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2.1033(c)(3) MANUAL

KENWOOD

INSTRUCTION MANUAL

VHF FM TRANSCEIVER

TK-280

UHF FM TRANSCEIVER

TK-380

KENWOOD CORPORATION
© B62-0967-00 (K)
09 08 07 06 05 04 03 02 01 00

THANK YOU

We are grateful you chose **KENWOOD** for your land mobile radio 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 the quality and features of this product.

MODELS COVERED BY THIS MANUAL

- TK-280: VHF FM Transceiver
- TK-380: UHF FM Transceiver

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 OR IMPRISONMENT OR BOTH.*
- *REFER SERVICE TO QUALIFIED TECHNICIANS ONLY.*

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 your transceiver while taking on fuel, or while parked in gasoline service stations.

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.*

ATTENTION (U.S.A. only):

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

Please contact your authorized KENWOOD dealer for more information.

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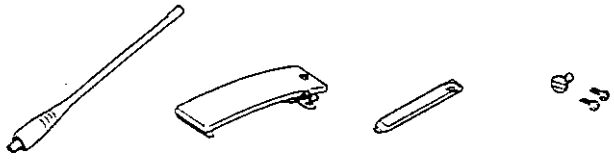
UNPACKING AND CHECKING EQUIPMENT

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 following table before discarding the packing material. If any items have been damaged during shipment, file a claim with the carrier immediately.

■ Supplied Accessories

Item		Part Number	Quantity
NiCd battery pack		W09-0900-XX	1
Flexible antenna	TK-280 (M)	T90-0679-XX	1
	TK-380 (M)	T90-0682-XX	
	TK-380 (M3)	T90-0684-XX	
Belt clip		J29-0618-XX	1
Univeral connector cap		B09-0363-XX	1
Screw set		N99-2004-XX	1
Warranty card		—	1
Instruction manual		B62-0967-XX	1



Flexible antenna | Belt clip | Universal connector cap | Screw set (1)

PREPARATION

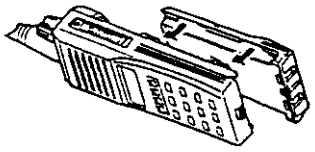
Installing/ Removing the NiCd Battery Pack

Note: Remove the battery pack from the transceiver and take out the insulating paper before using.

CAUTION:

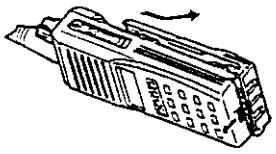
- *DO NOT RECHARGE THE BATTERY PACK IF IT IS ALREADY FULLY CHARGED. DOING SO MAY CAUSE THE LIFE OF THE BATTERY PACK TO SHORTEN OR THE BATTERY PACK MAY BE DAMAGED.*
- *AFTER RECHARGING THE BATTERY PACK, DISCONNECT IT FROM THE CHARGER. IF THE CHARGER POWER IS RESET (TURNED ON AFTER BEING TURNED OFF), RECHARGING WILL START AGAIN AND THE BATTERY PACK WILL BECOME OVERCHARGED.*
- *DO NOT SHORT THE BATTERY TERMINALS OR DISPOSE OF THE BATTERY BY FIRE.*
- *NEVER ATTEMPT TO REMOVE THE CASING FROM THE BATTERY PACK.*

1 Match the four grooves of the battery pack with the corresponding guides on the back of the transceiver.



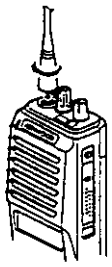
2 Slide the battery pack along the back of the transceiver until the release latch on the base of the transceiver locks.

3 To remove the battery pack, pull back on the release latch and slide the pack away from the transceiver.



■ Installing the Antenna

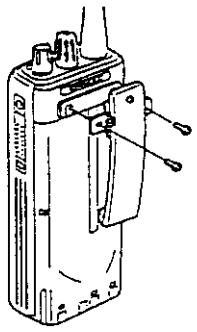
Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.



■ Installing the Belt Clip

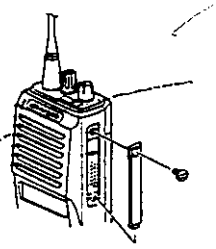
If necessary, attach the belt clip using the two supplied 3 x 6 mm screws.

Note: *If the belt clip is not installed, its mounting location may get hot during continuous transmission or when left sitting in a hot environment.*



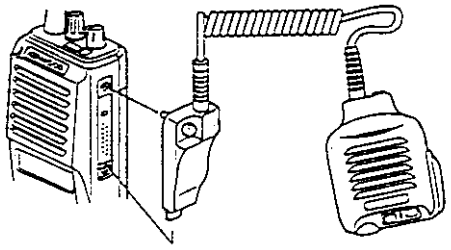
■ Installing the Cover over the Universal Connector

If you are not using a speaker/ microphone, install the cover over the univeral connector using the supplied 4 x 6 mm screw.



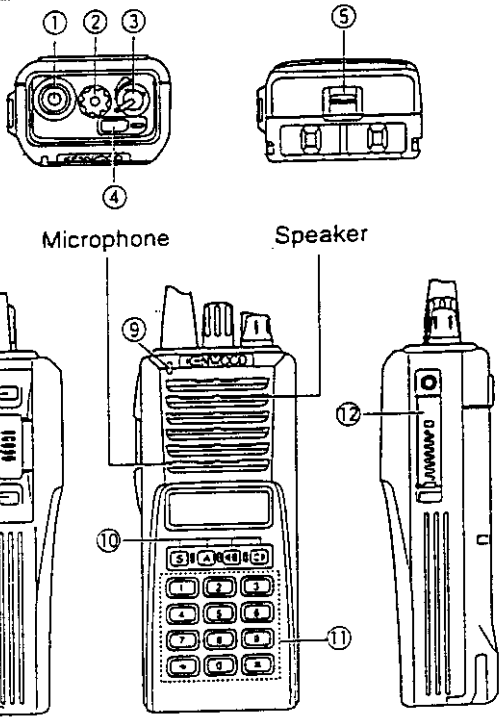
■ Installing the (Optional) Speaker/ Microphone

1 Insert the guide of the speaker/ microphone connector into the groove of the universal connector.



2 Secure the connector in place using the attached screw.

GETTING ACQUAINTED



Note: The transceiver is also available without the DTMF keypad (⑪).

① Antenna connector
Connect the supplied antenna here.

② Rotary encoder
Rotate this control to activate its programmable functions. For further details, contact your dealer.

③ **POWER switch/ VOLUME control**
Turn clockwise to switch ON the transceiver. Rotate to adjust the volume. Turn counterclockwise fully to switch OFF the transceiver.

④ **Auxiliary (orange) key**
Press to activate its auxiliary function {page 8}.

⑤ **Battery pack release latch**
Pull back on this latch to release the battery pack. See "Installing/ Removing the NiCd Battery Pack" on page 2.

⑥ **PF (Programmable Function) key**
Press to activate its auxiliary function {page 8}.

⑦ **PTT (Push-To-Talk) switch**
Press this switch, then speak into the microphone to call a station.

⑧ **PF (Programmable Function) key**
Press to activate its auxiliary function {page 8}.

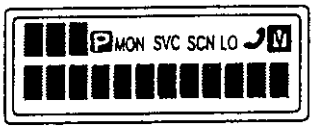
⑨ **Transmit/ Battery low indicator**
This red LED lights during transmission. If it flashes during transmission, the battery pack power is low. Replace or recharge the battery pack.

⑩ **S, A, ◀B, and C▶ keys**
Press to activate their auxiliary functions {page 8}.

⑪ **DTMF keypad (keypad models only)**
Press the keys on the keypad to send DTMF tones.

⑫ **Universal connector**
Connect an external speaker/ microphone (optional) here. Otherwise, keep the supplied cover in place.

■ Display



Indicator	Description
[illegible]	Displays the system, channel and group numbers. Also displays various functions which have been programmed by your dealer.
P	Appears when the selected channel is programmed as priority (Conventional Format).
MON	Appears when the key programmed as Monitor is pressed.
SVC	This icon is not used on this transceiver.
SCN	Appears when you are using the System Scan mode.
LO	Appears when the key programmed as RF Power Lo is pressed.
	Appears when the selected group is programmed as telephone IDs.
M	Appears and flashes when receiving a status message and when a message is in the stack. Contact your dealer for more information.
[illegible]	Displays the system, group, and channel numbers. Your dealer can program group and channel names with up to 10 characters, in place of numbers. The left display is used as a delete indicator (▼) in Trunking Format and an add indicator (▼) in Conventional Format. The right display is used for the Selective Call (✳) or Scrambler (_) function. The delete/ add indicators show the systems that are locked/ not locked out of the scanning sequence. Selective Call and Scrambler are optional functions that can be programmed by your dealer.

PROGRAMMABLE AUXILIARY FUNCTIONS

Keys ④, ⑤, ⑧, and ⑩ (page 5) can be programmed with the auxiliary functions listed in the following table. The keys can only be programmed with functions, depending on whether you are using Conventional Format or Trunking Format. Please contact your dealer for further details on these functions.

Note: *If "Function" is programmed onto one of the above mentioned keys, the DTMF keypad (keypad models only) can also be used for additional programmable keys.*

Function	Conventional Format	Trunking Format
Auto Tel	No	Yes
AUX [1]	No	Yes
Channel Down	Yes	No
Channel Up	Yes	No
Connect ID	Yes	Yes
Disconnect ID	Yes	Yes
Display Character	Yes	Yes
Emergency	Yes	Yes
Function	Yes	Yes
Group Down	Yes	Yes
Group Up	Yes	Yes
Home Channel	Yes	No
Home Group	No	Yes
Key Lock	Yes	Yes
Lamp	Yes	Yes
Memory (RCL/STO)	Yes	Yes

Function	Conventional Format	Trunking Format
Memory (RCL)	Yes	Yes
Memory (STO)	Yes	Yes
Monitor A (Monitor Unmute (Momentary))	Yes	Yes
Monitor B (Monitor Unmute (Toggle))	Yes	Yes
Monitor C (Carrier Squelch (Momentary))	Yes	Yes
Monitor D (Carrier Squelch (Toggle))	Yes	Yes
Operator Sel Tone	Yes	No
Redial	Yes	Yes
RF Power Lo	Yes	Yes
Scan	Yes	Yes
Scan Del/Add	Yes	Yes
Scan Temporary Delete	No	Yes
System Down	No	Yes
System Up	No	Yes
Scrambler [2]	Yes	Yes
Talk Around	Yes	No
TEL Disconnect	No	Yes

[1] This function can be selected only when the Scrambler/ ANI board has not been installed.
[2] This function can be selected only when the Scrambler/ ANI board has been installed.

OPERATING BASICS

■ Switching Power ON/ OFF

Turn the **Power** switch/ **Volume** control clockwise to switch ON the transceiver.

Turn the **Power** switch/ **Volume** control counterclockwise to swith OFF the transceiver.

■ Adjusting the Volume

Rotate the **Power** switch/ **Volume** control to adjust the volume. Clockwise increases the volume and counterclockwise decreases it.

■ Selecting a System/ Group/ Channel

Select the desired system and group (Trunking Format) using the **System/ Group** encoder and keys.

Select the desired group and channel (Conventional Format) using the **Group/ Channel** encoder and keys.

■ Time-out Timer (TOT)

The purpose of the Time-out Timer is to prevent any single person from using a channel for an extended period of time.

If you continuously transmit for a period of time that exceeds the programmed time, the transceiver will stop transmitting and an alert tone will sound. To stop the tone, release the PTT switch.

Your dealer can program the TOT time in the range of 15 seconds to 10 minutes.

OPERATION OVERVIEW

Your dealer can program your transceiver for either Trunking Format of Conventional Format.

■ Trunking Format

This format can handle up to 32 systems with up to 250 groups in each system. The transceiver can be used in both trunked mode and conventional mode. Systems, groups, and their functions are programmed by your dealer.

■ Conventional Format

This format can handle up to 250 groups with 250 channels in each group. The transceiver can be used only in conventional mode. Groups, channels, and their functions are programmed by your dealer.

TK-290/380 E 01-22 11 98.11.4, 12:00

TRUNKED OPERATION (Trunking Format)

■ Placing a Dispatch Call

1 Select the desired system and group using the **System/ Group** encoder and keys.

2 Press the PTT switch.

3 If the busy tone or intercept tone does not sound, communication is possible; start speaking.

- For best sound quality at the receiving station, place your mouth approximately 1.5 inches (3 ~ 4 cm) from the microphone.

■ Receiving a Dispatch Call

1 Switch ON the transceiver.

2 Set the volume level to about 1/2.

3 Select the desired system and group using the **System/ Group** encoder and keys. (If the Scan function has been programmed, it can be turned ON if desired.)

4 When the dispatcher's voice is heard, adjust the volume as necessary.

■ Placing a Telephone Call

1 Select the desired system and group using the **System/ Group** encoder and keys.

2 Press and hold the PTT switch for approximately 1 second to ensure a connection.

3 Confirm that there is a dial tone from the repeater after releasing the PTT switch.

4 Press and hold the PTT switch, then dial using the front panel keypad.
   - After dialing, release the PTT switch and wait for a response from the called party.

5 When the called party responds, press the PTT switch and speak into the microphone. Release the PTT switch to receive.
   - Only one person can speak at a time.

6 To end the call, press and hold the PTT switch, then press the # key or the key programmed as **Tel Disconnect**.

■ Receiving a Telephone Call

1 Select the desired system and group using the **System/ Group** encoder and keys. (If the Scan function has been programmed, it can be turned ON if desired.)
   - A ringing tone will sound when a call is received.

2 Press and hold the PTT switch to speak, and release it to listen.
   - Only one person can speak at a time.

3 To end the call, press and hold the PTT switch, then press the # key or the key programmed as **Tel Disconnect**.

CONVENTIONAL OPERATION (Trunking Format)

■ Transmitting

1 Select the desired system and group using the **System/ Group** encoder and keys.

2 Press the key programmed as **Monitor** to check whether or not the channel is free.

- If the channel is busy, wait until it becomes free.

3 Press the PTT switch and speak into the microphone.

■ Receiving

1 Switch ON the transceiver.

2 Set the volume level to about 1/2.

3 Select the desired system and group using the **System/ Group** encoder and keys. (If the Scan function has been programmed, it can be turned ON if desired.)

4 When the dispatcher's voice is heard, adjust the volume as necessary.

SYSTEM SCAN (Trunking Format)

■ General

If the Scan function is programmed, systems can be scanned by pressing the key programmed as **Scan**. When it is pressed, the SCN indicator and "-SCAN-" or the revert system/ group number, appear on the display and scanning starts. The systems not locked out of the scanning sequence are scanned.

When a call is received, scanning stops and the system and group digits appear. Press the **PTT** switch and speak into the microphone to respond to the call. The transceiver will continue scanning after an adjustable time delay if the **PTT** switch is released and no further signal is received.

■ Scanning Trunked Systems

When scanning trunked systems, the revert groups and the groups not locked out of the scanning sequence are scanned. See "GROUP SCAN" on page 17.

■ Scanning Conventional Systems

When scanning conventional systems, the revert groups and the groups not locked out of the scanning sequence are scanned. See "GROUP SCAN" on page 17.

Scan Lockout

If a programmable auxiliary key is programmed with Scan Lockout, each system can be locked out of the scan sequence manually. The delete indicator will appear in the left hand display when the system displayed is locked out.

Scan Revert

Scan Revert refers to the revert systems and groups being scanned. You can select revert systems and groups using the **System/ Group** encoder and keys.

Three types of Scan Reverts which can be programmed by your dealer are available:

- **Last Called Revert:** The last system/ group received is assigned as the new revert system and group.
- **Last Used Revert:** The last system/ group responded to is assigned as the new revert system and group.
- **Last Selected:** The last system/ group selected is assigned as the new revert system and group.

GROUP SCAN (Trunking Format)

Group Scan is available for both trunked and conventional systems. This feature is useful when more than one group is programmed in a system. Group Scan is set by the dealer on request. It scans the revert groups as well as groups that are allowed to be scanned.

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.

Note: *Please contact your dealer for information concerning Priority Scan.*

CONVENTIONAL OPERATION (Conventional Format)

■ Transmitting

1 Select the desired group and channel using the **Group/ Channel** encoder and keys.

2 Press the key programmed as **Monitor** to check whether or not the channel is free.

- If the channel is busy, wait until it becomes free.

3 Press the **PTT** switch and speak into the microphone.

■ Receiving

1 Switch ON the transceiver.

2 Set the volume level to about 1/2.

3 Select the desired group and channel using the **Group/ Channel** encoder and keys. (If the Scan function has been programmed, it can be turned ON if desired.)

4 When a caller's voice is heard, adjust the volume as necessary.

SYSTEM SCAN (Conventional Format)

■ General

If the Scan function is programmed, groups or channels can be scanned by pressing the key programmed as **Scan**. The Scan function has a Single Scan or a Multi Scan. When the **Scan** key is pressed, the SCN indicator and "-SCAN-" or the revert group/ channel number, appear on the display and scanning starts.

When a call is received, scanning stops and the group and channel digits appear. Press the PTT switch and speak into the microphone to respond to the call. The transceiver will continue scanning after an adjustable time delay, if the PTT switch is released, and no further signal is received.

When the displayed group is not locked out of the scanning sequence, the add indicator (▼) will appear on the display.

■ Priority Scan

The priority channel must be programmed in order for Priority Scan to function.

When a signal is received on the priority channel, the transceiver will automatically change to that channel, even if it is receiving a signal on a different channel.

The [P] indicator appears when the displayed channel is the priority channel.

2-TONE SIGNALLING (Conventional Format)

2-Tone Signalling is either activated or disactivated by your dealer.

2-Tone Signalling only opens the squelch when the transceiver receives two tones corresponding to those set up in the transceiver. When the squelch opens, you will be able to hear the caller without any further action.

After a correct code is received and the squelch opens, pressing the key programmed as Monitor will cancel the connection.

If your dealer programmed Transpond for 2-Tone Signalling, your transceiver will automatically send an acknowledgment signal to the station that called when the correct tone is received. Transpond does not function when you are called with a Group code.

If your dealer programmed Tone Alert for 2-Tone Signalling, your transceiver will emit a beep when a correct tone is received.

Note: *This transceiver is only capable of decoding 2-Tone Signals. It cannot encode a 2-Tone Signal.*

AUDIBLE USER FEEDBACK TONES

The transceiver emits various tones to indicate the transceiver's operating status. Please contact your dealer for further information on these tones.

Tone	Conventional Format	Trunking Format
Alert	Yes	Yes
Busy	Yes	Yes
DBD On	Yes	Yes
DBD Off	Yes	Yes
Delay	No	Yes
Deny	No	Yes
Free System Ring Back Mode/ System Search Mode	No	Yes
Group Call	Yes	Yes
Individual Call	Yes	Yes
Intercept	No	Yes
Key Input Error	Yes	Yes
Key Press [A]	Yes	Yes
Key Press [B]	Yes	Yes
Key Press [C]	Yes	Yes
Password Agreement	Yes	Yes
Power ON	Yes	Yes
Pre Alert	Yes	No
Proceed	No	Yes
PTT Release	Yes	Yes
Queue	No	Yes

Tone	Conventional Format	Trunking Format
Ringing	No	Yes
Roll Over	Yes	Yes
System Search	No	Yes
System Search End	No	Yes
Transpond	Yes	Yes