

KENWOOD

TK-430/TK-431

800MHz/900MHz FM TRANSCEIVER

INSTRUCTION MANUAL

TRANSCEIVER 800MHz/900MHz FM

MODE D'EMPLOI

TRANSCPTOR 800MHz/900MHz FM

MANUAL DE INSTRUCCIONES

KENWOOD CORPORATION

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PRINTED IN JAPAN B85-0585-10(MC)(SHU)
2015.11.10.8

INTRODUCTION

Your two-way transceiver has been designed to provide dependable communications, and is intended to operate in the VHF and UHF frequency ranges.

All KENWOOD transceivers are designed to operate in the VHF and UHF frequency ranges. The transceiver is designed to operate in the VHF and UHF frequency ranges. The transceiver is designed to operate in the VHF and UHF frequency ranges.

The instruction manual covers the following topics:
 1. Introduction
 2. Safety
 3. Unpacking and Checking Equipment
 4. Installing the Battery Pack
 5. Operation
 6. Controls and Functions
 7. Trunked Operation
 8. Receiving a Dispatch Call
 9. Placing a Dispatch Call
 10. Placing a Telephone Call
 11. Receiving a Telephone Call
 12. Conventional Operation
 13. To Transmit
 14. To Receive
 15. Audible User Feedback Tones
 16. Busy Tone
 17. Intercept Tone
 18. Volume Level Tone
 19. Processed Tone

The manual identifies the features of the above versions.

IMPORTANT:

GOVERNMENT LAW PROHIBITS THE OPERATION OF UNLICENSED RADIO TRANSMITTERS WITHIN THE TERRITORIES UNDER GOVERNMENT CONTROL. ILLEGAL OPERATION IS PUNISHABLE BY IMPRISONMENT OR BOTH. REFER SERVICE TO A QUALIFIED LICENSED OR CERTIFIED TECHNICIAN ONLY.

SAFETY

It is important that the operator understands and is aware of hazards common to the operation of any two-way radio.

WARNING:

EXPLOSIVE ATMOSPHERES ARISE IN CERTAIN AREAS. Turn off and do not operate your transceiver while taking on fuel, or while parked in gasoline service stations.

800MHz FM TRANSCEIVER

TK-430

900 MHz FM TRANSCEIVER

TK-431

INSTRUCTION MANUAL

Notice to the user:



- ATTENTION: A U.S. LICENSEE must be present to operate this equipment. The following instructions must be followed:
- 1. Read the instruction manual carefully before operating the equipment.
 - 2. Do not use the equipment in areas where it is prohibited by law.
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■ INTRODUCTION

Your two-way transceiver has been designed to provide dependable communications, and is simple and easy to operate.

All KENWOOD transceivers incorporate the latest in advanced technology, providing communications that can be counted on to keep vehicles and personnel operating at peak efficiency.

This instruction manual covers the following radios:

TK-430 / TK-431:UHF FM TRANSCEIVER

This manual identifies and describes differences between the above versions.

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.

■ SAFETY

It is important that the operator understands and is aware of hazards common to the operation of any two-way radio.

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.

Notice to the user:



ATTENTION (U.S.A. Only)

Nickel-Cadmium batteries must be recycled or disposed of properly. State laws may vary regarding the handling and disposal of Nickel-Cadmium batteries.

Please contact your Authorized KENWOOD Dealer for more information.

One or more of the following statements may be applicable to this equipment.

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 into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer for technical assistance.*

■ 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. It is recommended that you identify the items listed and check them off before discarding the packing material. If any damage has occurred to the equipment during shipment, file a claim with the carrier immediately.

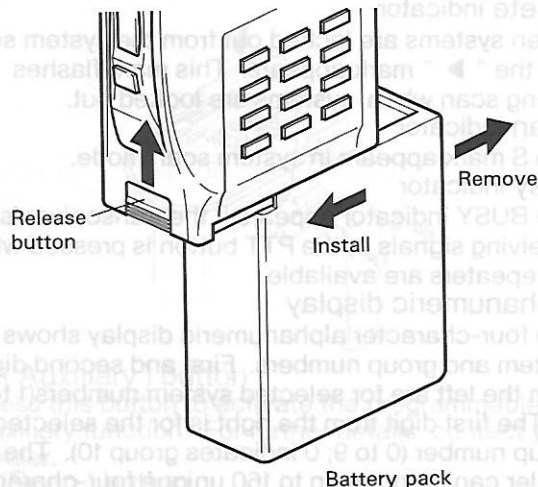
TK-430 / TK-431 EQUIPMENT

Two-way transceiver	1	ea.
Antenna (TK-430) (K ONLY) (T90-0456-XX)	1	ea.
or		
Antenna (TK-431) (K ONLY) (T90-0459-XX)	1	ea.
NiCd battery pack (W09-0813-XX)	1	ea.
Belt hook (J29-0424-XX)	1	ea.
Screw set (N99-0375-XX)	1	ea.
Strain relief (J11-0427-XX)	1	ea.
Instruction manual (B62-0285-XX)	1	copy

■ INSTALLING THE BATTERY PACK

Align the grooves in the battery pack with the transceiver and slide the pack to the left until it locks in place.

To remove the battery pack push up on the release button and slide the pack to the right.



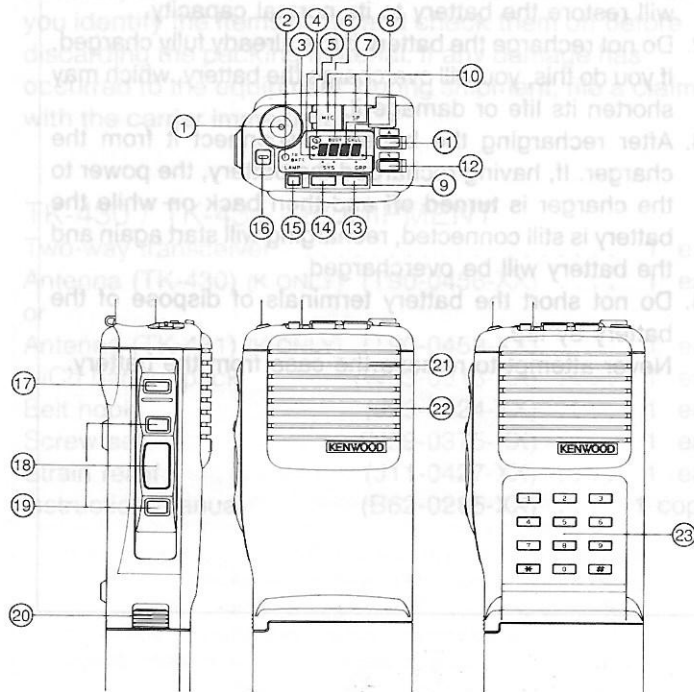
Caution:

1. The battery pack is not charged at the factory. Charge the pack before use.
If after purchase or extended storage (greater than 2 months), battery capacity is found to be low, the battery needs recharging.
Repeating the charge/discharge cycle two or three times will restore the battery to its normal capacity.
2. Do not recharge the battery if it is already fully charged. If you do this, you will overcharge the battery, which may shorten its life or damage it.
3. After recharging the battery, disconnect it from the charger. If, having recharged the battery, the power to the charger is turned off and then back on while the battery is still connected, recharging will start again and the battery will be overcharged.
4. Do not short the battery terminals or dispose of the battery by fire.
Never attempt to remove the case from the battery.

■ OPERATION

This transceiver can handle up to 16 systems, with up to 10 groups in each system. The transceiver can be used in both trunked mode and conventional mode. Systems, groups and their functions are programmed by the dealer on request.

○ CONTROLS AND FUNCTIONS



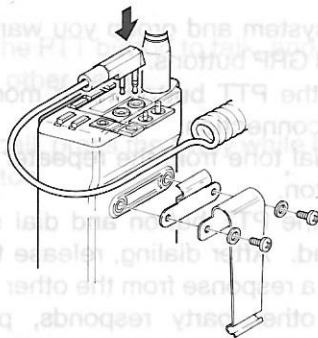
- ① **ANTENNA connector**
The supplied antenna is plugged into this connector.
- ② **TRANSMIT/BATTERY LOW indicator**
The red LED lights during transmission. If this LED flashes during transmission, recharge the battery.
- ③ **Auxiliary (Left) indicator**
The "." mark appears on the LCD display when the function programmed by your dealer is enabled.
- ④ **Delete indicator**
When systems are locked out from the system scan list, the "▶" mark appears. This mark flashes during scan when systems are locked out.
- ⑤ **Scan indicator**
The S mark appears in system scan mode.
- ⑥ **Busy indicator**
The BUSY indicator appears if the transceiver is receiving signals or the PTT button is pressed while no repeaters are available.
- ⑦ **Alphanumeric display**
The four-character alphanumeric display shows the system and group numbers. First and second digits from the left are for selected system numbers (1 to 16). The first digit from the right is for the selected group number (0 to 9; 0 indicates group 10). The dealer can program up to 160 unique four-character group names to replace system and group numbers.
- ⑧ **CALL indicator**
The CALL indicator goes on when a call for a specified group is received. This indicator goes off when the PTT button is pressed to respond to the call, or when any button except LAMP, is pressed.

⑨ **Auxiliary (Right) indicator**

The "." mark appears on the LCD display when the function programmed by your dealer is enabled.

⑩ **EXTERNAL SPEAKER - MICROPHONE jack**

The optional external speaker-microphone plugs into this jack. Attach the strain relief under the belt clip on the rear of the transceiver with the supplied screws, referring to the figure below.



⑪ **A (Auxiliary) button**

Press this button to activate the programmable auxiliary function. For further details, contact your dealer.

⑫ **S (Scan) button**

Press this button to activate the system scan function.

⑬ **GRP (Group) button**

Press this button to increment the group number. Hold down the button to step upwards continuously. The transceiver steps to the highest group number,

⑭ **SYS (System) button**

This button works the same as the Group button. As the system number is changed, the group number last selected in each system is displayed.

⑮ **LAMP button**

This button illuminates the LCD display on the top panel. Press this button to light the display. The lamp goes off about five seconds after releasing the button. Pressing the A, S, SYS or GRP button while the lamp is on, restarts the five second timer.

⑯ **Power button**

Press and hold to turn the power on and off.

⑰ **MONITOR button**

This button is used to monitor a channel before starting to transmit on a conventional system.

⑱ **PTT (Push-To-Talk) button**

Press this button, then begin speaking into the microphone.

⑲ **VOLUME UP / DOWN buttons**

The buttons above and below the PTT button are the volume control buttons. Press the button above the PTT button to increase the volume by one step. Press the button below the PTT button to decrease the volume by one step. Hold down either button to step the volume repeatedly.

⑳ **BATTERY RELEASE button**

Push up to release. See INSTALLING THE BATTERY PACK (Page 7)

㉑ **Built-in MICROPHONE**

㉒ **Built-in SPEAKER**

㉓ **Telephone Keypad [with optional KDM-6 keypad only (K, K2)]**

Press any key on the keypad to output different DTMF("telephone") tones.

■ TRUNKED OPERATION

○ Receiving a dispatch call

1. Switch the radio on. Press the VOLUME UP or DOWN button to set the volume level. Use the volume level tones as guides.
2. Press the SYS and GRP buttons to set the system and group. (If the scan feature has been programmed, turn the scan on or off as required.)
3. When you hear the other party's voice, adjust the volume as necessary.

○ Placing a dispatch call

1. Select the system and group you want to call using the SYS and GRP buttons.
2. Press the PTT button.
3. If the busy tone or intercept tone does not sound, communication is possible; start talking. The distance between the microphone and your mouth should be 1 to 1.5 inches to give good sound quality.

○ Placing a telephone call

Note : To make a telephone call, the optional KDM-6 telephone keypad is required. Ask your dealer for details.

1. Select the system and group you want to call using the SYS and GRP buttons.
2. Hold down the PTT button for a moment(1 second) to ensure a connection.
3. Confirm a dial tone from the repeater after releasing the PTT button.
4. Hold down the PTT button and dial using the front panel keypad. After dialing, release the PTT button and wait for a response from the other party.
5. When the other party responds, press the PTT button and start talking. Release the PTT button to listen to the other party. Only one person can speak at a time.
6. To end the call, press the # key while holding down the PTT button.

○ Receiving a telephone call

1. Select the system and group using the SYS and GRP buttons. (If the scan feature has been programmed, turn the scan on or off as required.)
2. You will hear the ringing tone from the speaker.
3. Hold down the PTT button to talk, and release it to listen to the other party.
4. To end the call, press the # key while holding down the PTT button.

■ CONVENTIONAL OPERATION

○ To receive

1. Switch the radio on. Press the VOLUME UP or DOWN button to set the volume level. Use the volume level tones as guides.
2. Press the SYS and GRP buttons to set the system and group. (If the scan feature has been programmed, turn the scan on or off as required.)
3. When you hear the other party's voice, adjust the volume as necessary.

○ To transmit

1. Select the system and group you want to call using the SYS and GRP buttons.
2. Before starting transmission, press the MONITOR button and check whether the channel is free. If the channel is busy, wait until the channel becomes free.
3. Press the PTT button and start talking.

■ AUDIBLE USER FEEDBACK TONES

The transceiver outputs various tones to notify the user of the radio'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 button 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 button is released.

☐ Volume level tone

The volume level tone is the same as the busy tone. The tone sounds each time the VOLUME UP or DOWN button 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, and is available when the clear-to-talk feature 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 feature is programmed for the transceiver, systems can be scanned using the S button. When the S button is pressed, the "S" indicator appears on the display, and scan starts. Systems that are not locked out of the scan sequence are scanned. A dash(-) appears on both the system and group displays during scan. When a call is received, scan stops and the system and group digits appear. You then respond to the call by pressing the PTT button.

The transceiver continues scanning after an adjustable time delay as follows:

- a) The PTT button is released and,
- b) No further signal is received.

☐ Scanning trunked systems

When scanning trunked systems, both revert groups(see Page 13, Scan revert) in each system and groups not locked out of the scan sequence are scanned. See Page 13, GROUP SCAN.

☐ Scanning conventional systems

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

☐ Scan lockout

If the A (Auxiliary) button is programmed for the scan lockout feature, 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 using the SYS and GRP buttons. There are two 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 feature is available only for trunked systems. This feature is useful if more than one group is programmed in systems. The group scan feature is set by the dealer on request. It scans not only groups which 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 button to respond to the call.

■ 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 button for longer than the programmed time, an alert tone sounds when the timer expires. The tone stops after the PTT button is released.

■ GROUP SCAN ■

The group scan feature is available only for trunked systems. This feature is useful if more than one group is programmed in systems. The group scan feature is set by the dealer on request. It scans not only groups which are allowed to be scanned but also the revert groups.

○ Busy tone

The busy tone is a continuous tone sound which is received when a call is received. The group indicator shows the group number and that group becomes the revert group. Simply press the PTT button to respond to the call.

■ Time-out Timer ■

The time-out timer is similar to a "high-low" tone. 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 button for longer than the programmed time, an alert tone sounds when the timer expires. The tone stops after the PTT button is released.

○ Volume level

The volume level is a feature which allows the dealer to adjust the volume of the tone sound when the PTT button is pressed. The volume of the tone increases and decreases as the volume is adjusted.

○ Proceed tone

This tone is a short beep, and is available when the clear-to-talk feature has been set for the transceiver. "Clear-to-talk" simply means the repeater system is ready to handle your telephone call after you have connected with a repeater.

■ SYSTEM SCAN ■

○ General

When scanning conventional systems, only the revert group (channel) in each system is scanned. If the PTT button is pressed, the "S" indicator appears on the display, and scan starts. Systems that are not locked out of the scan sequence are scanned.

○ Scan lockout

If the A (Auxiliary) button is programmed for the scan lockout feature, each system can be locked out of the scan sequence manually by the user. When a scan lockout occurs, the scan sequence is delayed until the PTT button is pressed. The transceiver continues scanning after an adjustable time delay as follows:

○ Scan revert

Scan revert refers to the revert systems and groups being scanned. You can select revert systems and groups using the SYS and GRP buttons. There are two types of scan revert that are programmable by your dealer. One is called Last Call Revert. The last system/group received as the new revert is assigned as the new revert.

○ Scanning trunked systems

When scanning trunked systems, the last system/group received as the new revert is assigned as the new revert. The second type of scan revert is called Last Use Revert. The system and group which you last responded to as the new revert system and group are assigned as the new revert system and group.

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