

KENWOOD

NXR-5700
NXR-5800
NXR-5900
NXR-5901

VHF DIGITAL BASE-REPEATER
UHF DIGITAL BASE-REPEATER
800MHz DIGITAL BASE-REPEATER
900MHz DIGITAL BASE-REPEATER

INSTRUCTION MANUAL

BASE-RELAIS NUMÉRIQUE VHF
BASE-RELAIS NUMÉRIQUE UHF
BASE-RELAIS NUMÉRIQUE 800MHz
BASE-RELAIS NUMÉRIQUE 900MHz

MODE D'EMPLOI

BASE-REPETIDOR DIGITAL VHF
BASE-REPETIDOR DIGITAL UHF
BASE-REPETIDOR DIGITAL 800MHz
BASE-REPETIDOR DIGITAL 900MHz

MANUAL DE INSTRUCCIONES

JVCKENWOOD Corporation



NXR-5700/ NXR-5800/ NXR-5900/ NXR-5901 INSTRUCTION MANUAL

VHF DIGITAL BASE-REPEATER / UHF DIGITAL BASE-REPEATER / 800MHz DIGITAL BASE-REPEATER / 900MHz DIGITAL BASE-REPEATER

THANK YOU!

We are grateful you purchased this **KENWOOD** repeater.

PRECAUTIONS

- Do not expose the repeater to rain or moisture; to prevent fire or electric shock.
- Do not open the repeater under any circumstances; to avoid risk of electric shock.
- Do not expose the repeater to extremely hot or cold conditions.
- Do not expose the repeater to long periods of direct sunlight, nor place it close to heating appliances.
- Do not place the repeater in excessively dusty and/or humid areas, nor on unstable surfaces.
- 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 use options not specified by **KENWOOD**.
- Install optional accessories when power is not applied to the repeater.
- If you detect an abnormal odor or smoke coming from the repeater, disconnect the power from the repeater immediately. Contact your **KENWOOD** service center or dealer.

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.

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.

Firmware Copyrights

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



WARNING

- ◆ Do not install the repeater in explosive atmospheres (flammable gas, dust particles, metallic powders, grain powders, etc.).



CAUTION

- ◆ This repeater is intended for use as a fixed base station with the antenna located outdoors on the rooftop or on an antenna tower.
- ◆ This repeater is designed for a 13.6 V DC (NXR-5700/ NXR-5800) or 13.8 V DC (NXR-5900/ NXR-5901) DC power source. Never use a 24 V DC or higher source to power the repeater.
- ◆ Use only the supplied DC cord.
- ◆ Do not remove the ferrite core attached to the DC cord. Doing so may cause interference with radio communications.
- ◆ Do not put anything on top of the repeater. This will obstruct heat dissipation.

UNPACKING AND CHECKING EQUIPMENT

Note: The following unpacking information is for use by your **KENWOOD** dealer, an authorized **KENWOOD** service center, or the factory.

Carefully unpack the repeater. 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.

Item	Part Number	Quantity
Front glass	B10-2781-XX	1
Dressed screw	N08-0563-XX	1
Bracket	J29-0725-XX	2
Flat head machine screw	N32-4008-XX	4
Handle	K01-0421-XX	1
DC cord	E30-3427-XX	1
Lead wire with connector (15 pin)	E31-3228-XX	1
Fuse (15 A) : NXR-5700/ NXR-5800	F52-0042-XX	1
Fuse (7.5A) : NXR-5900/ NXR-5901	FZB10AX-7R5	1
SYNC cable	E3A-0177-XX	1
Instruction manual	B5A-2265-XX	1

INSTALLATION

To install the handles onto the front panel of the repeater, align the handles with the holes on the front panel, then secure the handles using the supplied screws.

Consult your dealer for installing the repeater and antenna.

MICROPHONE

Connect an optional KMC-30, KMC-35, KMC-9C, or KMC-53 **KENWOOD** microphone to the **MICROPHONE** jack on the front panel.

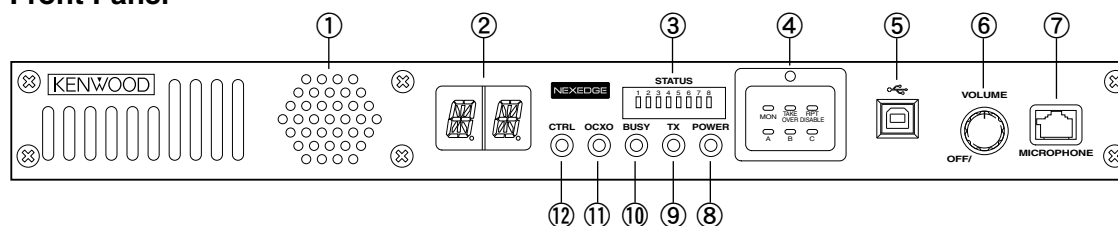
OCXO UNIT (KXK-3):Option

The OCXO unit (KXK-3) is an Oven Controlled Crystal Oscillator unit.

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.

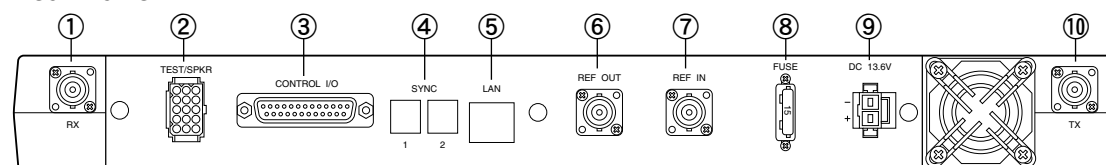
CONTROLS AND FUNCTIONS

■ Front Panel



- ① **Speaker**
- ② **CH/STATUS display**
Two 17-segment digits display the channel number, name, or status.
- ③ **STATUS indicator**
Indicates the status of the repeater. (NXDN mode)
- ④ **Programmable function keys**
Press these keys to activate their programmable functions.
- ⑤ **USB jack (B-Type)**
Connect to the PC using a USB cable.
- ⑥ **VOLUME control**
Turn clockwise until a click sounds, to unmute the audio. Rotate to adjust the audio. Turn counterclockwise fully to mute the audio.
- ⑦ **MICROPHONE jack**
Connect a microphone to this 8-pin modular jack.
- ⑧ **POWER indicator**
Lights green when power is supplied to the **DC 13.6V** jack or **DC 13.8V** jack. Blinks red when an abnormal voltage is present. While blinking, the repeater cannot be used.
- ⑨ **TX indicator**
Lights red while transmitting.
- ⑩ **BUSY indicator**
Lights green while a signal is being received.
- ⑪ **OCXO indicator**
The OCXO indicator shows the state of the reference 10 MHz oscillator :
Lights Green when using a reference signal from an optional OCXO unit (KXK-3).
Lights Orange when using a reference signal from another repeater. Blinks orange when 50 Ω termination is set to the repeater while having reference signal from another repeater.
Lights red when no reference signal is available or when an error occurs.
Does not light when using an internal VCXO reference signal.
- ⑫ **CTRL indicator**
The CTRL indicator shows the control channel status while using Digital trunking :
Lights Green when the repeater is used as control channel.
Blinks Green when using a non-dedicated control channel.

■ Rear Panel



The illustration shows the NXR-5700/ NXR-5800.

- ① **RX IN jack**
Connect an RX antenna or a duplexer to this BNC receptacle.
- ② **TEST/SPKR jack**
Test input/output jack. Connect an external speaker to this jack. When using a Built-in speaker, connect the attached Lead wire with connector (15 pin) to this jack.
- ③ **CONTROL I/O jack**
Connect a repeater controller or a remote panel to this DB-25 interface.
- ④ **SYNC 1 / 2 jack**
Connect to another repeater to use synchronous frame signaling for digital trunking.
- ⑤ **LAN jack**
Connect to Ethernet. Use a shielded category 5e or higher standard LAN cable shorter than 3 meters.
- ⑥ **REF OUT jack**
Connect to another repeater within the site to supply a reference signal.
- ⑦ **REF IN jack**
Connect from another repeater within the site to receive a reference signal.
- ⑧ **FUSE**
Insert 15 A (NXR-5700/ NXR-5800)/ 7.5 A (NXR-5900/ NXR-5901) blade fuse into this fuse holder.
- ⑨ **DC 13.6V jack/ DC 13.8V jack**
Connect a 13.6 V DC (NXR-5700/ NXR-5800)/ 13.8 V DC (NXR-5900/ NXR-5901) power supply to this jack.
- ⑩ **TX OUT jack**
Connect a TX antenna or a duplexer to this BNC receptacle.

REPEATER OPERATION

Note: Please consult your dealer for programming the repeater. Due to the frequency stability on the 6.25 kHz bandwidth channel, when operating the repeater using an optional OCXO unit, allow the unit to warm up after turning the power on. Refer to the KXK-3 instruction manual concerning the warm up duration. After turning on the power, wait for approximately 10 seconds for the VCXO or 5 minutes for the OCXO (when mounting) to warm up. During this time, the CH/STATUS Display will blink. The keys will function when they are pressed.

When power is applied to the repeater, the **POWER** indicator lights green. Turn the **VOLUME** control clockwise until a click sounds, to unmute the audio. Rotate to adjust the audio. Turn the **VOLUME** control counterclockwise fully to mute the audio.

The **BUSY** indicator lights green while receiving a signal and the **TX** indicator lights red while transmitting.

TRANSCIVER OPERATION

■ Receive

Adjust the volume to your desired level. You may need to readjust the volume if you are having interference while receiving a message from your dispatcher or another member in your fleet.

The **BUSY** indicator lights green while a signal is being received.

■ Transmit

- 1 Listen to the channel before transmitting, to make sure it is not being used.
- 2 Press the microphone **PTT** switch, then speak in your normal speaking voice.
The **TX** indicator lights red while transmitting.
- 3 When you finish speaking, release the **PTT** switch.

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

NXR-5700-K/ NXR-5800-K3	180 cm (6 feet)
NXR-5800-K	120 cm (4 feet)
NXR-5900-K/ NXR-5901-K	20 cm (8 inches)

TERMINAL DESCRIPTION

Access the following URL for the terminal description.
<http://manual.kenwood.com/files/B5K-0197-00.pdf>



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