catch the cable.



WARNING

For passenger safety, install the transceiver securely using the supplied or optional mounting bracket and screw set so the transceiver will not break loose in the event of a collision.

When using the Transceiver, refer to the "NOTICES TO THE USER" and "PRECAUTIONS". If the warnings are not observed, there may be the possibility to have any malfunction. In this case, press and hold the Power Switch for 5 seconds or more. If the malfunction persists, ask your dealer.

TERMINAL DESCRIPTIONS

ACC (D-SUB 15 Pin Connector)

Pin No.	Name	I/O	Description	Specification
1	SB	O	DC Power (Switched B) Output	Max. 2 A
2	IGN	I	Igintion Signal Input	Min. Input: 10.8 V Max. Input: 16.0 V
3	SP2/PA	O	Loudspeaker Output/ Public Address Output	4 Ω
4	DETO	O	RX Detected Audio Output	240 mVp-p (typ.)
5	DATAI	I	TX Data Input	45 k Ω
6	FNC1/ TXD	I/O	Programmable/ PC Serial Data from Radio	High Impedance
7	FNC2/ RXD	I/O	Programmable/ PC Serial Data to Radio	High Impedance
8	FNC3	I/O	Programmable	High Impedance
9	FNC4	I/O	Programmable	High Impedance
10	FNC5	I/O	Programmable	High Impedance
11	FNC6	I/O	Programmable	High Impedance
12	50AC	O	DC Power Output	5 V, Max 100 mA
13	HR1	I	Horn Alert Signal Input	Min. Input: 5 V Max. Input: 16.0 V
14	HR2	O	Horn Alert Signal Output	Max 2 A
15	GND	—	Ground	Ground

Speaker Jack (3.5 mm Phone Jack) 4 W/ 4 Ω

Pin No.	Name	I/O	Description	Specification
1	SPO	O	External Speaker Output	4 Ω (Min)
3	GND	—	Ground	Ground

DC Input Connector

Pin No.	Name	I/O	Description	Specification
Red	B	I	DC Power Input	13.6 V $\pm$ 15%
Black	GND	—	Ground	Ground

Microphone Jack

Pin No.	Name	I/O	Description	Specification
1	BLC/D+	O	MIC Backlight Control/USB Data+	
2	SB	O	DC Power (Switched B) Output	Max 200 mA
3	GND	—	Ground	Ground
4	PTT/ TXD	I/O	PTT/ PC Serial Data from Radio	High Impedance
5	ME	—	Mic Ground	Ground
6	MIC/ VBUS	I	Mic Signal Input/ USB VBUS	680 Ω
7	HOOK/ RXD/ D-	I	Hook/ PC Serial Data to Radio/USB Data-	High Impedance
8	DM	I/O	Mic Data Detection	

RF Antenna Terminal

50 Ω impedance

GPS Antenna Terminal

50 Ω impedance

UNPACKING AND CHECKING EQUIPMENT

Note:

- The following 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 below 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

DC power cable (with fuses)	1
• 15 A fuse	2
Mounting bracket	1
Screw set	
• 5 x 16 mm self-tapping screw	4
• M4 x 6 mm hex-headed screw with washer	4
• Spring washer	4
• Flat washer	4
Microphone (with cable)	
• KMC-35	1
• Microphone hanger (with 4 x 16 mm self-tapping screws)	1
User guide	1

PREPARATION



WARNING

Various electronic equipment in your vehicle may malfunction if they are not properly protected from the radio frequency energy which is present while transmitting. Typical examples include electronic fuel injection, anti-skid braking, and cruise control. If your vehicle contains such equipment, consult the dealer for the make of vehicle and enlist his/her aid in determining if they will perform normally while transmitting.

■ Connecting the power cable



CAUTION

The transceiver operates in 12 V negative ground systems only! Check the battery polarity and voltage of the vehicle before installing the transceiver.

- 1 Check for an existing hole, conveniently located in the firewall, where the power cable can be passed through.
 - If no hole exists, use a circle cutter to drill a hole, then install a rubber grommet.
- 2 Run the power cable through the firewall and into the engine compartment.
- 3 Connect the red lead to the positive (+) battery terminal and the black lead to the negative (–) battery terminal.
 - Place the fuse as close to the battery as possible.
- 4 Coil the surplus cable and secure it with a retaining band.
 - Be sure to leave enough slack in the cables so the transceiver can be removed for servicing while keeping the power applied.

■ Installing the Transceiver



WARNING

For passenger safety, install the transceiver securely using the supplied or optional mounting bracket and screw set, so the transceiver will not break loose in the event of a collision.

Note:

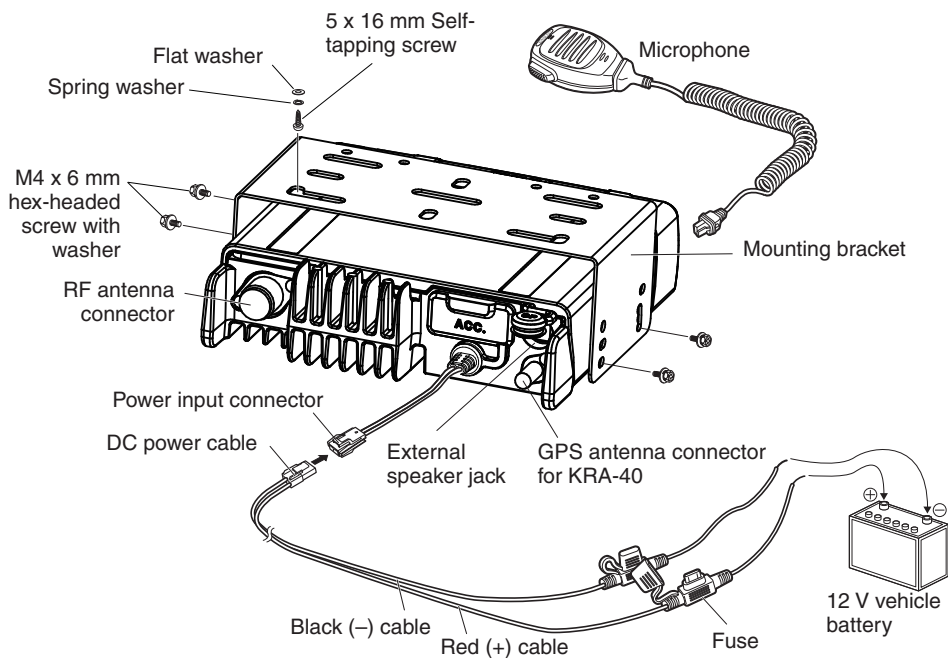
- Before installing the transceiver, check how far the mounting screws will extend below the surface. When drilling mounting holes, be careful not to damage vehicle wiring or parts.
- 1 Mark the position of the holes in the dash, using the mounting bracket as a template. Using a 4.2 mm (5/32 inch) drill bit, drill the holes, then attach the mounting bracket using the supplied screws.
 - Mount the transceiver within easy reach of the user and where there is sufficient space at the rear of the transceiver for cable connections.
 - 2 Connect the antenna and the supplied power cable to the transceiver.
 - 3 Slide the transceiver into the mounting bracket and secure it using the supplied hex-headed screws.

- 4 Mount the microphone hanger in a location where it will be within easy reach of the user.
- The microphone and microphone cable should be mounted in a place where they will not interfere with the safe operation of the vehicle.



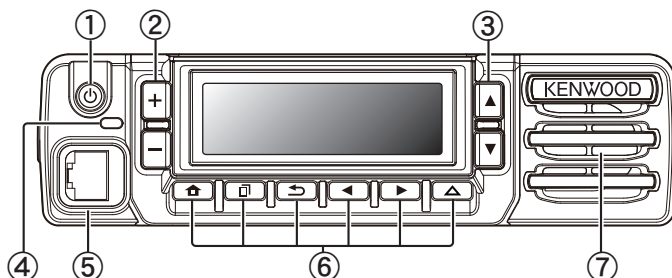
CAUTION

When replacing the fuse in the DC power cable, be sure to replace it with a fuse of the same value. Never replace a fuse with one that is rated with a higher value.



ORIENTATION

OPERATION PANEL



- ① **[⏻] (Power) switch**
Press to switch the transceiver ON or OFF.
- ② **[+] / [-] buttons**
Press to activate its programmable function. The default button setting is **[Volume Up]/ [Volume Down]**.
- ③ **[▲] / [▼] buttons**
Press to activate its programmable function. The default button setting is **[Channel Up]/ [Channel Down]**.
- ④ **TX/RX Indicator**
The indicator lights in different colors to indicate the current status of the transceiver.
Lights red while transmitting and green while receiving.
- ⑤ **Microphone jack**
Insert the microphone plug into this jack.
- ⑥ **[⏏] / [≡] / [↵] / [◀] / [▶] / Auxiliary (Δ) buttons**
Press to activate their programmable functions.
[⏏] : The default button setting is **[Clear]**.
[≡] : The default button setting is **[Menu]**.
[↵] : The default button setting is **[Squelch Off Momentary]**.
[◀] : The default button setting is **[Zone Down]**.
[▶] : The default button setting is **[Zone Up]**.
Auxiliary (Δ) : The default button setting is **[None]**.
- ⑦ **Speaker**
Internal speaker.

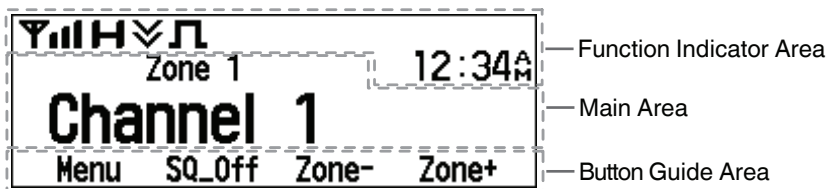
For details on programming functions to the buttons on your transceiver, please contact your dealer or refer to the "User Manual" available from the following URL.

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



DISPLAY

Basic Frame



Display Area	Description
Function Indicator Area	Displays the various function indicators, signal strength 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 [F], [S], [L] and [R] buttons.

Function Indicator

Indicator	Description
	Displays the signal strength.
	The channel is using high transmit power.
	The channel is using medium transmit power.
	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)
	The Bluetooth function is activated. Blinks in the process of turning on Bluetooth.
	Connected to Bluetooth device.
	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.

Indicator	Description
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 is activated.
🔊	The External Speaker is activated.
🔊	The External Speaker (Internal + External) is activated.
🎵	Blinks when an incoming call matches your Optional Signaling.
✉️	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.

Indicator	Description
	The selected group is programmed as telephone IDs. Blinks during Auto Telephone search.
	The Tactical Zone is activated.
	The Horn Alert function is activated.
	The Public Address function is activated.
	AUX A is activated.
	AUX B is activated.
	AUX C is activated.
	The Lone Worker function is activated.
	The OVCM function is activated.
	The Operator Selectable Tone function is activated.
	Blinks during Auto Recording.

BASIC OPERATION

SWITCHING POWER ON/ OFF

Press [⏻] to switch the transceiver ON.

Press [⏻] again to switch the transceiver OFF.

ADJUSTING THE VOLUME

Press the button programmed as [Volume Up] to increase the volume. Press the button programmed as [Volume Down] to decrease the volume.

SELECTING A ZONE AND CHANNEL

Select the desired zone and channel using the buttons programmed as [Zone Up]/ [Zone Down] and [Channel Up]/ [Channel Down].

- The transceivers may have names programmed for zones and channels. The zone name and channel name can contain up to 14 characters. 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.
- 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 1.5 inches (3 cm to 4 cm) 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.

INFORMATION ON SOFTWARE LICENSE

This unit uses a software based on the license below.

***zlib LICENSE**

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Jean-loup Gailly (jloup@gzip.org)

Mark Adler (madler@alumni.caltech.edu)

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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

glennrp at users.sourceforge.net

December 19, 2013

***Md5**

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L. Peter Deutsch

ghost@aladdin.com

MANDATORY SAFETY INSTRUCTIONS TO INSTALLERS AND USERS

- Use only manufacturer or dealer supplied antennas.
- Antenna Minimum Safe Distance: 40 cm (16 inches), 50% duty Cycle.
- Antenna Gain: 0 dBi referenced to a dipole.

The Federal Communications Commission has adopted a safety standard for human exposure to RF (Radio Frequency) energy which is below the OSHA (Occupational Safety and Health Act) limits.

- Antenna Mounting: The antenna supplied by the manufacturer or radio dealer must not be mounted at a location such that during radio transmission, any person or persons can come closer than the above indicated minimum safe distance to the antenna, i.e. **40 cm (16 inches), 50% duty Cycle.**
- To comply with current FCC RF Exposure limits, the antenna must be installed at or exceeding the minimum safe distance shown above, and in accordance with the requirements of the antenna manufacturer or supplier.
- Vehicle installation: The antenna can be mounted at the center of a vehicle metal roof or trunk lid, if the minimum safe distance is observed.
- Base Station Installation: The antenna should be fixed-mounted on an outdoor permanent structure. RF Exposure compliance must be addressed at the time of installation.

Antenna substitution: Do not substitute any antenna for the one supplied or recommended by the manufacturer or radio dealer.

You may be exposing person or persons to excess radio frequency radiation. You may contact your radio dealer or the manufacturer for further instructions.



Maintain a separation distance from the antenna to person(s) of at least **40 cm (16 inches), 50% duty Cycle.**

"This transmitter is authorized to operate with a maximum duty factor of 50%, in typical push-to-talk mode, for satisfying FCC RF exposure compliance requirements."

You, as the qualified end-user of this radio device must control the exposure conditions of bystanders to ensure the minimum separation distance (above) is maintained between the antenna and nearby persons for satisfying RF Exposure compliance. The operation of this transmitter must satisfy the requirements of Occupational/Controlled Exposure Environment, for work-related use, transmit only when person(s) are at least the minimum distance from the properly installed, externally mounted antenna. Transmit only when people outside the vehicle are at least the recommended minimum lateral distance away from the antenna/vehicle.

B59-2723-00

KENWOOD

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