

INSTRUCTION MANUAL

TKR-851-2

THANK YOU!

We are grateful you purchased this **KENWOOD** repeater. We believe this easy-to-program repeater will be highly effective in your communications system, and will keep personnel operating at peak efficiency.

KENWOOD incorporates the latest in advanced technology into all of our products. As a result, we feel strongly that you will be pleased with the quality and features of this product.

FEATURES

- You can easily program channel data using the KPG-91D software on a PC.
- You can recall 1 of 16 preset channels using either a PF key or the external control line.
- The firmware can be written to the Flash memory through an external source.
- QT/DQT signalling can be programmed on each channel. It simultaneously decodes up to 16 different QT/DQT tones.
- Air Remote Control Function.
- The interface port can be used with external equipment, such as a repeater controller.
- The repeater has multi-mode capability.

Wide: 30 kHz / Narrow: 15 kHz (TKR-751; K type only)

Wide: 25 kHz / Narrow: 12.5 kHz (TKR-751/TKR-851)

- You can adjust the following functions from a PC:

- Squelch
- RX Audio Signal Output (RA)
- RX Detector Signal Output (RD)
- RX Frequency
- RF Output Power
- Maximum Deviation
- TX Audio Input (TA)
- Signaling Deviation (TD)
- DQT Balance
- QT Deviation
- DQT Deviation
- Test Tone Deviation
- CW ID Deviation
- Repeat Gain
- TX Frequency
- DTMF Deviation
- Courtesy Tone Deviation
- Battery Operating Tone Deviation
- Battery Warning Tone Deviation
- Power Down Detect
- 5 Tone Deviation (M type only)

PRECAUTIONS

- Do not expose the unit to rain or moisture; to prevent fire or electric shock.
- Do not open the unit under any circumstances; to avoid risk of electric shock.
- Do not expose the unit to long periods of direct sunlight, nor place it close to heating appliances.
- Do not place the unit in excessively dusty and/or humid areas, nor on unstable surfaces.
- If you detect an abnormal odor or smoke coming from the unit, disconnect the power from the unit immediately. Contact your **KENWOOD** service center or dealer.

NOTICES TO THE USER

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 in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

- ** GOVERNMENT LAW PROHIBITS THE OPERATION OF UNLICENSED RADIO TRANSMITTERS WITHIN THE TERRITORIES UNDER GOVERNMENT CONTROL.
- ** ILLEGAL OPERATION IS PUNISHABLE BY FINE OR IMPRISONMENT OR BOTH.
- ** REFER SERVICE TO QUALIFIED TECHNICIANS ONLY.

CAUTION: This repeater is intended for use as a fixed base station with the antenna located outdoors on the rooftop or on antenna tower.

UNPACKING AND CHECKING EQUIPMENT

Note: The following unpacking information is for use by your **KENWOOD** dealer, an authorized **KENWOOD** service facility, 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
Hardware fixture	J21-8402-#4	1
Front Glass	B10-2635-#4	1
Filter	B11-1259-#4	1
Cushion	G13-1801-#4	4
Cushion	G13-1802-#4	4
Foot	J02-0475-#5	2
Foot	J02-0492-#4	2
Grommet	J59-0302-#5	2
Handle	K01-0418-#5	1
Screw	N30-4006-46	2
Screw	N35-3006-45	5
DC Cord	E30-3427-#5	1
Connector Cable	E31-3228-#5	1
Fuse	F06-1032-#5	1
Instruction Manual	B62-1775-##	1
Warranty Card		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.

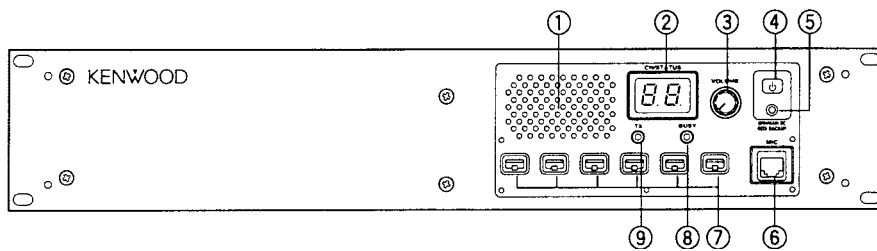
Please consult your dealer for installing the repeater and antenna.

MICROPHONE

Connect an optional KMC-30, KMC-27A, KMC-27B, or KMC-9C **KENWOOD** microphone to the **MIC** jack on the front panel.

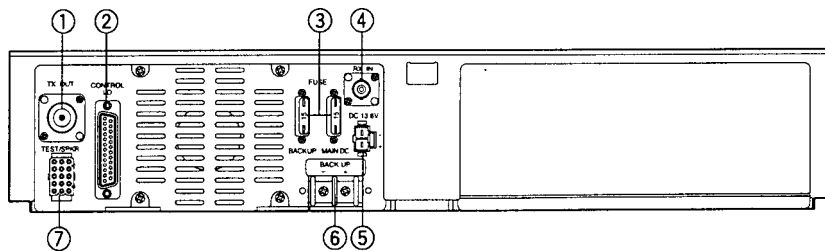
CONTROLS AND FUNCTIONS

** Front Panel



- | | |
|--|---|
| <p>① Speaker</p> <p>② CH/STATUS Display
Two, 7-segment digits display the channel number or status.</p> <p>③ VOLUME control
Rotate to adjust the volume.</p> <p>④ DC SOURCE switch</p> <p>⑤ Power indicator
Lights green when power is applied from the DC 13.6V jack. Lights red when power is applied from the BACKUP battery terminal.</p> | <p>⑥ Mic jack
Connect a microphone to this 8-pin modular jack.</p> <p>⑦ Programmable Function keys
Press these keys to activate their programmable functions.</p> <p>⑧ BUSY indicator
Lights green while a signal is being received.</p> <p>⑨ TX indicator
Lights red while transmitting.</p> |
|--|---|

** Rear Panel



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|---|---|
| <p>① TX OUT jack
Connect a TX antenna or a duplexer to this receptacle.</p> <p>② CONTROL I/O jack
Connect an external programming device or repeater controller to this DB-25 interface.</p> <p>③ FUSE
Insert 10 A blade fuses into these fuse holders.</p> | <p>④ RX IN jack
Connect a RX antenna or a duplexer to this BNC receptacle.</p> <p>⑤ DC 13.6V jack
Connect a 13.6 V DC power supply to this jack.</p> <p>⑥ BACKUP battery terminal</p> <p>⑦ TEST/SPKR jack
Test input/output jack. Connect an external speaker to this jack.</p> |
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REPEATER OPERATION

Note: Please consult your dealer for programming the repeater.

When power is applied to the unit, the **POWER** indicator lights.

- Green when using the main DC jack.
- Red when using the Backup terminal.

Rotate the **VOLUME** control to adjust the volume.

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

TRANSCEIVER OPERATION

** Receive

Adjust the volume to your desired level. You may need to readjust the volume when you receive 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: 120 cm (4 feet), 50% duty Cycle.**
- 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 above indicated minimum safe distance to the antenna, i.e. **120 cm (4 feet) , 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 **120 cm (4 feet) , 50% duty Cycle.**

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