INSTRUCTION MANUAL

KENWOOD

VHF FM TRANSCEIVER
TK-6110

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 the quality and features of this product.

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 a gasoline service station. 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 somebody is within two to three feet of the antenna, to avoid the possibility of radio frequency burns or related physical injury.

◆ **DYNAMITE BLASTING CAPS**
Turn OFF your transceiver when in an area where blasting is in progress, or where "TURN OFF TWO-WAY RADIO" signs have been posted. Operating the transceiver within 150 meters (500 feet) of dynamite blasting caps may cause them to explode. If you are carrying blasting caps in your vehicle, make sure they are enclosed in a metal box with a padded interior. Do not transmit while the caps are being placed into or are being removed from the container.

Note: *This instruction manual covers only the basic functions of the transceiver. Consult your dealer for more detailed information.*

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.*

CONTENTS

Note: *The following unpacking 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 are missing or have been damaged during shipment, file a claim with the carrier immediately.

■ Supplied Accessories

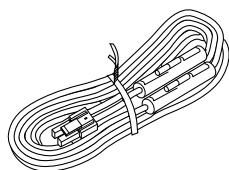| Item	Quantity
Microphone	1
Microphone hanger	1
Mounting bracket	1
Power cable assembly kit • Fuse (20 A)	1 set
Speaker short plug	1
Screw set	1
Instruction manual	1
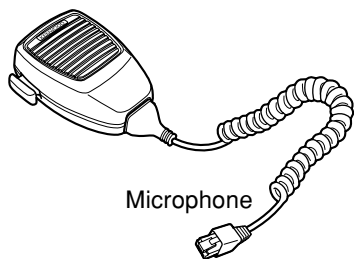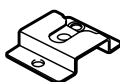
Microphone   Microphone hanger   Mounting bracket
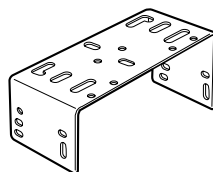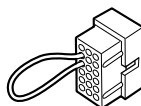
Power cable assembly kit   Speaker short plug   Screw set

PREPARATION

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

■ Tools Required

Note: *Before installing the transceiver, always check how far the mounting screws will extend below the mounting surface. When drilling mounting holes, be careful not to damage vehicle wiring or parts.*

The following tools are required for installing the transceiver:

- A 6 mm (1/4 inch) or larger electric drill.
- A 4.2 mm (5/32 inch) drill bit for the 5 x 16 mm self-tapping screws, and a 3.2 mm (1/8 inch) drill bit for the 4 x 16 mm self-tapping screws.
- Circle cutters.

■ Power Cable Connection

1 Check for an existing hole, conveniently located in the firewall, where the power cable can be passed through.

- If no hole exists, use a circle cutter to drill the firewall, then install a rubber grommet.

2 Run the two power cable leads through the firewall and into the engine compartment, from the passenger compartment.

3 Connect the red lead to the positive (+) battery terminal and the black lead to the negative (–) battery terminal.

- Locate the fuse as close to the battery as possible.

4 Coil and secure the surplus cable with a retaining band.

- Be sure to leave enough slack in the cables so the transceiver can be removed for servicing while keeping the power applied.
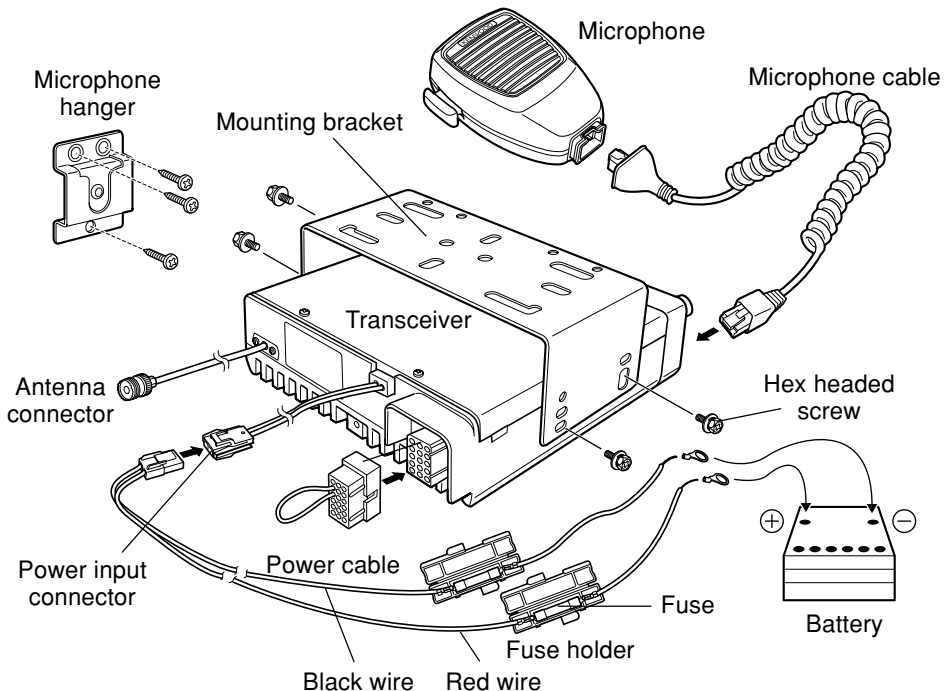
■ Installing the Transceiver

> **⚠ WARNING**
>
> *FOR PASSENGER SAFETY, INSTALL THE TRANSCEIVER SECURELY, USING THE SUPPLIED MOUNTING BRACKET, SO THE TRANSCEIVER WILL NOT BREAK LOOSE IN THE EVENT OF A COLLISION.*

1 Mark the position of the holes in the dash by using the mounting bracket as a template. Drill the holes, then attach the mounting bracket using the supplied 5 x 16 mm screws.

   • Be sure to mount the transceiver in a location where the controls will be within easy reach of the user and where there is sufficient space at the rear of the transceiver for cable connections.

2 Connect the antenna and the supplied power cable to the transceiver.

3 Slide the transceiver into the mounting bracket and secure it using the supplied hex-headed screws.

4 Mount the microphone hanger, using the supplied 4 x 16 mm screws, in a location where it will be within easy reach of the user.

   • The microphone should be mounted in a place where it will not interfere with the safe operation of the vehicle.

5 Connect the microphone cable to the jack on the front panel of the transceiver. Place the microphone on the hanger.

Microphone

Microphone cable

Microphone hanger

Mounting bracket

Transceiver

Antenna connector

Hex headed screw

Power input connector

Power cable

Fuse

Battery

Fuse holder

Black wire   Red wire

GETTING ACQUAINTED

■ **Front Panel**
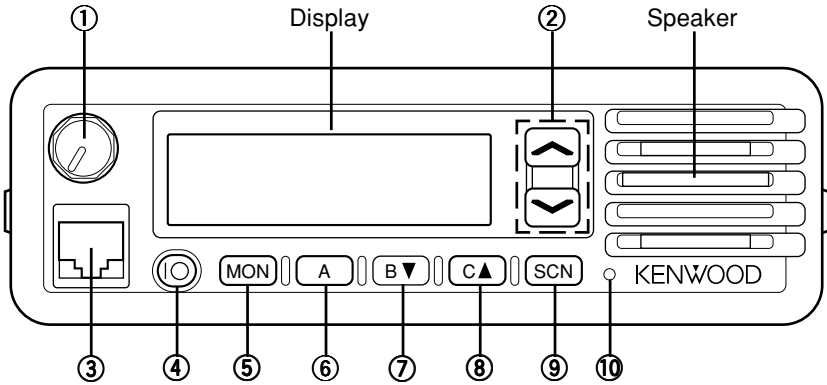
① **Volume control**
Turn clockwise to increase the volume. Turn counterclockwise to decrease the volume.

② **⌃ / ⌄ keys**
Press these keys to activate their programmable functions {page 7}. The default settings of these keys are "Channel Up" (⌃) and "Channel Down" (⌄).

③ **Microphone jack**
Insert the microphone plug into this jack.

④ **IO (Power) switch**
Press to switch the power ON. Press and hold for approximately 1 second to switch the power OFF.

⑤ **MON key**
Press **MON** to activate its programmable function {page 7}. The default setting of this key is "Monitor".

⑥ **A key**
⑦ **B▼ key**
⑧ **C▲ key**
Press these PF (programmable function) keys to activate their programmable functions {page 7}. The default setting of these keys is "No Function".

⑨ **SCN key**
Press **SCN** to activate its programmable function {page 7}. The default setting of this key is "Scan".

⑩ **LED**
Lights red while transmitting. Lights green while the selected channel is busy. Lights orange when you receive a call.

4
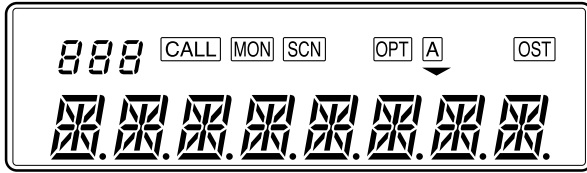
■ Display

🔳🔳🔳🔳🔳🔳🔳🔳	Displays the operating Channel number, the Channel name, and the transceiver status.
888	Displays the operating channel number and the channel status: **P** indicates a Priority channel **HC** indicates a Home Channel **tA** indicates Talk Around mode
CALL	Flashes when a call is received by DTMF or 2-Tone signaling. Appears during and after transmitting if set by the dealer.
MON	Appears when signaling squelch is turned OFF.
SCN	Appears while scanning is in progress.
OPT	Appears when the optional scrambler board is enabled.
▾	Appears when the selected channel is in the scanning sequence.
A	Appears when Aux is ON.
OST	Appears when Operator Selectable Tone is enabled.

■ **Rear Panel**

15 pin connector
(for accessories)

Antenna
connector

Power input
connector
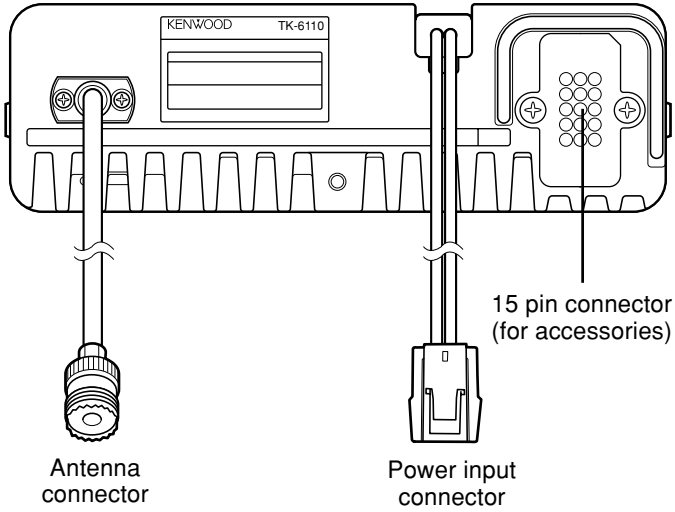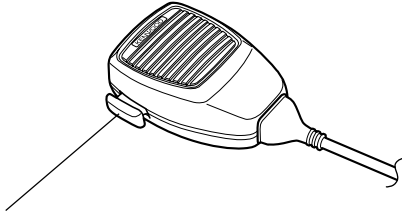
■ **Microphone**

PTT (Push To Talk) switch
Press and hold to transmit, then speak
into the microphone. Release to receive.

PROGRAMMABLE FUNCTIONS

The following functions can be programmed onto the ∧ , ∨ , **MON**, **A**, **B▼**, **C▲**, and **SCN** keys. Contact your dealer for details on these functions.

AUX

Press this key to turn the Aux output port ON (or OFF). When you press this key, the AUX icon appears and a tone sounds. When you press this key again, the icon disappears and a tone sounds.

CH 1 Direct/ CH 2 Direct/ CH 3 Direct/ CH 4 Direct/ CH 5 Direct

Press these keys to directly select the Channel 1, Channel 2, Channel 3, Channel 4, or Channel 5 directory (respectively).

Channel Down

Press this key decrease the channel number by 1 step. Press and hold this key to scroll down through the channels. Unprogrammed channels will be skipped.

Channel Name

Press this key to switch the display between the Channel number and name (alphanumeric). A tone will sound each time you press this key.

Channel Up

Press this key increase the channel number by 1 step. Press and hold this key to scroll up through the channels. Unprogrammed channels will be skipped.

Delete/ Add

Press this key to delete a channel from, or add a channel to, the scanning sequence. If a channel is already added to the scanning sequence, and you want to delete it, press this key while the channel is displayed. The channel add icon disappears. If a channel is not added to the scanning sequence, and you want to add it, press this key while the channel is displayed. The channel add icon appears.

Press this key while scanning, when an undesired channel is displayed, to temporarily delete it from scan. If there are only 2 channels in the scanning sequence, this function cannot be performed. To restore the original scanning sequence, turn the scan function OFF, then ON.

Emergency Call

Press and hold this key for approximately 2 seconds to initiate an emergency call (requires the ANI board). When an emergency call is made, no tone is emitted and the display does not change. To end the emergency call, turn the transceiver power OFF.

Home Channel

Press this key to select the pre-programmed Home Channel. Press this key again to return to the previous channel. If used while scanning, pressing this key a second time will change to the revert channel.

Horn Alert

Press this key to turn the Horn Alert function ON (or OFF). If you receive a call from the base station with 2-Tone or DTMF signaling, Horn Alert will activate. When you turn Horn Alert ON, a tone will sound and HA appears on the display.

LCD Backlight

Press this key to turn the LCD backlight ON (or OFF).

Monitor

Press this key to cancel QT/DQT and 2-Tone/DTMF signaling squelch. Press and hold this key for 2 seconds to hear background noise (unmute the audio). When monitor is being used, the MON icon appears on the display.

No Function

No function is programmed onto the key.

Operator Selectable Tone (OST)

This feature allows you to select a signaling tone from the pre-programmed QT/DQT list. Press this key to activate OST. The OST icon appears on the display. To select a decode/encode pair:

1 Press and hold the **Operator Selectable Tone** key for 1 second.

 • A tone sounds.

2 Press the ⌃ and ⌄ keys to select the desired decode/encode pair.

 • TONE and the tone number, or OST and the OST name appear on the display; if you select "OFF", "OFF" appears on the display.

3 Press the **Operator Selectable Tone** key.

 • A tone sounds and the display returns to normal.

Note: *You cannot program this function onto the* ⌃ *and* ⌄ *keys.*

Scan

Press this key to start (or stop) the scanning sequence. When you activate scan, a tone sounds, the SCN icon appears, and SCAN or the OFF Hook revert channel number appears on the display. If there is less than 2 channels in the scanning sequence, an error tone sounds.

Scan can be set up two different ways: ON Hook or OFF Hook. ON Hook requires the microphone to be on its hanger before scanning will activate. OFF Hook allows you to activate scan whether the microphone is on or off the hanger.

When a signal is received while scanning, scanning will halt, the audio will unmute, and the channel number or name will appear on the display.

If Priority is programmed, the priority channel is periodically checked for a signal while a signal is being received on a normal channel. When a signal appears on the priority channel, the transceiver will automatically switch to the priority channel.

To enter carrier squelch scan, press the **Monitor** key while scan is in progress.

Scrambler

If you have an optional scrambler board installed, you can press this key to turn it ON (or OFF). When enabled, a tone sounds and the OPT icon appears on the display. To change the scrambler code:

1 Press and hold the **Scrambler** key for 1 second.

   • A tone sounds and CODE appears on the display with the current code.

2 Press the ⌃ and ⌄ keys to select the desired scrambler code.

3 Press the **Scrambler** key.

   • A tone sounds and the display returns to normal.

Note: *You cannot program this function onto the* ⌃ *and* ⌄ *keys.*

Squelch Level

You can manually adjust the squelch level using this function:

1 Press the **Squelch** key.

   • A tone sounds and SQL appears on the display with the current squelch level.

2 Press the ⌃ and ⌄ keys to select the desired squelch level.

3 Press the **Squelch** key.

   • A tone sounds and the display returns to normal.

Note: *You cannot program this function onto the* ⌃ *and* ⌄ *keys.*

Talk Around

Press this key to make a call without the use of a repeater. When you activate this function, a tone sounds and tA appears on the 3-digit display. This function is useful when you are close to the units you want to talk to.

BASIC OPERATIONS

■ Switching Power ON/ OFF

Press the **IO** switch to switch the transceiver ON. Press and hold the **IO** switch for approximately 1 second to switch the transceiver power OFF.

• The display backlight illuminates when the power is switched ON.

■ Adjusting the Volume

Turn the **Volume** control clockwise to increase the volume, and counterclockwise to decrease it.

■ Selecting a Channel

Press the **Channel Up** and **Channel Down** keys to select your desired channel. **Channel Up** increases the channel number and **Channel Down** decreases it.

■ Making a Call

1 Select your desired channel (above).

   • Listen to the channel for a few seconds before transmitting to make sure it is not in use.

2 Press the **PTT** switch, then speak into the microphone in your normal speaking voice.

   • For best results, hold the transceiver approximately 3 to 4 cm (1 1/2 inches) from your lips.

3 Release the **PTT** switch to receive.

4 Replace the microphone on its hanger when the call is finished.

DTMF CALLS

You can make DTMF calls using the optional KMC-28A DTMF microphone.

■ Manual Dialing

To dial a number manually:

1 Press and hold the **PTT** switch.
   - If Keypad Auto PTT is enable, you do not need to press the **PTT** switch (please consult your dealer for enabling this function).

2 Enter your desired digits.

■ Redialing

A maximum of 16 digits can be redialed. The last number dialed, either manually or automatically, will be redialed.

To redial a number:

1 Press the ✱ key.
   - An "A" will appear on the display.

2 Press the **0** key.
   - The transceiver will redial the last dialed number, and the digits will appear on the display.

Note: *If the transceiver power is switched OFF, the redial memory will be erased.*

■ Auto Dialing

Note: *Auto dialing is either enabled or disabled by your dealer.*
Store:

To store a number in memory:

1 Press the **#** key.
   - A "D" will appear on the display.

2 Enter up to a maximum of 16 digits.
   - To enter A, B, C, D, ✱ , or #, press and hold the **PTT** switch, then press **2**, **5**, **8**, **0**, ✱ , or **#** (respectively).

3 Press the **#** key.

4 Select the desired memory channel by pressing a key (**1** ~ **9**).
   - The number entered in step 2 will be stored in the memory channel selected.

Confirm:

To confirm a stored number:

1 Press the **#** key.

 • A "D" will appear on the display.

2 Press the ✳ key.

 • "D=" will appear on the display.

3 Press the memory channel key (**1** ~ **9**) with the stored number you want to confirm.

 • The stored digits will appear on the display and the DTMF tones will sound.

Send:

To send a stored number:

1 Press the ✳ key.

 • An "A" will appear on the display.

2 Press the memory channel key (**1** ~ **9**) with the stored number you want to send.

 • The transceiver will begin the transmission and the digits will appear on the display.

Clear:

To remove a stored number from memory:

1 Press the **#** key.

 • A "D" will appear on the display.

2 Press the **#** key again.

 • "D–CLEAR" will appear on the display.

3 Press the memory channel key (**1** ~ **9**) with the stored number you want to erase.

AUXILIARY FUNCTIONS

The following functions can be set up by your dealer.

■ Time-out Timer (TOT)

The TOT is used to automatically inhibit transmission after a specified time elapses. If the **PTT** switch is held down for longer than the programmed time, the transceiver will stop transmitting and a warning tone will sound. To stop the warning tone, release the **PTT** switch.

■ Busy Channel Lockout (BCL)

BCL prevents you from interfering with other stations that may be using the same channel as you. When you press the **PTT** switch while the channel is in use, a warning tone sounds and the transceiver does not transmit. To stop the warning tone, release the **PTT** switch.

If BCL override has been enabled, you can press the **PTT** switch again within 0.5 seconds to cancel BCL. The transceiver will transmit.

■ 2-Tone/ DTMF Signaling

2-Tone/ DTMF signaling will only open the squelch when the proper code is received. When the transceiver receives a correct code, the CALL icon flashes.

If transpond has been enabled, the transceiver automatically sends an acknowledgement signal after receiving the 2-Tone/ DTMF signal.

If alert tone has been enabled, an alert tone sounds after receiving the 2-Tone/ DTMF signal.

■ Roll Over/ Dead End

If roll over is enabled and you are pressing the **Channel Up** and **Channel Down** keys, when you reach the maximum or minimum number, the number will roll over to the minimum or maximum number. For example, when the pressing the **Channel Up** key, the channel number increases. When it reaches its maximum value, it rolls over to its minimum value and then starts to increase again.

If dead end is selected, when you reach the maximum or minimum value, the value will not change. For example, when when the pressing the **Channel Up** key, the channel number increases. When it reaches its maximum value, it stops. You must then press the **Channel Down** key to change the value.

■ Dead Beat Disable (DBD)

Depending on how your dealer programs your transceiver, when you receive a call containing a DBD code, you may not be able to transmit.

DBD is cancelled when you receive a call with a DBD reset code.

■ Timed Power OFF

This function requires Ignition Sense to be activated before it can function. Your ignition must be connected to the 15 pin connector on the rear panel of the transceiver. When you turn the ignition of your vehicle OFF, the timer starts. After the pre-selected time expires, the transceiver will turn OFF. The timer resets when the vehicle ignition is turned ON, then OFF.

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