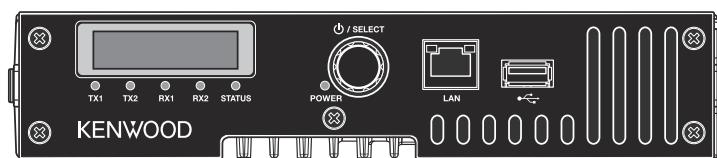


# KENWOOD

## NXR-1800

### INSTRUCTION MANUAL



JVCKENWOOD Corporation

B5A-4136-00



UHF REPEATER  
**NXR-1800**  
INSTRUCTION MANUAL

**THANK YOU!**

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

**PRECAUTIONS**

- Do not expose the repeater to rain or moisture in order to prevent fire or electric shock.
- Do not open the repeater under any circumstances in order to avoid the risk of electric shock.
- 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 in a place which can be reached by a small child's hands. It will become the cause of suffocation if it is worn completely.
- Do not use options not specified by **KENWOOD**.
- Install optional accessories when the power of the repeater is off.
- If you detect an abnormal odor or smoke coming from the repeater, disconnect the power from the repeater immediately, and contact your **KENWOOD** service center or dealer.
- Do not place any objects that may block the ventilation slots at the front of the main body or the fan at the rear.

**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 servicing to qualified technicians only.

**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/**JVCKENWOOD**. 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.

**WARNING**

- Do not install the repeater in an explosive atmosphere (of inflammable 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 13.2 V DC power source. Never use a 24 V DC or higher source to power the repeater.
- Use only the supplied DC power cable.
- Do not remove the ferrite core connected to the DC power cable. Removal may cause harmful interference with radio communications.
- Do not put anything on top of the repeater. Putting something on top obstructs heat dissipation.
- Turn off the repeater in the following locations:  
Close to a person using a pacemaker
- During transmission, do not touch the antenna terminals or the antenna whose covering is broken. Touching them may cause high frequency burns.
- Make sure that the tip of the antenna does not touch your eyes.
- Do not touch the metal surface of the repeater during use. Mount the repeater so that the chassis does not make contact with the skin. Hot temperatures may burn your skin.
- Continuous listening to loud sounds can cause hearing impairment. Use the minimum volume level required.
- 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.

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. #7,970,606, #8,359,197, #8,315,860, and #8,595,002.

**Firmware Copyrights**

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

**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	Remarks	Quantity
DC power cable with fuses (15 A)	4 m (with fuse box)	1
Bracket	Short type	1
Bracket	Long type	1
Flat head machine screw	For bracket	4
Reinforcing hardware	For connect set	1
Bind head machine screw	For reinforcing hardware	8
Handle	-	1
Foot	-	4
Instruction manual	-	1

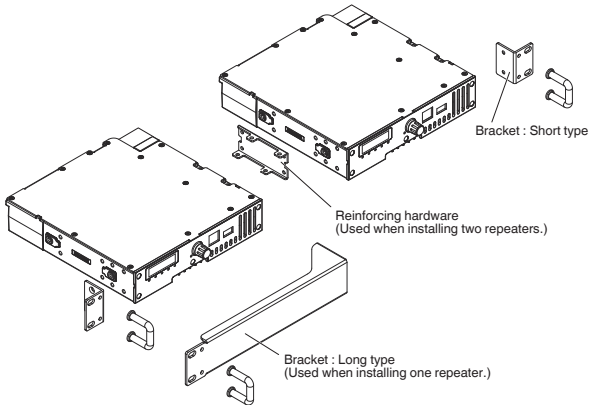
**Note:** Use only the supplied screws.

## INSTALLATION

Refer to the diagrams below when mounting the repeater on the rack. If another of this device is purchased, two repeaters can be jointly mounted by using the attached reinforcing hardware.

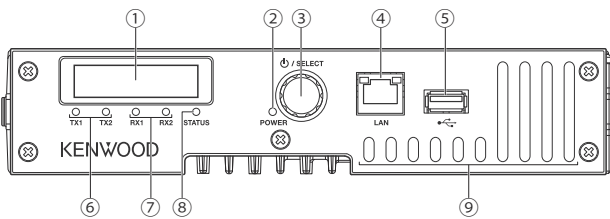
Use one long-type bracket and one short-type bracket if mounting one repeater on the rack. Mounting can be either on the left or right. Use two short-type brackets if mounting two repeaters on the rack.

Consult your dealer for further detail of installing the repeater and antenna.

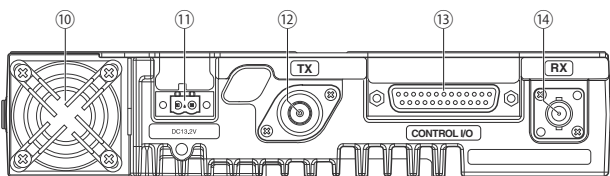


## CONTROLS AND FUNCTIONS

### Front



### Rear



#### 1 Display

Displays the channel information, MENU, or status of the repeater.

#### 2 POWER indicator

Lights green while power is supplied within the operating range to the DC 13.2 V jack and the power of the repeater is turned on.

Turns off when the power supply voltage is outside of the operating range or the power of the repeater is turned off.

#### 3 POWER switch/select

The following two methods using the KPG-D7 settings turn the power on or off:

- When DC power is supplied to the repeater, the power is automatically turned on. When power is no longer supplied to the repeater, the power will be turned off.
- Pressing while the power is turned off turns the power on. When the power is on, you can turn it off by operating the MENU.

The selector is used to select and set the MENU items.

#### 4 LAN jack

Connect to the Ethernet. Use a shielded category 5e or higher standard LAN cable shorter than 3 meters.

#### 5 USB port (Type-A)

Connect the USB audio accessories (headsets, microphones, speakers, etc.) directly, or connect the audio accessories via the USB audio adapter.

The USB audio equipment to connect must support either the standard Linux USB audio driver or the standard Windows USB audio driver.

#### 6 TX1/ TX2 indicator

During DMR transmission, the **TX1** indicator lights red when communicating with the radio in Timeslot 1, and the **TX2** indicator lights red when communicating with the radio in Timeslot 2.

For anything other than DMR, both **TX1** and **TX2** are lit during transmission.

#### 7 RX1/ RX2 indicator

On the DMR standby channel, the **RX1** indicator lights green while receiving a receivable CC matching signal in Timeslot 1. The **RX2** indicator lights green while receiving a receivable CC matching signal in Timeslot 2.

For anything other than DMR, both **RX1** and **RX2** are lit while receiving a signal with matching signaling and only **RX1** is lit while receiving a signal that does not match signaling.

#### 8 STATUS indicator

Indicates the status of the repeater. Blinks red while the status is abnormal.

#### 9 Ventilation slots

#### 10 Fan

#### 11 DC jack

Connect a 13.2 V DC power supply to this jack.

**Note:** After inserting the connector of the attached DC cable into the DC jack, tighten the screws on both sides of the connector firmly to avoid the falling out of the connector.

#### 12 TX OUT jack

Connect a TX antenna or a duplexer to this N receptacle.

#### 13 CONTROL I/O jack

Connect a repeater controller or a remote panel to this DB-25 interface.

#### 14 RX IN jack

Connect an RX antenna or a duplexer to this BNC receptacle.

## REPEATER OPERATION

**Note:** Please consult your dealer for programming the repeater.

The **RX1/ RX2** indicator lights green while receiving a signal and the **TX1/ TX2** indicator lights red while transmitting.

## TRANSCIVER OPERATION

**Note:** Connect the audio accessory to the USB port. Consult your dealer for other methods for transmission and reception by using the application (Test Console), microphone, and speaker on a PC connected via a LAN.

### Receive

Adjust the volume to your desired level by MENU operation. 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 **RX1/ RX2** 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 Change the **Test PTT Control** to "On" by MENU operation, then speak in your normal speaking voice. The **TX1/ TX2** indicator lights red while transmitting.
- 3 When you finish speaking, change the **Test PTT Control** to "Off" by MENU operation.

## 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.
- **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.

#### **Antenna Minimum Safe Distance**

Frequency Range	Rated Power	Safe Distance
NXR-1800-E	40 W (duty cycle 50%)	94 cm (3.1 feet)
	25 W (duty cycle 100%)	106 cm (3.5 feet)

#### **SUPPLIER'S DECLARATION OF CONFORMITY**

47 CFR § 2.1077 Compliance Information

Trade name: KENWOOD

Model(s): NXR-1800-E

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

Telephone number: 972-819-0700

# KENWOOD