

KENWOOD

TK-840
TK-940
TK-941

UHF FM TRANSCEIVER
800 MHz FM TRANSCEIVER
900 MHz FM TRANSCEIVER

INSTRUCTION MANUAL

EMETTEUR-RECEPTEUR FM UHF
EMETTEUR-RECEPTEUR FM 800 MHz
EMETTEUR-RECEPTEUR FM 900 MHz

MODE D'EMPLOI

TRANSCEPTEUR FM DE UHF
TRANSCEPTEUR FM DE 800 MHz
TRANSCEPTEUR FM DE 900 MHz

MANUAL DE INSTRUCCIONES

KENWOOD CORPORATION

Models Covered By This Manual:

- **TK-840:** UHF FM Transceiver (25 W)
- **TK-940:** 800 MHz FM Transceiver (15 W)
- **TK-941:** 900 MHz FM Transceiver (15 W)

This manual identifies and describes differences between the above versions.

Notice To The User:

IMPORTANT:

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 A QUALIFIED LICENSED OR CERTIFIED TECHNICIAN 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 in the instruction manual. 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.*

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THANK YOU!

We are grateful you chose **KENWOOD** for your land mobile applications. We believe this easy-to-use transceiver will provide dependable communications to keep personnel operating at peak efficiency.

KENWOOD transceivers incorporate the latest in advanced technology. As a result, we feel strongly that you will be pleased with this product's quality and features.

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 and do not operate 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 anyone is touching the antenna, or when anyone is standing within two to three feet of your antenna, to avoid the possibility of radio frequency burns or related physical injury.

◆ **DYNAMITE BLASTING CAPS**

Dynamite blasting caps may explode by the operation of transceivers, if such operation occurs within 500 feet of the blasting caps. Turn off and do not operate 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 certain they are carried in a closed metal box having a padded interior. Do not transmit during the time that caps are being placed into or removed from this container.

UNPACKING AND CHECKING EQUIPMENT

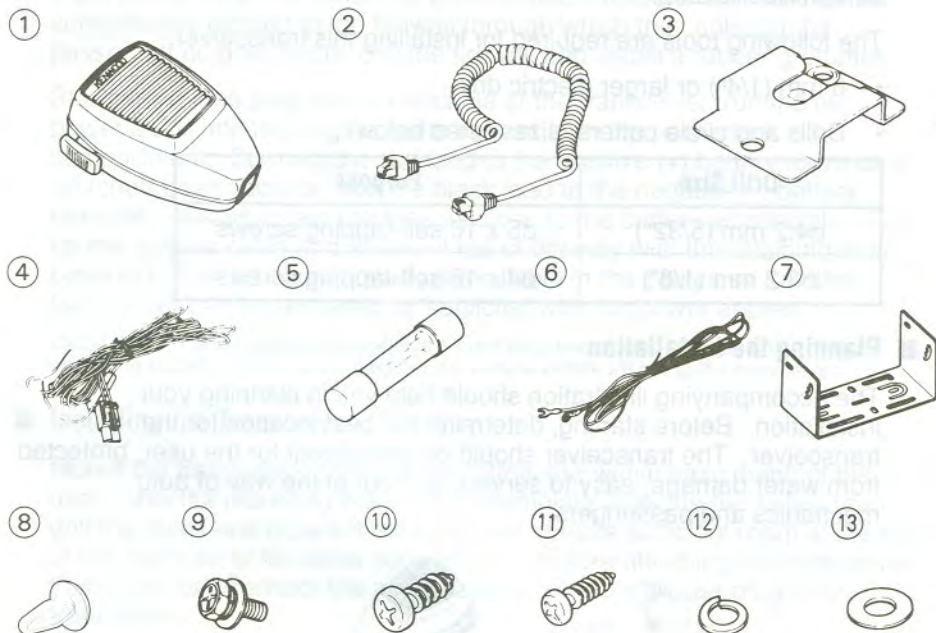
Note: The following instructions are for use by your **KENWOOD** dealer, an authorized **KENWOOD** service facility, or the factory.

Carefully unpack the transceiver. We recommend that you identify the items listed in the table before discarding the packing material. If any damage has occurred during shipment, file a claim with the carrier immediately.

■ Supplied Items

Diagram Reference	Item	Part Number	Qty.
—	Transceiver	—	1
①	Microphone	T91-0374-XX	1
②	Microphone cable	E30-2089-XX	1
③	Microphone hanger	J19-1376-XX	1
④	Power cable assembly	E30-2076-XX	1
⑤	Spare fuse (10 A)	F51-0016-XX	1
⑥	Mic. hanger ground cable	E30-2036-XX	1
⑦	Mounting bracket	J29-0441-XX	1
⑧	Speaker-jack cap	B09-0235-XX	1
	Mounting hardware		
⑨	Hex bolt	N69-4010-XX	7
⑩	Self-tapping screw (large)	N46-5016-XX	4
⑪	Self-tapping screw (small)	N46-4016-XX	3
⑫	Spring washer	N16-0050-XX	4
⑬	Flat washer	N15-1050-XX	4
—	Warranty card (U.S.A. only)	—	1
—	Instruction manual	B62-0459-XX	1

■ Diagram References



INSTALLATION AND CONNECTION

WARNING! INTERFERENCE WITH VEHICULAR ELECTRONICS

Electronic fuel injection systems, electronic anti-skid braking systems, and electronic cruise control systems are typical of the types of electronic devices that may malfunction due to a lack of protection from radio frequency energy that is present when transmitting. If the vehicle contains such equipment, consult the dealer for the make of vehicle and enlist his aid in determining if such electronic circuits will perform normally when the transceiver is transmitting.

Note: The following instructions are for use by your **KENWOOD** dealer, an authorized **KENWOOD** service facility, or the factory.

■ Installation Equipment

CAUTION: Take care when drilling mounting holes to avoid damaging vehicle wiring or parts. Always check to see how far the mounting screws will extend below the mounting surface before installing.

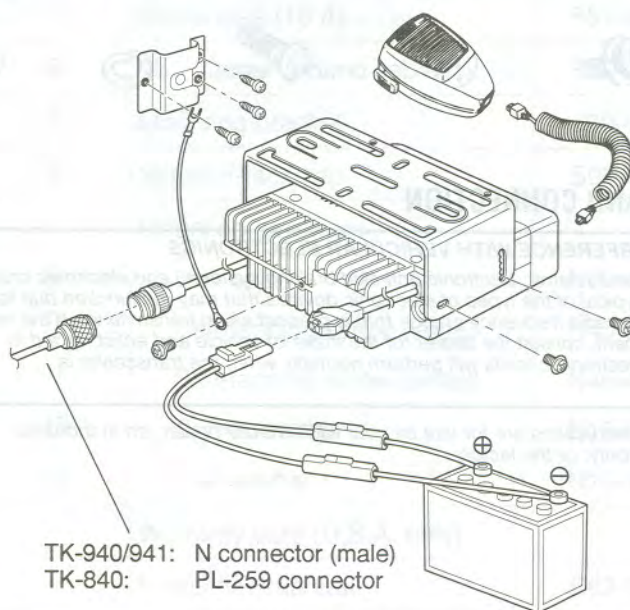
The following tools are required for installing this transceiver:

- 6 mm (1/4") or larger electric drill
- Drills and circle cutters (sizes listed below)

Drill Size	Purpose
ø4.2 mm (5/32")	ø5 x 16 self-tapping screws
ø3.2 mm (1/8")	ø4 x 16 self-tapping screws

■ Planning the Installation

The accompanying illustration should help you in planning your installation. Before starting, determine the best location for the transceiver. The transceiver should be convenient for the user, protected from water damage, easy to service, and out of the way of auto mechanics and passengers.



TK-940/941: N connector (male)
TK-840: PL-259 connector

■ Power Cable

The power cable consists of a fused red lead, a fused black lead, and a 2-pin power plug. To install the power cable, check for an existing hole conveniently located in the firewall through which the cable can be passed. If no hole exists, drill the firewall and install a rubber grommet.

Starting with the plug end of the cable at the transceiver, run the two power leads into the engine compartment from the passenger compartment. Connect the red lead to the positive (+) battery terminal or switched power source, and the black lead to the negative (-) battery terminal. Always locate the fuse as close to the battery as possible. Coil up the surplus cable and secure it out of the way with the retaining strap provided. Ensure enough slack is available in the cables so that the transceiver can be removed for servicing with the power applied.

CAUTION: *The transceiver operates in 12 volt negative ground systems only! Always check the battery polarity and voltage of the vehicle before installing the transceiver.*

■ Installing the Transceiver

Mount the transceiver so that the controls are within easy reach of the user. Use the mounting bracket as a template to locate the holes, then drill the holes and mount the transceiver. Leave sufficient room at the rear of the transceiver for cable connections. Before attaching the transceiver to the bracket, connect the antenna connector and power plug to the transceiver.

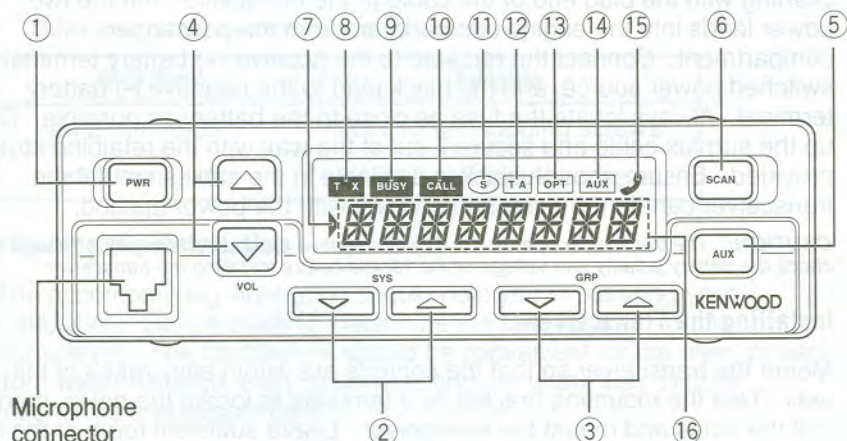
WARNING! *For passenger safety, mount the transceiver securely so that it will not break loose in the event of a collision. This is especially important in station wagons, vans and similar type installations where a loose transceiver could be extremely dangerous to the vehicle occupants.*

■ Microphone

Mount the microphone hanger so that the microphone is within easy reach of the user. Neither the microphone nor microphone cable should interfere with the safe operation of the vehicle. After mounting the microphone hanger, connect the microphone plug to the microphone connector on the front of the transceiver, then place the microphone on the hanger.

CONTROLS AND FUNCTIONS

■ Front Panel



① **POWER** switch

Press to switch the power ON or OFF.

② **SYSTEM** Up/Down switches

Pressing the right **SYSTEM** switch increases the selected system number by one. Pressing the left **SYSTEM** switch decreases the system number by one. Holding either switch down causes the function to repeat.

③ **GROUP** Up/Down switches

Operate similar to the **SYSTEM** switches but selects the groups available within a system. Changing the system number causes the Group Display to indicate the revert group number (the group that was displayed when the system was last selected).

④ **VOLUME** Up/Down switches

Pressing the upper **VOLUME** switch increases the volume level by one step. Pressing the lower **VOLUME** switch decreases the volume level by one step. Holding either switch down causes the function to repeat.

⑤ **AUX (Auxiliary) switch**

Pressing this switch toggles the programmable auxiliary function such as Horn Alert, Manual Relay, etc. Contact your dealer for further details.

⑥ **SCAN switch**

Pressing this switch toggles System Scan ON or OFF.

⑦ **Delete indicator**

Appears when systems are locked out of the System Scan list. Blinks while scanning if any systems are locked out.

⑧ **TX indicator**

Appears while the transceiver is in the transmit state.

⑨ **BUSY indicator**

Appears when attempting to access a trunked system that is busy with no available repeaters.

⑩ **CALL indicator**

This indicator shows if a call was received while you were away from the vehicle. It is programmed to appear when specific group IDs are received (trunked systems) or when a call is received on a specific group that opens the audio (conventional systems). The microphone hook-switch, PTT, System, or Group keys will reset the CALL indicator. Call indicator reset by other keys is decided by dealer programming.

⑪ **Scan indicator**

Appears while in the System Scan mode.

⑫ **TA indicator**

Appears when the Talk Around system/group is selected.

⑬ **OPT indicator**

Displays the status of Optional Signaling.

⑭ **AUX (Auxiliary) indicator**

Appears when the Manual Relay or Horn Alert function is activated (ON) by pressing the **AUX** switch.

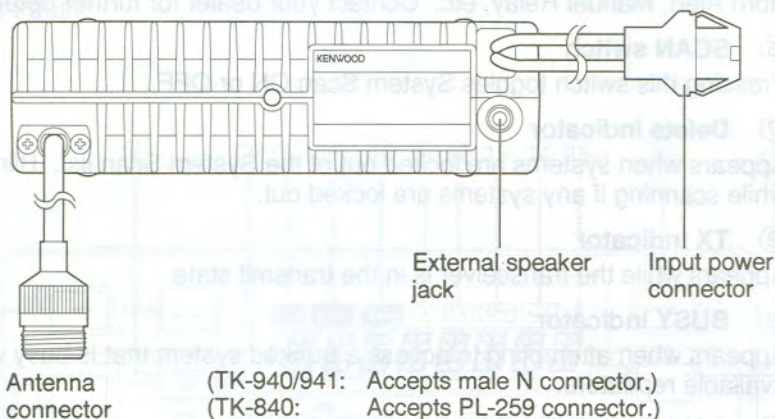
⑮ **Handset indicator**

Appears when a group is selected that is programmed with telephone IDs.

⑯ **Alphanumeric display**

After the dealer's qualified service technician programs the transceiver, the Alphanumeric Display shows either system numbers and group numbers for your specific network or the names of systems and/or groups.

■ Rear Panel



■ Microphone

⑪ PTT (Push-To-Talk) switch

Press PTT to activate the transmit portion of the transceiver. Speak into the microphone while holding PTT down. See "Placing a Dispatch Call" {page 9} for details.



TRUNKED OPERATION

■ Receiving a Dispatch Call

- 1 Switch ON the transceiver.
- 2 Press the **VOLUME Up/Down** switches to set the volume level. Use the volume level tones as guides.
- 3 Select the system and group by using the **SYSTEM** switches and **GROUP** switches. If the Scan function has been programmed, switch this function ON or OFF as required.
- 4 When you hear the other party's voice, adjust the volume as necessary.

■ Placing a Dispatch Call

- 1 Select the system and group that you want to call by using the **SYSTEM** switches and **GROUP** switches.
- 2 Press the **PTT** switch.
- 3 If the busy tone or intercept tone does not sound, communication is possible; start speaking into the microphone. For best results, hold the microphone 1 to 1.5 inches from your mouth. Release the **PTT** switch when your message is complete and listen for a response. Press the **PTT** switch to talk; release it to listen.
- 4 When your conversation is finished, return the microphone to its hanger.

■ Placing a Telephone Call

Note: Telephone calls can be made only if that service is available and you have an optional keypad-equipped microphone. Consult your dealer for details.

- 1 Select the desired system and group that you want to call by using the **SYSTEM** switches and **GROUP** switches.
- 2 Hold down the **PTT** switch for a moment (1 second) to ensure a connection.
- 3 Release the **PTT** switch and confirm that you hear a dial tone from the repeater.
- 4 Dial by using the microphone keypad. After dialing, wait for a response from the other party.
- 5 When the other party responds, press the **PTT** switch and start speaking. For best results, hold the microphone 1 to 1.5 inches from your mouth. Release the **PTT** switch to listen to the other party. Only one person can speak at a time.
- 6 To end the call, press the # key.

■ Receiving a Telephone Call

- 1 Select the system and group by using the **SYSTEM** switches and **GROUP** switches. If the Scan function has been programmed, switch this function ON or OFF as required.
- 2 When you receive an incoming telephone call, you will hear a ringing tone from the speaker.
- 3 Hold down the **PTT** switch to speak and release it to listen to the other party.
- 4 To end the call, press the # key.

CONVENTIONAL OPERATION

■ Receiving

- 1 Switch ON the transceiver.
- 2 Press the **VOLUME Up/Down** switches to set the volume level. Use the volume level tones as guides.
- 3 Select the system and group by using the **SYSTEM** switches and **GROUP** switches. If the Scan function has been programmed, switch this function ON or OFF as required.
- 4 When you hear the other party's voice, adjust the volume as necessary.

■ Transmitting

***Note:** Before transmitting, you must monitor the channel to make sure that it is not already in use. If the selected group is not equipped with QT or DQT, monitoring is done by simply listening for anyone talking before you begin transmitting. It is not necessary to take the microphone off hook to monitor the channel. If the selected group is equipped with QT or DQT (as advised by your dealer), take the microphone off hook to disable the QT or DQT. Then if the channel is busy, you will hear the conversation.*

- 1 Select the system and group that you want to call by using the **SYSTEM** switches and **GROUP** switches.
- 2 Before starting to transmit, monitor the selected group to check if it is free (see **Note** above). If the group is busy, wait until it is free.
- 3 Press the **PTT** switch and start speaking. For best results, hold the microphone 1 to 1.5 inches from your mouth. Release the **PTT** switch when your message is complete and listen for a response. Press the **PTT** switch to talk; release it to listen.
- 4 When your conversation is finished, return the microphone to its hanger.

AUDIBLE USER FEEDBACK TONES

The transceiver outputs various tones to notify the user of the transceiver's operating status.

■ Busy Tone

The busy tone is similar to a telephone busy tone. The tone is output when all repeaters in the system are being used. The tone stops when transmission becomes possible or the **PTT** switch is released.

■ Intercept Tone

The intercept tone is similar to a "high-low" siren. The tone sounds when the transceiver is out of the system service area and a repeater cannot be reached. The intercept tone stops when the **PTT** switch is released.

■ Volume Level Tone

The volume level tone is the same as the busy tone. The tone sounds each time a **VOLUME Up/Down** switch is pressed while the transceiver is in receive mode. The volume of the tone increases and decreases as the volume is adjusted.

■ Proceed Tone

This tone is a short beep. It is available when the Clear-to-Talk function has been set for the transceiver. "Clear-to-Talk" simply means the repeater system is ready to begin handling your telephone call after you have connected successfully with a repeater.

SYSTEM SCAN

■ General

If the Scan function is programmed for the transceiver, systems can be scanned by using the **SCAN** switch. When the **SCAN** switch is pressed, the "S" indicator and "- SCAN -" appear on the display, and scanning starts. Systems that are not locked out of the scan sequence are scanned. When a call is received, scanning stops and the system and group digits appear. You then respond to the call by pressing the **PTT** switch. Lifting the microphone from its hanger (off hook) stops scanning unless your dealer has programmed your transceiver to ignore an off hook condition.

The transceiver continues scanning after an adjustable time delay when the **PTT** switch is released, and no signal is being received.

■ Scanning Trunked Systems

When scanning trunked systems, revert groups (see Scan Revert below) in each system as well as groups not locked out of the scan sequence are scanned. Refer to GROUP SCAN {page 14}.

■ Scanning Conventional Systems

When scanning conventional systems, only the revert groups (channels) in each system are scanned.

■ Scan Lockout

If the **AUX** (Auxiliary) switch is programmed for the scan lockout function, each system can be locked out of the scan sequence manually by the user.

■ Scan Revert

Scan revert refers to the revert systems and groups being scanned. You can select revert systems and groups by using the **SYSTEM** switches and **GROUP** switches. There are 2 types of scan revert that are programmable by your dealer. One is called Last Call Revert. The last system/group received is assigned as the new revert system and group. The second type of scan revert is called Last Use Revert. The system and group to which you last responded is assigned as the new revert system and group.

GROUP SCAN

The Group Scan function is available only for trunked systems. This function is useful if more than one group is programmed in systems. The Group Scan function is set by the dealer on request. It scans not only groups that are allowed to be scanned but also the revert groups. When a call is received, the group indicator shows the group number and that group becomes the revert group. Simply press the **PTT** switch to respond to the call. As with System Scan, lifting the microphone from its hanger (off hook) stops scanning unless your dealer has programmed your transceiver to ignore an off hook condition.

TIME-OUT TIMER

The time-out timer stops continuous transmissions automatically after a specified time elapses. The dealer sets the time in the range of 15 seconds to 10 minutes. If you hold down the **PTT** switch for longer than the programmed time, an alert tone sounds when the timer expires. The tone stops after the **PTT** switch is released.

HORN ALERT

If Horn Alert has been installed by your dealer, this function sounds the vehicle horn or some other type of external alert when certain calls are received. It is programmed like the CALL indicator to sound when specific group IDs or calls are received.

If the **AUX** switch is programmed to control Horn Alert, then this function can be activated or deactivated with this switch. The Auxiliary indicator appears when Horn Alert is activated.

KENWOOD

WARRANTY ON LAND MOBILE RADIOS AND ACCESSORIES

Kenwood Communications Corporation ("KENWOOD") warrants its Land Mobile Radios and accessories, as follows:

HOW LONG IS THE WARRANTY

This Warranty will remain in effect for two (2) years for radios, and one (1) year for accessories (including rechargeable batteries), measured from the date of purchase by the first end user.

WHO IS PROTECTED

This Warranty is enforceable only by the first end user.

WHAT IS COVERED

Except as specified below, this Warranty covers all defects in materials and workmanship in KENWOOD Land Mobile Radios and accessories. The following are not covered by the Warranty.

1. Damage, deterioration or failure resulting from:
 - A. Accident, misuse, abuse, neglect, product modification or failure to follow instructions contained in your Owner's Manual.
 - B. Repair or attempted repair by anyone not authorized by KENWOOD.
 - C. Installation of parts or accessories that do not conform to the quality or specifications of the original parts or accessories.
 - D. Installation of the product in, or removal of the product from, the vehicle or other site of its use.
2. Damage or loss occurring during shipment (claims must be presented to the carrier).
3. Any unit which is not new when sold to the first end user or upon which the serial number has been defaced, modified or removed.

WHAT WE WILL PAY FOR AND WHAT YOU MUST PAY FOR

KENWOOD will pay all labor and material expenses for items covered by this Warranty. If it is necessary to ship the product for Warranty service, you are responsible for the initial shipping charges, but we will pay the return shipping charges if the product is repaired or replaced under Warranty. You are responsible for any charges incurred in removing the product from the vehicle or other site of use and for reinstallation of the repaired or replaced product.

HOW TO OBTAIN WARRANTY SERVICE

Your KENWOOD Land Mobile Radio or accessory may be serviced by any authorized KENWOOD Land Mobile dealer or service center. Whenever the product is presented for warranty service, you must supply a sales receipt or other evidence of the date of purchase.

EXCLUSION OF IMPLIED WARRANTIES AND DAMAGES

Unless considered unlawful or unenforceable under applicable law:

- A. ALL IMPLIED WARRANTIES WITH RESPECT TO KENWOOD LAND MOBILE RADIOS AND ACCESSORIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, HEREBY ARE EXCLUDED.
- B. KENWOOD'S LIABILITY UNDER THIS WARRANTY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT, AT KENWOOD'S OPTION, OF ANY DEFECTIVE PRODUCT, AND SHALL NOT INCLUDE DAMAGES OF ANY KIND, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.

This Warranty is enforceable only in the United States of America.

If a problem develops during or after the Limited Warranty Period, or if you have any questions regarding the operation of the product, you should contact your KENWOOD Authorized Dealer or Authorized Service Center. If the problem or your question is not handled to your satisfaction, please contact our Customer Relations Department at the address listed below:

For customers outside U.S.A. or Canada who purchase this product, please contact your local authorized dealer.

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