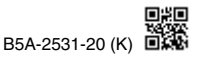


KENWOOD



DIGITAL TRANSCEIVER

NX-5000 series
NX-3000 series
TK-D740 TK-D840
VM5000 series

USER GUIDE

This User guide covers only the basic operations of your radio. For using details instruction manual, refer to the following URL or QR code.

<http://manual.kenwood.com/files/B5K-0509-00.pdf>



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, #6,912,495, #8,200,497, #7,970,606, and #8,359,197.

Firmware Copyrights

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

JVCKENWOOD Corporation

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.

- WARNING**
- ◆ **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.

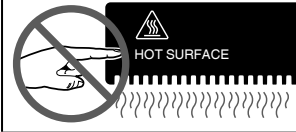
PRECAUTIONS

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 built-in battery, 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.
- ◆ 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 a fuse that has a higher value.

- 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.

- CAUTION**
-  Do not touch the metal surface of the transceiver while it is in use. Do not mount the transceiver such that the chassis can come in contact with skin. High temperatures may burn your skin.

SUPPLIED ACCESSORIES

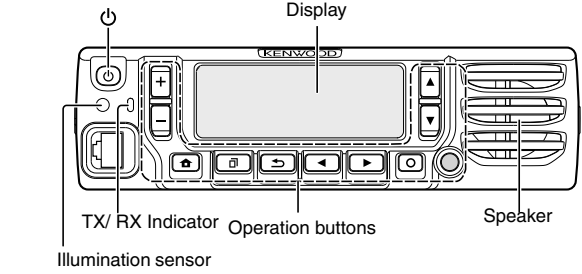
Carefully unpack the transceiver. We recommend that you identify the items listed in the following list before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

Item	NX-5700 NX-5800 NX-5900	NX-5700B NX-5800B NX-5900B	NX-5700H NX-5600H VM5730H VM5630H	NX-3000 series	TK-D740 TK-D840
DC power cable (with fuses)	1	–	–	1	1
• Fuse (15 A)	2	–	–	2	2
Mounting bracket	1	–	–	1	1
Microphone (with cable)	1	–	–	1	1
Microphone hanger (with 4 x 16 mm self-tapping screws)	1	–	–	1	1
Screw set:					
• 5 x 16 mm self-tapping screw	4	–	–	4	4
• M4 x 6 mm hex-headed screw with washer	4	–	–	4	4
• Spring washer	4	–	–	4	4
• Flat washer	4	–	–	4	4
Short plug	–	–	1	–	–
Molding cover	–	–	1	–	–
M4 x 10 mm pan head sems screw	–	–	1	–	–
User guide	1	1	1	1	1

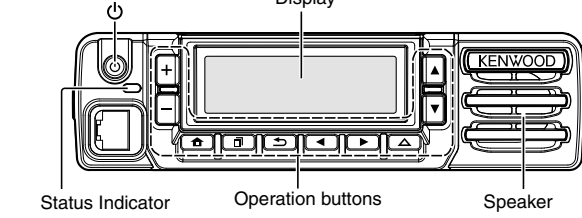
BASIC OPERATION

NX-5000 series/ VM5000 series

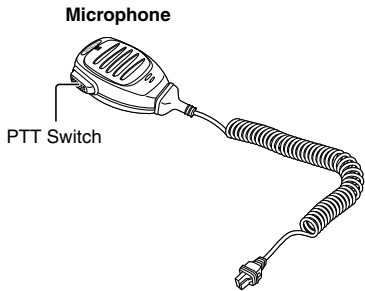
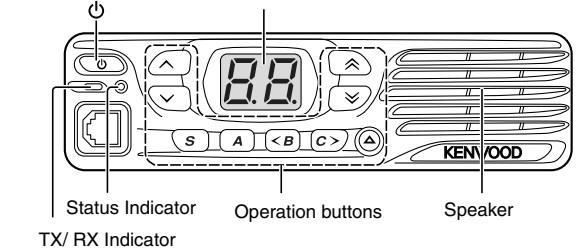
The illustration shows the model with an operation panel (Option:KCH-19) attached.



NX-3000 series



TK-D740/ TK-D840



SWITCHING POWER ON/OFF

Press [] to switch the transceiver ON.

Press [] again to switch the transceiver OFF.

ADJUSTING THE VOLUME

Press the [Volume Up] key to increase the volume. Press the [Volume Down] key to decrease the volume.

SELECTING A ZONE AND CHANNEL

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

TRANSMITTING

- 1 Select the desired zone and channel.
- 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.
 - For best sound quality, hold the microphone approximately 1.5 inches (3 ~ 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.

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.

Receiving Individual Calls (Digital)

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

MANDATORY SAFETY INSTRUCTIONS TO INSTALLERS AND USERS

- Use only manufacturer or dealer supplied antenna.
 - **Antenna Minimum Safe Distance: Refer to the values in the table below.**
 - Antenna Gain: 0 dBd 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 minimum safe distance indicated in the table below.
 - To comply with current FCC/ ISED 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.

- WARNING**
- Maintain a separation distance from the antenna to person(s) of at least the distance indicated in the table below.

You, as the qualified end-user of this radio device must control the exposure conditions of bystanders to ensure the minimum separation distance (table below) 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.

Antenna Minimum Safe Distance

VHF DIGITAL TRANSCEIVER	60 cm (2 feet), 50% duty Cycle
VHF DIGITAL TRANSCEIVER (NX-5700H, VM5730H)	200 cm (7 feet), 50% duty Cycle
VHF DIGITAL TRANSCEIVER (NX-5600H, VM5630H)	240 cm (8 feet), 50% duty Cycle
UHF DIGITAL TRANSCEIVER/ 700/800 MHz DIGITAL TRANSCEIVER	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/ ISED RF exposure compliance requirements."

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.
(NX-5000/ NX-3000 series)

SUPPLIER'S DECLARATION OF CONFORMITY

47 CFR § 2.1077 Compliance Information

Trade name: KENWOOD

Model(s): NX-5000 series, NX-3000 series, VM5000 series, TK-D740 and TK-D840

Responsible party: JVCKENWOOD USA Corporation 1440 Corporate Drive, Irving, TX 75038

Telephone number: 972-819-0700

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



SD™ and microSD™ are trademarks of SD-3C, LLC in the United States and/or other countries.

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.

INFORMATION ON SOFTWARE LICENSE

This transceiver uses a software according to the following license agreements.

*zlib LICENSE

Copyright (C) 1995-2013 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty.

In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly (jloup@gzip.org)

Mark Adler (madler@alumni.caltech.edu)

*libpng LICENSE

This copy of the libpng notices is provided for your convenience. In case of any discrepancy between this copy and the notices in the file png.h that is included in the libpng distribution, the latter shall prevail.

COPYRIGHT NOTICE, DISCLAIMER, and LICENSE:

If you modify libpng you may insert additional notices immediately following this sentence.

This code is released under the libpng license. libpng versions 1.2.6, August 15, 2004, through 1.6.8, December 19, 2013, are Copyright (c) 2004, 2006-2013 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.2.5 with the following individual added to the list of Contributing Authors

Cosmin Truta

libpng versions 1.0.7, July 1, 2000, through 1.2.5 - October 3, 2002, are Copyright (c) 2000-2002 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-1.0.6 with the following individuals added to the list of Contributing Authors

Simon-Pierre Cadieux

Eric S. Raymond

Gilles Vollant

and with the following additions to the disclaimer:

There is no warranty against interference with your enjoyment of the library or against infringement. There is no warranty that our efforts or the library will fulfill any of your particular purposes or needs. This library is provided with all faults, and the entire risk of satisfactory quality, performance, accuracy, and effort is with the user.

libpng versions 0.97, January 1998, through 1.0.6, March 20, 2000, are Copyright (c) 1998, 1999 Glenn Randers-Pehrson, and are distributed according to the same disclaimer and license as libpng-0.96, with the following individuals added to the list of Contributing Authors:

Tom Lane

Glenn Randers-Pehrson

Willem van Schaik

libpng versions 0.89, June 1996, through 0.96, May 1997, are Copyright (c) 1996, 1997 Andreas Dilger Distributed according to the same disclaimer and license as libpng-0.88, with the following individuals added to the list of Contributing Authors:

John Bowler

Kevin Bracey

Sam Bushell

Magnus Holmgren

Greg Roelofs

Tom Tanner

libpng versions 0.5, May 1995, through 0.88, January 1996, are Copyright (c) 1995, 1996 Guy Eric Schalnat, Group 42, Inc. For the purposes of this copyright and license, "Contributing Authors" is defined as the following set of individuals:

Andreas Dilger

Dave Martindale

Guy Eric Schalnat

Paul Schmidt

Tim Wegner

The PNG Reference Library is supplied "AS IS". The Contributing Authors and Group 42, Inc. disclaim all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. The Contributing Authors and Group 42, Inc. assume no liability for direct, indirect, incidental, special, exemplary, or consequential damages, which may result from the use of the PNG Reference Library, even if advised of the possibility of such damage.

Permission is hereby granted to use, copy, modify, and distribute this source code, or portions hereof, for any purpose, without fee, subject to the following restrictions:

1. The origin of this source code must not be misrepresented.
2. Altered versions must be plainly marked as such and must not be misrepresented as being the original source.
3. This Copyright notice may not be removed or altered from any source or altered source distribution.

The Contributing Authors and Group 42, Inc. specifically permit, without fee, and encourage the use of this source code as a component to supporting the PNG file format in commercial products. If you use this source code in a product, acknowledgment is not required but would be appreciated.

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).

Libpng is OSI Certified Open Source Software. OSI Certified Open Source is a certification mark of the Open Source Initiative.

Glenn Randers-Pehrson

glennrp at users.sourceforge.net

December 19, 2013

***Md5**

Copyright (C) 1999, 2000, 2002 Aladdin Enterprises. All rights reserved.

This software is provided 'as-is', without any express or implied warranty.

In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

L. Peter Deutsch

ghost@aladdin.com