

KENWOOD

INSTRUCTION MANUAL



MULTI-BAND PORTABLE TRANSCEIVER

TH-F6A

DUAL-BAND PORTABLE TRANSCEIVER

TH-F7E

KENWOOD CORPORATION

© B62-XXXX-XX (K)
09 08 07 06 05 04 03 02 01 00

THANK YOU

Thank you for choosing this **KENWOOD** TH-F6A/ TH-F7E transceiver. It has been developed by a team of engineers determined to continue the tradition of excellence and innovation in **KENWOOD** transceivers.

First, don't let the size fool you. This small FM portable transceiver features 144 MHz, 220 MHz (TH-F6A only), and 430/ 440 MHz amateur band operation plus another all-mode 100 kHz to 1.2 GHz receiver (SSB and CW are up to less than 600 MHz). In the meantime, as you learn how to use this transceiver, you will also find that **KENWOOD** is pursuing "user friendliness". For example, each time you change the Menu No. in Menu mode, you will see a text message on the display that lets you know what you are configuring.

Though user friendly, this transceiver is technically sophisticated and some features may be new to you. Consider this manual to be a personal tutorial from the designers. Allow the manual to guide you through the learning process now, then act as a reference in the coming years.

FEATURES

- Ultra compact design
- 144 MHz, 220 MHz (TH-F6A only), and 430/ 440 MHz amateur band FM transceiver operation
- A separate wide band, all-mode receiver, built-in
- 400 memory channels plus 23 special function memory channels (24 channels for TH-F6A)
- Long operation period with a Li-ion battery pack
- High output power (up to 5 W operation)
- 9600 bps Packet-ready data (Speaker/ Mic.) jack
- Built-in VOX function

SUPPLIED ACCESSORIES

After carefully unpacking the transceiver, identify the items listed in the table below. We recommend you keep the box and packing material in case you need to repack the transceiver in the future.

Accessory	Part Number	Quantity		
		TH-F6A (K)	TH-F7E	
			(E)	(T)
Belt hook	J29-0623-XX	1	1	1
Antenna	T90-0781-XX (4-band)	1	–	–
	T90-0789-XX (3-band)	–	1	1
Strap	J69-0339-XX	1	1	1
Li-ion battery	W09-0979-XX	1	1	1
Charger	W08-0927-XX	1	–	–
	W08-0928-XX	–	1	–
	W08-0929-XX	–	–	1
Instruction Manual	B62-1441-XX (E/ S)	1	1	1
	B62-1442-XX (F/ I)	–	1	–
	B62-1443-XX (D/ G)	–	1	–
R&TTE Notice	B59-2267-XX	–	1	1
Warranty card	B46-0469-XX	1	–	–
	B46-0310-XX	–	1	1

WRITING CONVENTIONS FOLLOWED

The writing conventions described below have been followed to simplify instructions and avoid unnecessary repetition.

Instruction	What to Do
Press [KEY] .	Press and release KEY .
Press [KEY1]+[KEY2] .	Press and hold KEY1 down, then press KEY2 . If there are more than two keys, press and hold down each key in turn until the final key has been pressed.
Press [KEY1], [KEY2] .	Press KEY1 momentarily, release KEY1 , then press KEY2 .
Press [KEY]+[ϕ] .	With the transceiver power OFF, press and hold KEY , then switch ON the transceiver power by pressing [ϕ] (POWER).

MODELS COVERED BY THIS MANUAL

The models listed below are covered by this manual.

TH-F6A: 144 MHz/ 220 MHz/ 440 MHz FM
Multi-band Portable Transceiver

TH-F7E: 144 MHz/ 430 MHz FM
Dual-band Portable Transceiver

MARKET CODES

K-type: The Americas

E-type: Europe/ Universal type

T-type: United Kingdom

The market code is shown on the carton box.

Refer to the specifications {page xx} for the information on available operating frequencies within each market.

NOTICE TO THE USER

One or more of the following statements may be applicable for 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:

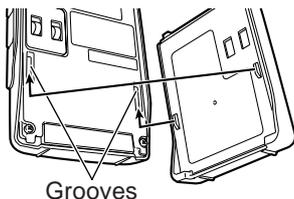
- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer for technical assistance.*

PREPARATION

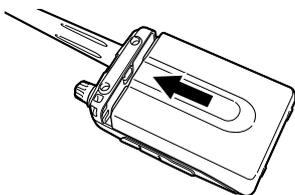
INSTALLING THE Li-ion BATTERY PACK

Note: Because the battery pack is provided uncharged, you must charge the battery pack before using it with the transceiver. To charge the battery pack, refer to "CHARGING THE Li-ion BATTERY PACK" (page 2).

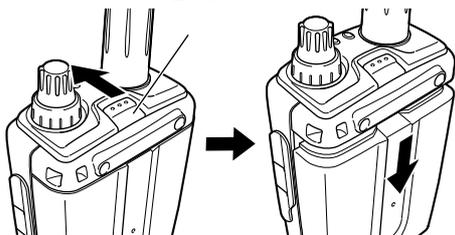
- 1 Position the two grooves on the edge and two hooks at the bottom of the battery pack over the corresponding guides on the back of the transceiver.



- 2 Slide the battery pack along the back of the transceiver until the release latch on the top of the transceiver locks the battery pack in place.

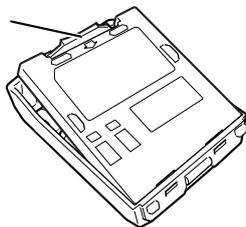


- 3 To remove the battery pack, pull the release latch on top, then slide the battery pack down.

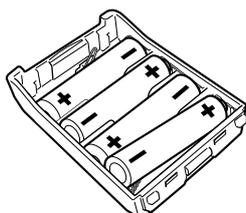


INSTALLING ALKALINE BATTERIES

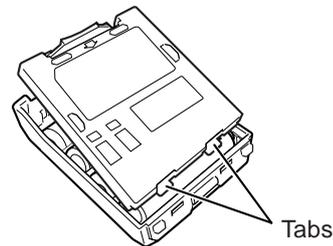
- 1 To open the battery case (BT-13), push the locking tab in, then pull the cover back.



- 2 Insert (or remove) four AA (LR6) alkaline batteries.
 - Be sure to match the battery polarities with those marked in the bottom of the battery case.



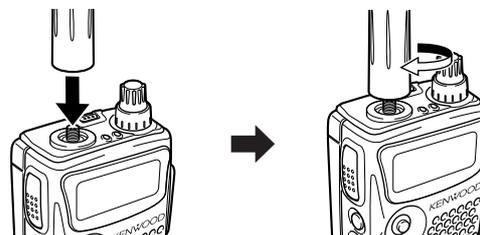
- 3 Align the two tabs on the battery case cover, then close the cover until the locking tabs click.



- 4 To install the battery case onto (or remove it from) the transceiver, follow steps 1 to 3 of "INSTALLING THE Li-ion BATTERY PACK" (above).

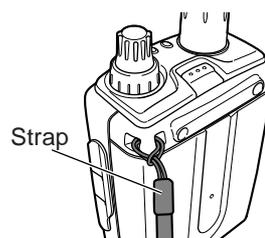
INSTALLING THE ANTENNA

Hold the base of the supplied antenna, then screw the antenna into the connector on the top panel of the transceiver until secure.



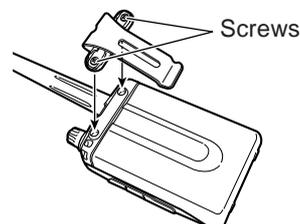
ATTACHING THE HAND STRAP

If desired, you can attach the supplied hand strap to the transceiver.



INSTALLING THE BELT CLIP

You can install the supplied belt clip to the transceiver tightening the 2 supplied screws.

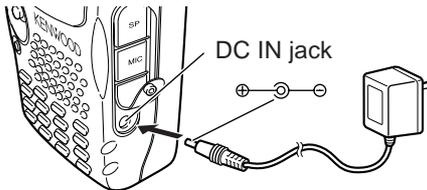


1 PREPARATION

CHARGING THE Li-ion BATTERY PACK

The Li-ion battery pack can be charged after it has been installed onto the transceiver. The battery pack is provided uncharged for safety purposes.

- 1 Confirm that the transceiver power is OFF.
 - While charging the battery pack, leave the transceiver power OFF.
- 2 Insert the charger plug into the **DC IN** jack of the transceiver.



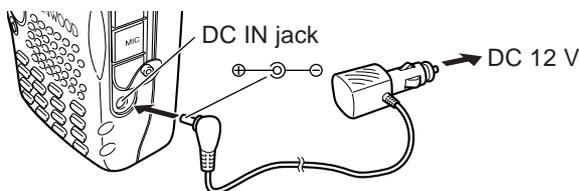
- 3 Plug the charger into an AC wall outlet.
 - Charging starts and "CHARGING" appears.
- 4 It takes approximately 6 hours to charge an empty PB-42L Li-ion battery. When charging is complete, "STANDBY" appears; remove the charger plug from the transceiver **DC IN** jack.
- 5 Unplug the charger from the AC wall outlet.

CAUTION

- ◆ Exceeding the specified charge period shortens the useful life of the Li-ion battery pack.
- ◆ The provided charger is designed to charge only the provided PB-42L Li-ion battery pack. Charging other models of battery packs may damage the charger and battery pack.

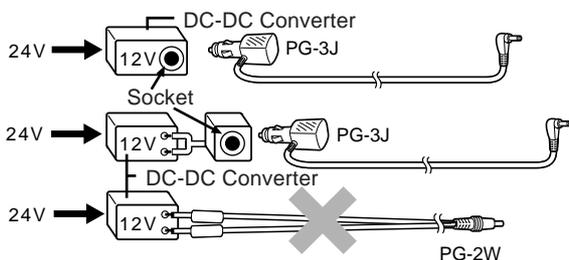
CONNECTING TO A CIGARETTE LIGHTER SOCKET

To connect the transceiver to the cigarette lighter socket in your vehicle, use an optional PG-3J Cigarette Lighter cable.



CAUTION

To connect with an external 24 V power source via a DC-DC converter, only use the optional PG-3J Cigarette Lighter cable. Using the PG-2W DC cable in this situation may cause a fire.

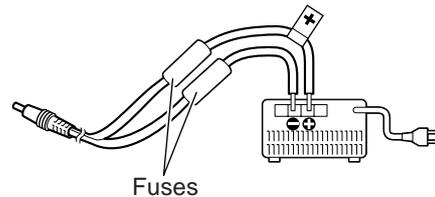


Note: If the input voltage exceeds approximately 18 V, warning beeps sound and "VOLTAGE ERROR" appears.

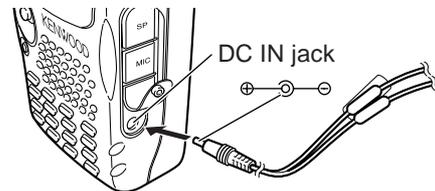
CONNECTING TO A REGULATED POWER SUPPLY

To connect the transceiver to an appropriate regulated power supply, use an optional PG-2W DC cable.

- 1 Confirm that the power of both the transceiver and the power supply are OFF.
- 2 Connect the optional PG-2W DC cable to the power supply; the red lead to the positive (+) terminal, and the black lead to the negative (-) terminal.



- 3 Connect the barrel plug on the DC cable to the **DC IN** jack of the transceiver.



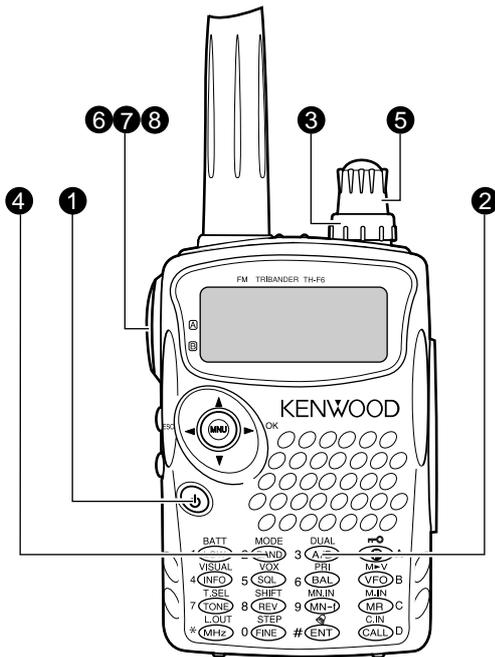
Note:

- ◆ Only use power supplies recommended by your authorized **KENWOOD** dealer.
- ◆ The supply voltage must be between 5.5 V and 16 V to prevent damaging the transceiver. If input voltage exceeds approximately 18 V, warning beeps sound and "VOLTAGE ERROR" appears.

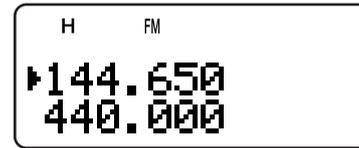
YOUR FIRST QSO

FIRST QSO

Are you ready to give your TH-F6A/ TH-F7E a quick try? Reading this page should get your voice on the air right away. The instructions below are intended only for a quick guide. If you encounter problems or there is something you would like to know more, read the detailed explanations given later in this manual.



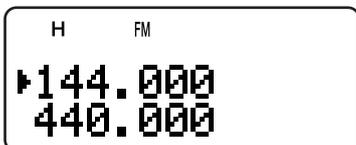
- Press **[BAND]** until you select the amateur radio band you wish to operate.
- Turn the **Tuning** control to select the receive frequency.



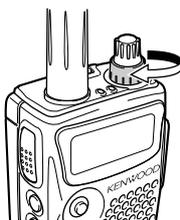
- You may further turn the **VOL** control to adjust the volume level of the signal.
- To transmit, hold the transceiver approximately 5 cm (2 inches) from your mouth.
 - Press and hold the **PTT** switch, then speak in your normal tone of voice.
 - Release the **PTT** switch to receive.
 - Repeat steps **6**, **7** and **8** to continue communication.

- Press and hold **[PWR]** (POWER) briefly to switch the transceiver power ON.
 - Do not press the switch for more than approximately 2 seconds; the transceiver will be switched OFF.
 - A high pitched double beep sounds and then "KENWOOD" and "HELLO!!" appears momentarily. The various indicators and 2 frequencies appear on the LCD.

- Press **[A/B]** to select the frequency band on top.
 - Each time you press **[A/B]**, the "▶" icon moves, indicating which frequency band is currently selected for operation.

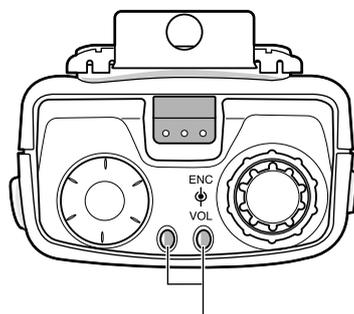
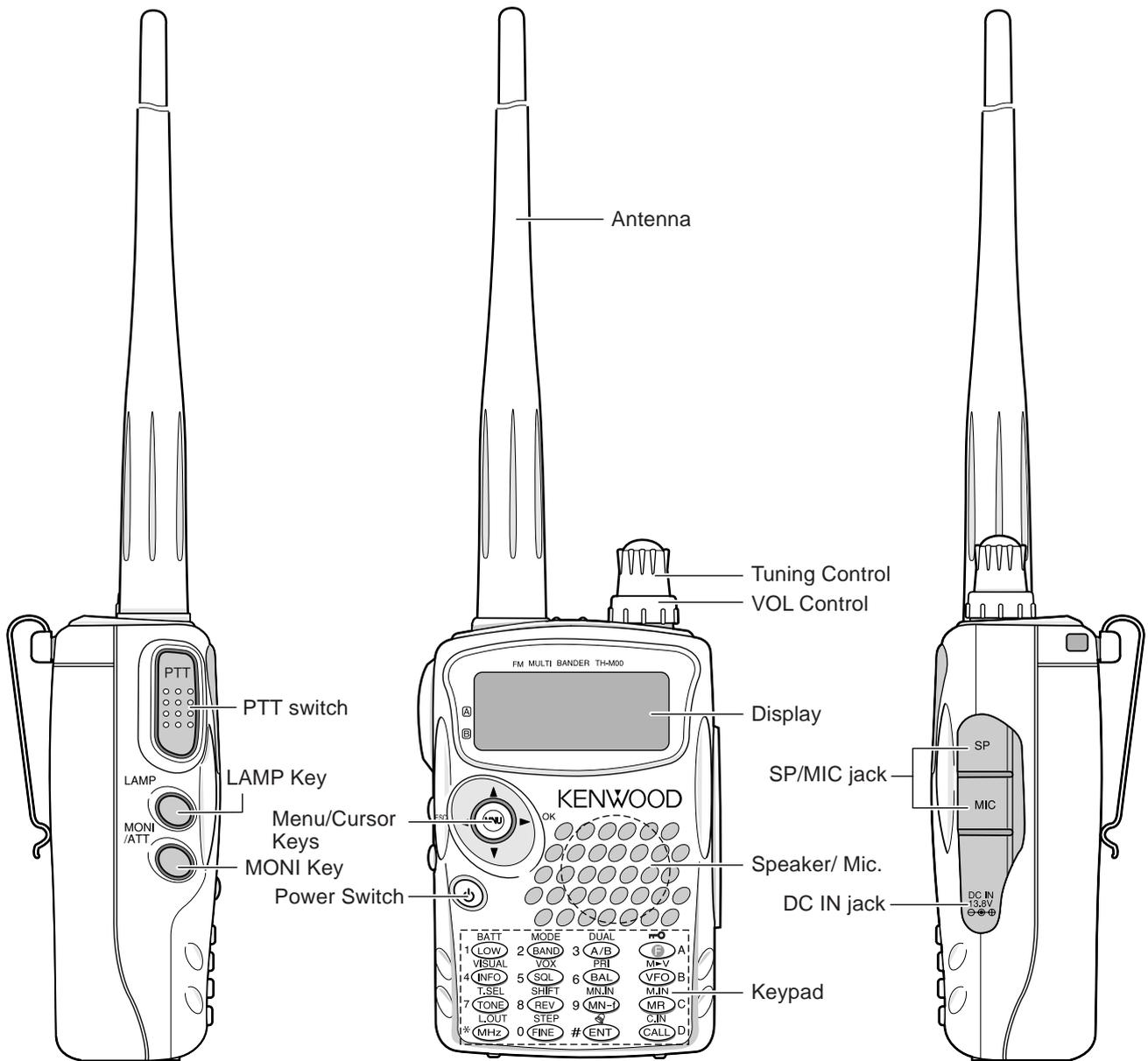


- Turn the **VOL** control clockwise to the 11 o'clock position.

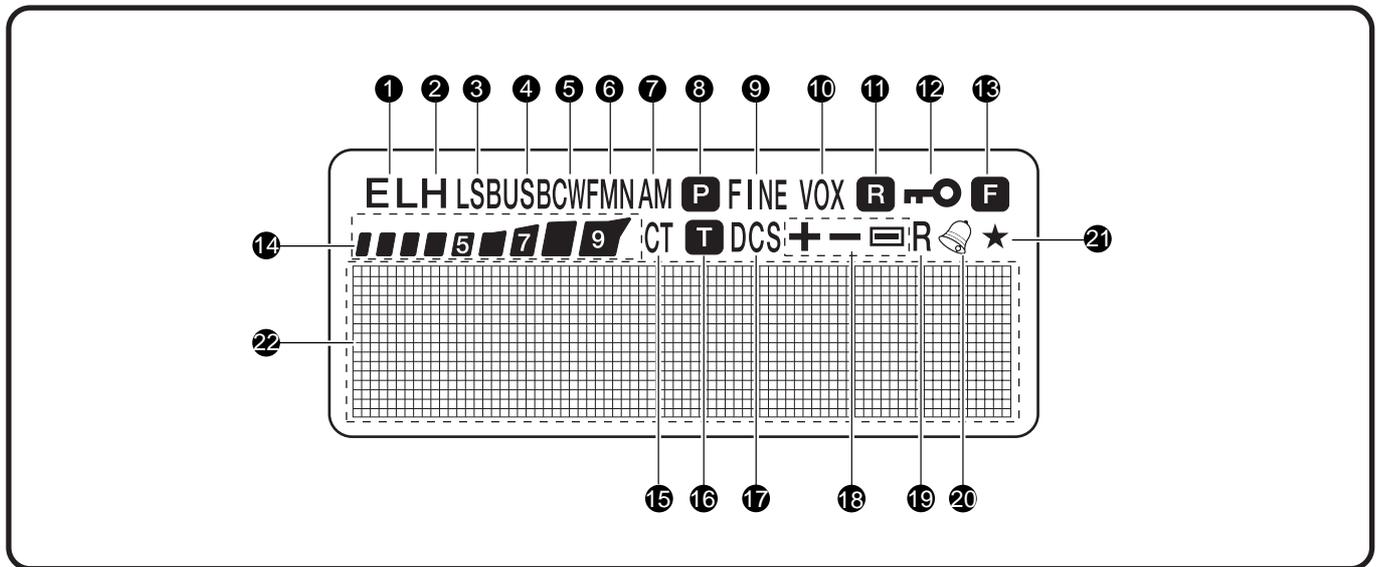


GETTING ACQUAINTED

KEYS AND CONTROLS



DISPLAY

**1 E L**

Appears when the transmit output power is set to Low ("L") or Economic Low ("E L") {pages 7, }.

2 H

Appears when the transmit output power is set to High ("H") {pages 7, }.

3 LSB

Appears when lower side band (LSB) is selected for B-band {page 36}.

4 USB

Appears when upper side band (USB) is selected for B-band {page 36}.

5 CW

Appears when CW is selected for B-band {page 36}.

6 WFM/ FM/ FMN

"WFM" appears when wide FM mode is selected {page 36}.

"FM" appears when normal FM mode is selected.
"FMN" appears when narrow FM mode is selected {pages 36, }.

7 AM

"AM" appears when AM mode is selected {page 36}.

8 P

Appears when a priority scan is activated {page 25}.

9 FINE

Appears when a fine tuning function is activated.

10 VOX

Appears when the VOX function is activated {page xx}.

11 R

Appears when the Automatic Simplex Check (ASC) is activated {page 14}.

12

Appears when the Key lock function is activated {page xx}.

13 F

Appears when the function key is pressed.

14

S-meter (RX) and relative output power meter (TX).

15 CT

"CT" appears when the CTCSS function is activated {page 28}.

16 T

Appears when the Tone function is activated {page 13}.

17 DCS

Appears when the DCS function is activated {page 29}.

18 +/-

Appears when the repeater shift function is activated {page 12}.

19 R

Appears when the Reverse shift function is activated {page 14}.

20

Appears when the Tone Alert function is activated {page xx}.

21

Appears when the displayed memory channel has been locked out {page 27}.

22

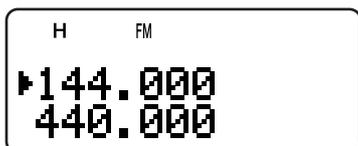
Full dot-matrix display (76 x 16 dots). It displays various informations, such as the operating frequencies, menu settings, and etc.

4 GETTING ACQUAINTED

BASIC OPERATION

SWITCHING POWER ON/ OFF

- 1 Press [] (POWER) briefly to switch the transceiver power ON.
 - Do not press the key for more than approximately 2 seconds; the transceiver will be switched OFF.
 - Upon power up, a high pitched double beep sounds, followed by the frequencies and other indicators.



- 2 To switch the transceiver OFF, press [] (POWER) again.
 - When you turn the transceiver OFF, a low pitched double beep sounds.

ADJUSTING VOLUME

Turn the **VOL** control clockwise to increase the audio output level and counterclockwise to decrease the output level.

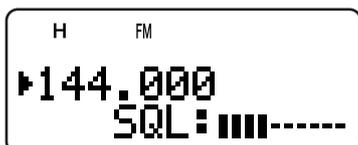


- If you are not receiving a signal, press and hold [**MONI**] to unmute the speaker, then adjust the **VOL** control to a comfortable audio output level.

ADJUSTING SQUELCH

The purpose of the Squelch is to mute the speaker when no signals are present. With the squelch level correctly set, you will hear sound only while actually receiving signals. The higher the selected squelch level, the stronger the signals must be, to receive. The appropriate squelch level depends on the ambient RF noise conditions. You can configure independent threshold squelch levels for the A-band and B-band.

- 1 Press [**SQL**].
 - The current SQL level appears.

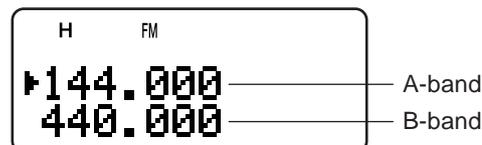


- 2 Turn the **Tuning** control or press [] / [] to adjust the level.
 - Select the level at which the background noise is just eliminated when no signal is present.

- The higher the level, the stronger the signals must be, to receive.
 - 6 different levels can be set (OPEN: unmuted ~ || || || || || || : maximum).
- 3 Press [] or [**MNU**] to store the new settings or press [] to cancel without changing the current setting.

SELECTING A BAND

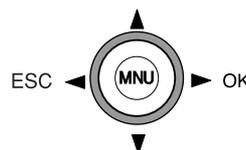
By default, two frequencies are displayed on the LCD. The frequency on top is called the A-band. The bottom frequency is called the B-band.



Press [**A/B**] to select the A-band or B-band for operation. Each time you press [**A/B**], the “▶” icon moves, indicating which band is currently selected for operation. Usually, select the A-band to operate the amateur band and select the B-band to receive the various broadcasting stations, such as AM, FM, TV (audio only) or another amateur band {page 35}.

CURSOR KEYS

This transceiver has a 4-way cursor key with a MENU (“MNU”) key in the center.



▲/ ▼ keys

The ▲/ ▼ keys function in the same way as the **Tuning** control. These keys change the frequencies, memory channels, and other selections.

Note: You can use the **Tuning** control in place of the ▲/ ▼ keys for most of the controls.

▶ / OK key

Press to move to the next step or complete the setting in various modes, such as Menu mode, CTCSS frequency selection, and DCS code selection.

◀ / ESC key

Press to move back or cancel the entry in various modes, such as Menu mode, CTCSS frequency selection, and direct frequency entry.

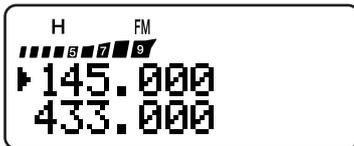
MNU key

Press to enter the Menu mode.

In Menu mode, you can select the desired menu number by turning the **Tuning** control or pressing [] / [].

TRANSMITTING

- To transmit, hold the transceiver approximately 5 cm (2 inches) from your mouth, then press and hold the **PTT** switch and speak into the microphone in your normal tone of voice.
 - The status LED on the top panel lights red and bar-graph meter appears.
 - If you press **[PTT]** while you are outside of the transmission coverage, a high pitched error beep sounds.



- When you finish speaking, release the **PTT** switch.

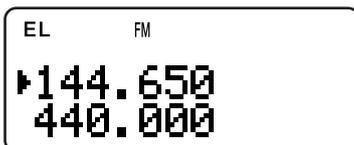
Note: If you transmit continuously for more than 10 minutes, the internal time-out timer generates a warning beep and the transceiver stops transmitting. In this case, release the **PTT** switch and let the transceiver cool down for a while, then press the **PTT** switch again to resume transmitting {page xx}.

■ Selecting Output Power

Selecting lower transmission power is the best way to reduce the battery consumption, if communication is still reliable. You can configure different power levels for transmission {page xx}.

Press **[LOW]**.

- Each time you press **[LOW]**, the indicator cycles between “H” (high), “L” (low), and “EL” (economic low).



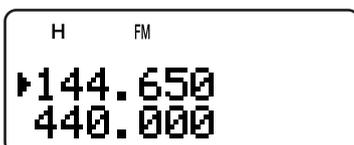
Note:

- You can store different output power setting for the A and B-band. When you change the output power, it is reflected to all available amateur bands for A or B-band.

SELECTING A FREQUENCY

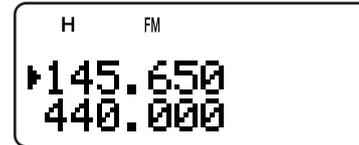
■ VFO mode

This is the basic mode for changing the operating frequency. Turn the **Tuning** control clockwise to increase the frequency. Turn the **Tuning** control counterclockwise to decrease the frequency. Or, press **[▲]/[▼]** to change the frequency.



If the desired operating frequency is far away from the current frequency, it is quicker to use the MHz tuning mode.

- Press **[MHz]**.
 - A MHz digit blinks.
- Turn the **Tuning** control or press **[▲]/[▼]** to select the desired MHz digit.

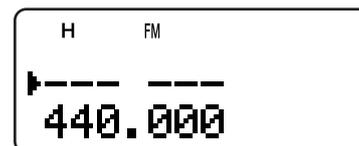


- After selecting the desired MHz digit, press **[MHz]** to exit the mode and return to normal tuning mode.
- You may further adjust the frequency using the **Tuning** control or **[▲]/[▼]**.

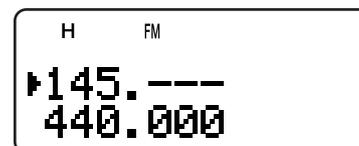
■ Direct Frequency Entry

In addition to turn the **Tuning** control or press **[▲]/[▼]**, there is another way of selecting the frequency. When the desired frequency is far away from the current frequency, you can directly enter a frequency from the numeric keypad.

- Press **[VFO]**.
 - You must be VFO mode to make the direct frequency entry.
- Press **[ENT]**.
 - “- - - - -” appears.



- Press the numeric keys (**[0]** to **[9]**) to enter your desired frequency. **[MHz]** can be used to complete the MHz digits entry.



- Pressing **[ENT]** fills the remaining digits (the digits you did not enter) with 0 and completes the entry.
- To select 145.000 MHz for example, press **[1]**, **[4]**, **[5]** then press **[ENT]** to complete the entry.

Example 1 (100 MHz < f < 1000 MHz)

To enter 438.320 MHz:

Key in	Display
[ENT]	- - - - -
[4], [3], [8]	4 3 8. - - -
[3], [2], [0]	4 3 8. 3 2 0

Note: You do not have to press **[MHz]** when you are entering 3-digit MHz number.

4 GETTING ACQUAINTED

Example 2

To enter 439.000 MHz:

Key in	Display
[ENT]	--- ---
[4], [3], [9]	4 3 9. ---
[ENT]	4 3 9. 0 0 0

Example 3 (f > 1000 MHz)

To enter 1250.500 MHz (B-band only):

Key in	Display
[ENT]	--- ---
[1], [2], [5], [0]	12 5 0. ---
[5]	12 5 0. 5 --
[ENT]	12 5 0. 5 0 0

Example 4 (f < 100 MHz)

To enter 10.500 MHz (B-band only):

Key in	Display
[ENT]	--- ---
[1], [0]	1 0 - ---
[MHz]	1 0. ---
[5]	1 0. 5 --
[ENT]	1 0. 5 0 0 0

Note: When pressing the last [ENT], the FINE tuning function is automatically activated for 10.5000 MHz.

Example 5

To enter 810 kHz (B-band only):

Key in	Display
[ENT]	--- ---
[0]	0 - - - -
[MHz]	0. - - -
[8], [1], [0]	0. 8 1 0

Note:

- ◆ If the entered frequency does not match the current frequency step size, the frequency is automatically rounded up or down to the next available frequency.
- ◆ When the desired frequency cannot be entered exactly, check whether the FINE function is ON or not and confirm the frequency step size (page xx).
- ◆ Some frequency ranges are blocked, due to government regulations. Refer to the specifications for the TX/ RX coverage.
- ◆ If you turn the **Tuning** control or press [▲]/ [▼] while entering the frequency, the transceiver clears the entry and recovers the previous frequency and mode.

MENU SETUP

WHAT IS A MENU?

Many functions on this transceiver are selected or configured via a software-controlled Menu, rather than through the physical controls of the transceiver. Once familiar with the Menu system, you will appreciate the versatility it offers. You can customize the various timings, settings, and programming functions on this transceiver to meet your needs without using many controls and switches.

MENU ACCESS

- 1 Press **[MNU]**.
 - The Menu No. and setting appear on the display, along with a brief explanation of the Menu No.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired Menu No.
 - As you change the Menu No., a brief explanation of each Menu No. appears.

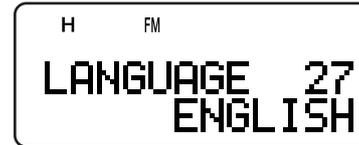


- 3 Press **[▶]** or **[MNU]** to configure the parameter of the currently selected Menu No.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired parameter.
- 5 Press **[▶]** or **[MNU]** to store the setting. Otherwise, press **[◀]** or **[PTT]** to cancel.

SELECTING A MENU LANGUAGE

You can select either English or Japanese (katakana) for the menu description. To switch the language:

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 27.
- 3 Turn the **Tuning** control or press **[▲]/ [▼]** to select either "ENGLISH" or "JAPANESE".



- 4 Press **[▶]** or **[MNU]** to store the setting. Otherwise, press **[◀]** or **[PTT]** to cancel.
 - When you select "JAPANESE" in step 3 and press **[▶]** or **[MNU]**, all Menu explanations are displayed in Japanese (katakana). To return to English mode, repeat step 1 and 2 {above} to access Menu No. 27, then select "EIGO". Press **[▶]** or **[MNU]** to display the Menu mode in English.

Note: The menu language selection does not affect any other modes, such as memory name or DTMF name.

MENU FUNCTION LIST

On the Display	Menu No.	Function	Selections	Default	Ref. Page
SCAN RESUME	1	Scan resume method TIME: Time-Operated mode CARRIER: Carrier-Operated mode SEEK: Seek and stop mode	TIME/ CARRIER/ SEEK	TIME	27
M.GRP LINK	2	Memory Group Link configuration	0 1 2 3 4 5 6 7	No Links	24
MR METHOD	3	Memory Recall condition	ALL BANDS/ CURRENT BAND	ALL BANDS	16
PROG VFO	4	Programmable VFO frequency range	—	See Reference Page	
AUTO OFFSET	5	Auto Repeater Offset function	ON/ OFF	ON	13
OFFSET	6	Repeater offset frequency	0.00 ~ 59.95 MHz in steps of 0.05 MHz	See Reference Page	12
TUNE ENABLE	7	Permit use of the Tuning control when the keys are locked	ON/ OFF	OFF	
TX INHIBIT	8	Inhibit the transmission	ON/ OFF	OFF	
MIC/SP JACK	9	Select the MIC/SP jack function	MIC/SP / TNC/ PC	MIC/SP	

6 MENU SETUP

On the Display	Menu No.	Function	Selections	Default	Ref. Page
DTMF STORE	10	Store DTMF numbers in DTMF memories	—	No Data	31
DTMF SPD	11	DTMF tone transmission speed	FAST/ SLOW	FAST	32
DTMF HOLD	12	Hold the transmission for 2 seconds between DTMF key entries	ON/ OFF	OFF	31
DTMF PAUSE	13	The pause duration while transmitting DTMF tones	100/ 250/ 500/ 750/ 1000/ 1500/ 2000 ms	500 ms	32
DTMF LOCK	14	Disable DTMF transmission with keys	ON/ OFF	OFF	33
PWR-ON MSG	15	Power-on message	8 characters	HELLO!!	
CONTRAST	16	LCD display contrast 1: minimum ~ 16: maximum	1 ~ 16	8	40
BAT SAVER	17	Battery saver receiver shut-off period	OFF/ 0.2/ 0.4/ 0.6/ 0.8/ 1.0/ 2.0/ 3.0/ 4.0/ 5.0 sec.	1.0 sec.	
APO	18	Automatic Power Off function	OFF/ 30/ 60 min.	30 min.	40
KEY BEEP	19	Beep function	ON/ OFF	ON	40
VOXonBUSY	20	Allow VOX transmission when the receiver is busy	ON/ OFF	OFF	
VOX GAIN	21	Set the VOX gain sensitivity 0: least sensitive ~ 9: most sensitive	0 ~ 9	4	
VOX DELAY	22	Adjust the VOX delay time	100/ 200/ 300/ 500/ 1000/ 1500/ 3000 ms	500 ms	
CALL KEY	23	Select a function for the CALL key	CALL/ 1750 Hz	CALL (TH-F6A) 1750 Hz (TH-F7E)	19
1750 HOLD	24	Hold the TX status when a 1750 Hz tone is transmitted	ON/ OFF	OFF	13
BEAT SHIFT	25	Shift the internal CPU clock frequency	ON/ OFF	OFF	40
BAR ANT	26	Enable an internal bar antenna below 7.0 MHz	ENABLE/ DISABLE	ENABLE	40
LANGUAGE	27	Select the menu language	ENGLISH/ JAPANESE	ENGLISH	9
PACKET	28	Select an external TNC packet speed	1200/ 9600 bps	1200 bps	
FM NARROW	29	FM narrow band operation	ON/ OFF	OFF	
RESET?	30	Select a reset mode	NO/ VFO RESET/ MENU RESET/ FULL RESET	NO	

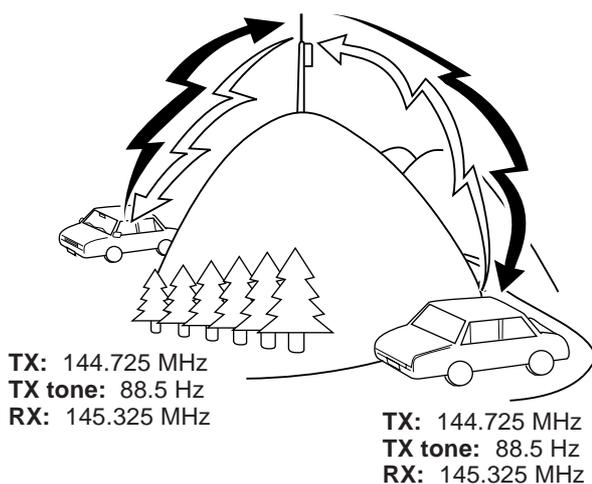
ALPHABETICAL FUNCTION LIST

On the Display	Menu No.	Selections	Default	Ref. Page
APO	18	OFF/ 30/ 60 minutes	30 min.	
AUTO OFFSET	5	OFF/ ON	ON	
BAR ANT	26	ENABLE/ DISABLE	ENABLE	
BAT SAVER	17	OFF/ 0.2/ 0.4/0.6/ 0.8/ 1.0/ 2.0/ 3.0/ 4.0/ 5.0 seconds	1.0 sec.	
BEAT SHIFT	25	OFF/ ON	OFF	
CALL KEY	23	CALL/ 1750 Hz	CALL (TH-F7E)/ 1750 Hz (TH-F6A)	
CONTRAST	16	1 ~ 16	8	40
DTMF HOLD	12	OFF/ ON	OFF	
DTMF LOCK	14	OFF/ ON	OFF	
DTMF PAUSE	13	100/ 250/ 500/ 750/ 1000/ 1500/ 2000 ms	500 ms	
DTMF SPD	11	FAST/ SLOW	FAST	
DTMF STORE	10	—	No data	
FM NARROW	29	OFF/ ON	OFF	
KEY BEEP	19	OFF/ ON	ON	
LANGUAGE	27	ENGLISH/ JAPANESE	ENGLISH	
MIC/SP JACK	9	SP/MIC / TNC/ PC	SP/MIC	
MR METHOD	3	ALL BANDS/ CURRENT BAND	ALL BANDS	
M.GRP LINK	2	0 1 2 3 4 5 6 7	No Link	
OFFSET	6	0.00 ~ 59.95 MHz in steps of 0.05 MHz	0.60 MHz/ 1.6 MHz (TH-F6A)	
PACKET	28	1200/ 9600 bps	1200 bps	
PROG VFO	4	Maximum receiver coverage	—	
PWR-ON MSG	15	8 alpha-numeric characters	HELLO!!	
RESET?	30	NO/ VFO RESET/ MENU RESET/ FULL RESET	NO	
SCAN RESUME	1	TIME/ CARRIER/ SEEK	TIME	
TUNE ENABLE	7	OFF/ ON	OFF	
TX INHIBIT	8	OFF/ ON	OFF	
VOX DELAY	22	100/ 200/ 300/ 500/ 1000/ 1500/ 3000 ms	500 ms	
VOX GAIN	21	0 ~ 9	4	
VOXonBUSY	20	OFF/ ON	OFF	
1750 HOLD	24	OFF/ ON	OFF	

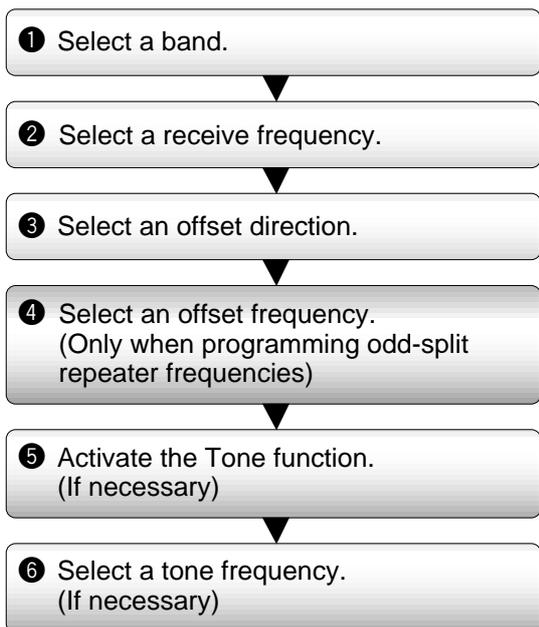
OPERATING THROUGH REPEATERS

Repeaters, which are often installed and maintained by radio clubs, are usually located on mountain tops or other elevated locations. Generally they operate at higher ERP (Effective Radiated Power) than a typical station. This combination of elevation and high ERP allows communications over much greater distances than communications without using repeaters.

Most repeaters use a receive and transmit frequency pair with a standard or non-standard offset (odd-split). In addition, some repeaters must receive a tone from the transceiver to allow it to access. For details, consult your local repeater reference.



Offset Programming Flow



If you store the above data in a memory channel, you need not reprogram every time. See “MEMORY CHANNELS” {page 15}.

PROGRAMMING OFFSET

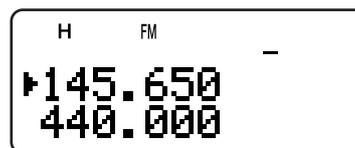
First select an amateur radio repeater downlink frequency on the A-band or B-band as described in “SELECTING A FREQUENCY” {page 7}.

■ Selecting Offset Direction

Select whether the transmit frequency will be higher (+) or lower (–) than the receive frequency.

Press **[F]**, **[REV]** to select the offset direction.

- “+” or “–” appears, indicating which offset direction is selected.



- To program –7.6 MHz offset on the TH-F7E (430 MHz only), repeatedly press **[F]**, **[REV]** until “–” appears.

If the offset transmit frequency falls outside the allowable range, transmitting is inhibited. Use one of the following methods to bring the transmit frequency within the band limits:

- Move the receive frequency further inside the band.

Note: While using an odd-split memory channel or transmitting, you cannot change the offset direction.

■ Selecting Offset Frequency

To access a repeater which requires an odd-split frequency pair, change the offset frequency from the default which is used by most repeaters. The default offset frequency on the 144 MHz band is 600 kHz (All models); the default on the 430/ 440 MHz band is 5 MHz (TH-F6A) or 1.6 MHz (TH-F7E); the default on the 220 MHz band is 1.6 MHz (TH-F6A).

- 1 Press **[BAND]** to select an amateur radio band you want to change the offset frequency.
- 2 Press **[MNU]**.
- 3 Turn the **Tuning** control or press **[▲]**/**[▼]** to select Menu No. 6 (OFFSET).



- 4 Press **[▶]** or **[MNU]**.
- 5 Turn the **Tuning** control or press **[▲]**/**[▼]** to select the appropriate offset frequency.
 - The selectable range is from 0.00 MHz to 59.95 MHz in steps of 50 kHz.
- 6 Press **[▶]** or **[MNU]** to store the setting.

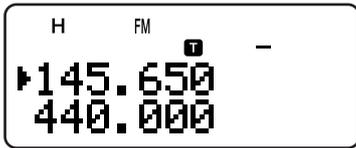
TH-F7E Only: If you have selected “–” for the offset direction, you cannot change the default (–7.6 MHz) offset frequency.

Note: After changing the offset frequency, the new offset frequency will also be used by Automatic Repeater Offset.

■ **Activating Tone Function**

Press **[TONE]** to switch the Tone function ON (or OFF).

- “T” appears when the Tone function is ON.



Note: You cannot use the Tone and CTCSS/DCS functions at the same time. Switching the Tone function ON after activating the CTCSS deactivates the CTCSS/DCS function.

TH-F7E Only: When you access repeaters that require 1750 Hz tones, you need not activate the Tone function. Press **[CALL]** without pressing the **PTT** switch to transmit a 1750 Hz tone (default setting).

■ **Selecting a Tone Frequency**

- 1 While the Tone function is ON, press **[F]**, **[TONE]**.
- 2 Turn the **Tuning** control or press **[▲]/[▼]** to select the desired tone frequency.



- 3 Press **[▶]** or **[MNU]** to complete the setting.

Available Tone frequencies

No.	Freq. (Hz)						
01	67.0	12	97.4	23	141.3	34	206.5
02	69.3	13	100.0	24	146.2	35	210.7
03	71.9	14	103.5	25	151.4	36	218.1
04	74.4	15	107.2	26	156.7	37	225.7
05	77.0	16	110.9	27	162.2	38	229.1
06	79.7	17	114.8	28	167.9	39	233.6
07	82.5	18	118.8	29	173.8	40	241.8
08	85.4	19	123.0	30	179.9	41	250.3
09	88.5	20	127.3	31	186.2	42	254.1
10	91.5	21	131.8	32	192.8		
11	94.8	22	136.5	33	203.5		

Note: 42 different tones are available for TH-F6A/ TH-F7E. These 42 tones includes 37 EIA standard tones and 5 non-standard tones.

TH-F7E only:

- ◆ To transmit a 1750 Hz tone, simply press **[CALL]** without pressing the **PTT** switch (default setting). Release **[CALL]** to quit transmitting. You can also make the transceiver remain in the transmit mode for 2 seconds after releasing **[CALL]**; a 1750 Hz tone is not continuously transmitted. Access Menu No. 24 (1750 HOLD) and select “ON”.
- ◆ If you desire to assign **[CALL]** for recalling the Call channel in place of transmitting the 1750 Hz tone, access Menu No. 23 (CALL KEY) and select “CALL”.

AUTOMATIC REPEATER OFFSET

This function automatically selects an offset direction, according to the frequency that you select on the 144 MHz and 220 MHz (TH-F6A only) bands. The transceiver is programmed for offset direction as shown below. To obtain an up-to-date band plan for repeater offset direction, contact your national Amateur Radio association.

TH-F6A (U.S.A. and Canada)

This complies with the standard ARRL band plan.

144.0	145.5	146.4	147.0	147.6
145.1	146.0	146.6	147.4	148.0 MHz

S	-	S	+	S	-	+	S	-
---	---	---	---	---	---	---	---	---

S: Simplex

TH-F7E (Europe/ Others)

144.0	145.6	145.8	146.0 MHz
-------	-------	-------	-----------

S	-	S
---	---	---

S: Simplex

Note: Automatic Repeater Offset does not function when Reverse is ON. However, pressing **[REV]** after Automatic Repeater Offset has selected an offset (split) status, exchanges the receive and transmit frequencies.

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/[▼]** to select Menu No. 5 (AUTO OFFSET).

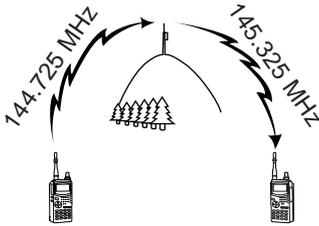
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/[▼]** switch the function ON or OFF.

- 5 Press **[▶]** or **[MNU]** to store the setting.

5 OPERATING THROUGH REPEATERS

REVERSE FUNCTION

The reverse function exchanges a separate receive and transmit frequency. So, while using a repeater, you can manually check the strength of a signal that you receive directly from the other station. If the station's signal is strong, both stations should move to a simplex frequency and free up the repeater.

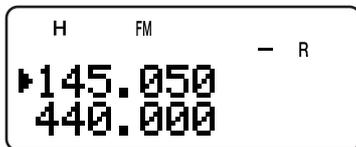


TX: 144.725 MHz TX: 144.725 MHz TX: 144.725 MHz TX: 145.325 MHz
RX: 145.325 MHz RX: 145.325 MHz RX: 145.325 MHz RX: 144.725 MHz

To swap the transmit and receive frequencies:

Press **[REV]** to switch the Reverse function ON (or OFF).

- "R" appears when the function is ON.

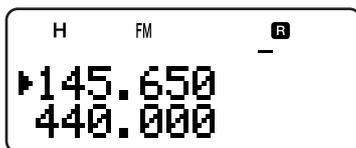


AUTOMATIC SIMPLEX CHECK (ASC)

While using a repeater, the ASC function periodically checks the strength of a signal that you are receiving directly from the other station. If the station's signal is strong enough to allow direct contact without a repeater, "R" indicator on the display starts blinking.

Press **[REV]** (1 s) to switch the function ON.

- "R" appears when the function is ON.



- While direct contact is possible, "R" icon blinks.
- To quit the function, press **[REV]** momentarily.

Note:

- ◆ Pressing the **PTT** switch causes "R" icon to quit blinking.
- ◆ ASC does not function if your transmit and receive frequencies are the same (simplex operation).
- ◆ ASC does not function while scanning.
- ◆ Activating ASC while using Reverse switches Reverse OFF.
- ◆ If you recall a memory channel or the Call channel that contains a Reverse ON status, ASC is switched OFF.
- ◆ ASC causes received audio to be momentarily intermitted every 3 seconds.

TONE FREQ. ID SCAN

This function scans through all tone frequencies to identify the incoming tone frequency on a received signal. You may use the function to find which tone frequency is required by accessing your local repeater.

- 1 While the Tone function is ON, press **[F]**, **[TONE]** (1 s) to start the Tone Freq. ID scan.

- When the transceiver receives the signal, the scan starts.



- To reverse the scan direction, turn the **Tuning** control or press **[▲]/[▼]**.
 - To quit the function, press **[PTT]** or **[◀]**.
 - When the tone frequency is identified, a beep sounds and the identified frequency appears.
- 2 Press **[▶]** to program the identified frequency in place of the current tone frequency.
 - Press **[◀]** if you do not want to program the identified frequency.
 - Press **[▲]/[▼]** while the identified frequency is blinking, to resume scanning.

Note: Some repeaters do not re-transmit the access tone in the downlink signal. In this case, check the other station's uplink signal to detect the repeater access tone.

MEMORY CHANNELS

In memory channels, you can store frequencies and related data that you often use. Then you need not reprogram those data every time. You can quickly recall a programmed channel through simple operation. A total of 400 memory channels are available for storing the frequencies, modes and other operating conditions of the A and B-bands.

SIMPLEX & REPEATER OR ODD-SPLIT MEMORY CHANNEL?

You can use each memory channel as a simplex & repeater channel or an odd-split channel. Store only one frequency to use as a simplex & repeater channel or two separate frequencies to use as an odd-split channel. Select either application for each channel depending on the operations you have in mind.

Simplex & repeater channels allow:

- Simplex frequency operation
- Repeater operation with a standard offset (if an offset direction is stored)

Odd-split channels allow:

- Repeater operation with a non-standard offset

Note: Not only can you store data in memory channels, but you can also overwrite existing data with new data.

The data listed below can be stored in each memory channel:

Parameter	Simplex & Repeater	Odd-split
Receive frequency	Yes	Yes
Transmit frequency		Yes
Tone frequency	Yes	Yes
Tone ON	Yes	Yes
CTCSS frequency	Yes	Yes
CTCSS ON	Yes	Yes
DCS code	Yes	Yes
DCS ON	Yes	Yes
Offset direction	Yes	N/A
Offset frequency	Yes	N/A
Reverse ON	Yes	N/A
Frequency step size	Yes	Yes
Memory channel lockout	Yes	Yes
Memory channel name	Yes	Yes
FINE tuning ON	Yes	Yes
Mode selection	Yes	Yes

Yes: Can be stored in memory.

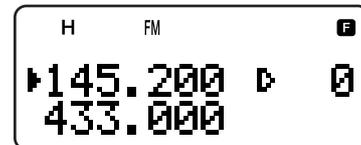
N/A: Cannot be stored in memory.

STORING SIMPLEX FREQUENCIES OR STANDARD REPEATER FREQUENCIES

- 1 Press **[VFO]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired frequency in the amateur radio bands.
 - You can also directly enter desired frequency using the keypad {page 7}.
- 4 If storing a standard repeater frequency, select the following data:
 - Offset direction {page 12}
 - Tone function, if necessary {page 13}
 - CTCSS/ DCS function, if necessary {pages 28, 29}

If storing a simplex frequency, you may select other related data (CTCSS or DCS settings, etc.).

- 5 Press **[F]**.



- A memory channel number appears and blinks.
- “**F**” indicates the current channel is empty; “**0**” appears if the channel contains data.
- Memory channel number “L0”/ “U0” ~ “L9”/ “L9” {page 23}, “I-0” ~ “I-9” {page 20}, and “Pr1” and “Pr2” {page 25} are reserved for other functions. Do not use these memories to store the TX/ RX data.

- 6 Turn the **Tuning** control or press **[▲]/ [▼]** to select the memory channel in which you want to store the data.
- 7 Press **[MR]** to store the data to the channel.

STORING ODD-SPLIT REPEATER FREQUENCIES

Some repeaters use a receive and transmit frequency pair with a non-standard offset. If you store two separate frequencies in a memory channel, you can operate on those repeaters without programming the offset frequency and direction.

- 1 Store the desired receive frequency and related data by following the procedure given for simplex or standard repeater frequencies, above.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select the desired transmit frequency.
- 3 Press **[F]**, **[MR]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select the memory channel you programmed in step 1.
- 5 Press **[PTT]+[MR]**.
 - The transmit frequency is stored in the memory channel.

Note: When you recall an odd-split memory channel, “+” and “-” appear on the display. To confirm the transmit frequency, press **[REV]**.

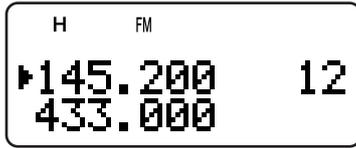
8 MEMORY CHANNELS

RECALLING A MEMORY CHANNEL

There are 2 ways of recalling the desired memory channel.

■ Using the Tuning control or ▲/▼ keys

- 1 Press **[MR]** to enter Memory Recall mode.
 - The memory channel used last is recalled.



- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired memory channel.
 - You cannot recall an empty memory channel.
 - To restore VFO mode, press **[VFO]**.

Note: If the "CURRENT BAND" is selected for Menu No. 3 (MR METHOD), only memory channels that have the same band data can be recalled (see below).

■ Using a Numeric keypad

You can also recall a memory channel by entering a desired memory channel number with the keypad.

- 1 Select the desired band.
- 2 Press **[MR]** to enter Memory Recall mode.
- 3 Press **[ENT]**, then enter the channel number using 3 digits.
 - For example, to recall channel 12, press **[ENT]**, **[0]**, **[1]**, **[2]**.
 - You can shorten the entry for memory channels that are less than 100 by pressing **[ENT]** after entering the channel number. For example, to recall memory channel 9, press **[ENT]**, **[9]**, **[ENT]**.

Note:

- ◆ You cannot recall an empty memory channel. An error beep sounds.
- ◆ When you recall an odd-split memory channel, "+" and "-" appear on the display. Press **[REV]** to display the transmit frequency.
- ◆ After recalling a memory channel, you may program data such as Tone or CTCSS. These settings, however, are cleared once you select another channel or the VFO mode. To permanently store the data, overwrite the channel contents (page 15).

CLEARING A MEMORY CHANNEL

To clear an individual memory channel:

- 1 Recall the memory channel you want to erase.
- 2 Switch the transceiver OFF.
- 3 Press **[MR]+ [ϕ]**.
 - An erase confirmation message appears.



- 4 Press **[MR]** to erase the channel data.
 - The contents of the memory channel are erased.
 - To quit clearing the memory channel, press any key other than **[MR]**.

Note:

- ◆ If you clear the information channel data, the data will be set to the factory default values.
- ◆ You can also clear the Priority channel data, and L0/U0 ~ L9/U9 data.

MEMORY RECALL MODE

Since the transceiver has more than 400 memory channels, it sometimes takes time to search for your desired memory channel. By default, the transceiver can recall all memory channels when **[MR]** is pressed, regardless of the current operating band. However, you can configure the transceiver to recall only the memory channels that have the same band information. For example, when you operate on the 144 MHz band in VFO mode, pressing **[MR]** recalls only the memory channels that have 144 MHz band information. To change the memory recall mode:

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 3 (MR METHOD).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select "CURRENT BAND".
- 5 Press **[▶]** or **[MNU]** to store the setting.

When you press **[MR]** in VFO mode, only memory channels that have the same band data are recalled. To return to the default memory recall mode, repeat step 1 to 5 (above) and select "ALL BANDS" in step 4.

NAMING A MEMORY CHANNEL

You can name memory channels using up to 8 alphanumeric characters. When you recall a named memory channel, its name appears on the display in place of the stored frequency. Names can be call signs, repeater names, cities, names of people, etc.

- 1 Press **[MR]** to recall your desired memory channel.
- 2 Press **[F]**, **[MN<->f]** to enter memory name input mode.
 - The entry cursor appears.



- 3 Turn the **Tuning** control or press **[▲]/[▼]** to select the first character.
 - You can enter alphanumeric characters plus special ASCII characters. Refer to the following table for the available characters.
- 4 Press **[▶]**.
 - The cursor moves to the next digit.
- 5 Repeat steps 3 and 4 to enter up to 8 digits.
 - Pressing **[▶]** after selecting the 8th digit completes the programming.
 - To complete programming after entering less than 8 digits, press **[▶]** twice.
 - Press **[◀]** to move the cursor back.
 - Pressing **[F]** deletes the character at the cursor position.

You can also use the keypad to enter alphanumeric characters, in step 3. For example, each press of **[2]** sets the entry as a, b, c, 2, A, B, C, and then back to a. Press **[0]** to enter a space or 0.

After storing a memory name, pressing **[MN<->f]** switches the display between the memory name and the frequency.

Note:

- ◆ You can also name the DTMF memory channels (page 31) and Information Channels (page 20) but you cannot name the Call channel (page 19).
- ◆ You cannot assign a memory name to a channel that does not contain data.
- ◆ You can overwrite stored names by repeating steps 1 to 5.
- ◆ The stored name is erased when you clear the memory channel data.

Available characters using the Tuning control

Available characters									
A	B	C	D	E	F	G	H	I	J
K	L	M	N	O	P	Q	R	S	T
U	V	W	X	Y	Z	[]	^	_
`	a	b	c	d	e	f	g	h	i
j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	{		}
~	\	SP	!	"	#	\$	%	&	'
()	*	+	,	-	.	/	0	1
2	3	4	5	6	7	8	9	:	;
<	=	>	?	@					
Additional characters for the TH-F7E									
À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É
Ê	Ë	Ì	Í	Î	Ï	Ð	Ñ	Ò	Ó
Ô	Õ	Ö	Š	Ø	Ù	Ú	Û	Ü	Ý
Š	ß	œ	à	á	â	ã	ä	å	æ
ç	è	é	ê	ë	ì	í	î	ï	ð
ñ	ò	ó	ô	õ	ö	œ	ø	ù	ú
û	ü	ý	ÿ	ÿ					

Available characters using the numeric keypad

DTMF key	Available characters						
1	q	z	1	Q	Z		
2	a	b	c	2	A	B	C
3	d	e	f	3	D	E	F
4	g	h	i	4	G	H	I
5	j	k	l	5	J	K	L
6	m	n	o	6	M	N	O
7	p	r	s	7	P	R	S
8	t	u	v	8	T	U	V
9	w	x	y	9	W	X	Y
0	space	0					
#	?	!	'	.	,	-	/
	&	#	()	<	>	;
	:	"	@				

8 MEMORY CHANNELS

MEMORY CHANNEL GROUPS

400 memory channels have been divided into 8 groups of 50. Group 0 contains memory channel numbers 0 ~ 49, group 1 is 50 ~ 99, group 2 is 100 ~ 149, and so on. You can categorize each group to store similar data, same frequency bands or same modes for ease of use.

Group #	Memory channel	Group #	Memory channel
Group 0	0 ~ 49	Group 4	200 ~ 249
Group 1	50 ~ 99	Group 5	250 ~ 299
Group 2	100 ~ 149	Group 6	300 ~ 349
Group 3	150 ~ 199	Group 7	350 ~ 399

RECALLING A MEMORY CHANNEL USING MEMORY GROUP FUNCTION

It is sometimes a tedious endeavor to scroll through 400 memory channels sequentially. However, using a Group memory recall function, you can access your desired memory channel numbers more quickly.

- 1 Press **[MR]** to enter Memory Recall mode.
- 2 While pressing and holding **[LAMP]**, turn the **Tuning** control to select a group.
 - Each click of the **Tuning** control, the lowest memory channel number of each group is recalled. For example, if you have the following memory channels that contain data:

Group #	Memory channels that contain the data					
Group 0	0	2	10	15	30	45
Group 1	50	61	65	78	98	
Group 2	103	111	123			
Group 3	152	166				
Group 4						
Group 5	260	280				
Group 6	305	322	333	345		
Group 7	399					

Memory channels 0, 50, 103, 152, 260, 305, 399, and then 0 are recalled sequentially while pressing and holding **[LAMP]**.

- 3 Release **[LAMP]** and turn the **Tuning** control to select the desired memory channels within the selected group.

Note: If you have configured the Menu No. 3 as "CURRENT BAND" (page 16), only memory channels that have the same frequency band are recalled.

ERASING MEMORY CHANNELS USING MEMORY GROUP DELETE

Instead of erasing each unnecessary channel one by one, you can erase an entire group of memory channels at once. For example, if you erase group 2 memory channels, all the data in memory channels 100 ~ 149 are erased.

- 1 Press **[MR]**.
 - Turn the **Tuning** control or press **[▲]**/**[▼]** to select a memory channel in the group you want to erase (for example, memory channel No. 111, in Group 2).
- 2 Press **[ϕ]** (POWER) to turn the transceiver OFF.
- 3 Press **[ϕ]** (POWER) + **[MHz]**.
 - An erase confirmation message appears.



- 4 Press **[MR]**, **[▶]** or **[MNU]** to proceed. Otherwise, press any other key to cancel the erase.

MEMORY TRANSFER

■ Memory → VFO Transfer

After retrieving frequencies and associated data from Memory Recall mode, you can copy the data to the VFO. This function is useful, for example, when the frequency you want to monitor is near the frequency stored in a memory channel.

- 1 Press **[MR]**, then turn the **Tuning** control to recall a desired memory channel.
- 2 Press **[F]**, **[MR]** to copy the memory channel data to the VFO.

■ Channel → Channel Transfer

You can also copy channel information from one memory channel to another. This function is useful when storing frequencies and associated data that you temporarily change in Memory Recall mode.

- 1 Press **[MR]**, then turn the **Tuning** control to recall a desired memory channel.
- 2 Press **[F]**.
- 3 Select the memory channel where you would like the data copied, using the **Tuning** control.
- 4 Press **[MR]**.

Channel 00 ~ 399	➔	Channel 00 ~ 399
Receive frequency	➔	Receive frequency
Transmit frequency	➔	Transmit frequency
Tone frequency	➔	Tone frequency
Shift direction	➔	Shift direction
CTCSS frequency	➔	CTCSS frequency
DCS code	➔	DCS code
Tone/ CTCSS/ DCS ON/ OFF status	➔	Tone/ CTCSS/ DCS ON/ OFF status
Offset direction	➔	Offset direction
Reverse ON	➔	Reverse ON
Frequency step size	➔	Frequency step size
Memory channel name	➔	Memory channel name
FINE tuning ON	➔	FINE tuning ON
Mode selection	➔	Mode selection
Memory Channel Lockout ON/ OFF	➔	Memory Channel Lockout ON/ OFF

Channel 0 ~ 399	➔	L0/U0~L9/U9, Pr1, Pr2
Receive frequency	➔	Receive frequency
Transmit frequency	➔	Transmit frequency
Tone frequency	➔	Tone frequency
Shift direction	➔	Shift direction
CTCSS frequency	➔	CTCSS frequency
DCS code	➔	DCS code
Tone/ CTCSS/ DCS ON/ OFF status	➔	Tone/ CTCSS/ DCS ON/ OFF status
Offset direction	➔	Offset direction
Reverse ON	➔	Reverse ON
Frequency step size	➔	Frequency step size
Memory channel name	➔	Memory channel name
FINE tuning ON	➔	FINE tuning ON
Mode selection	➔	Mode selection
Memory Channel Lockout ON	➔	Memory Channel Lockout OFF

The tables above illustrate how data is transferred between memory channels.

CALL CHANNEL

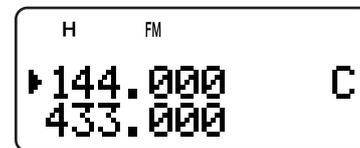
The Call channel can be recalled instantly no matter what frequency the transceiver is operating on. For instance, you may use the Call channel as an emergency channel within your group. In this case, the Call scan {page 24} will be useful.

The default Call channel frequencies are 144.000 MHz for the 144 MHz band, 223.000 MHz for 220 MHz band (TH-F6A), 430.000 MHz (TH-F7E)/ 440.000 MHz (TH-F6A) for the 430/ 440 MHz band. Each Call channel can be reprogrammed either as a simplex or odd-split channel.

Note: Unlike memory channels 0 to 399, the Call channel cannot be cleared. Clearing the Call channel will set it to the factory default values.

■ Recalling the Call Channel

- 1 Press **[BAND]** to select an amateur radio band.
- 2 Press **[CALL]** to recall the Call channel for that operating band.
 - The call channel frequency and "C" appear.



- To return to the previous frequency, press **[CALL]** again.

■ Reprogramming the Call Channel

- 1 Press **[BAND]** to select your desired amateur radio band.
- 2 Select your desired frequency and related data (Tone, CTCSS, DCS, or Shift, etc.).
 - When you program the Call channel as an odd-split channel, select a receive frequency first.
- 3 Press **[F]**, **[CALL]**.
 - The selected frequency and related data are stored in the Call channel for the selected band.

To also store a separate transmit frequency, continue with the following steps.

- 4 Select the desired transmit frequency.
- 5 Press **[F]**.
- 6 Press **[PTT]+[CALL]**.
 - The separate transmit frequency is stored in the Call channel.

Note:

- ◆ The transmit frequency must be on the same band as the receive frequency band.
- ◆ Call channel data is shared between the A and B-band.
- ◆ Transmit offset status and Reverse status are not stored in an odd-split Call channel.
- ◆ To store transceiver configurations other than frequencies, select the configurations in step 3 not step 5.

8 MEMORY CHANNELS

INFORMATION CHANNELS

10 Information channels are available for storing radio broadcasting service frequencies, such as weather radio stations and community FM broadcasting stations. For your conveniences, pressing **[INFO]** instantly recalls the Information channel to B-band. Unlike regular memory channels, you cannot store a transmit frequency in an Information channel. The following frequency data is stored by default.

Channel number	Frequency/ Mode/ Memory Name	
	TH-F6A	TH-F7E
I-1	162.550 MHz/ FM/ WEATHER	No data (Empty)
I-2	162.400 MHz/ FM/ WEATHER	
I-3	162.475 MHz/ FM/ WEATHER	
I-4	162.425 MHz/ FM/ WEATHER	
I-5	162.450 MHz/ FM/ WEATHER	
I-6	162.500 MHz/ FM/ WEATHER	
I-7	162.525 MHz/ FM/ WEATHER	
I-8	161.650 MHz/ FM/ WEATHER	
I-9	161.775 MHz/ FM/ WEATHER	
I-0	163.275 MHz/ FM/ WEATHER	

You can revise the default channel data, such as the receiving frequencies, modes, and memory names.

■ Recalling an Information Channel

- 1 Select your desired band.
- 2 Press **[INFO]** to recall the Information channels.
 - “I-n” appears, where “n” is the Information channel number from (“0” ~ “9”).

- If the B-band is selected for operation, you can turn the **Tuning** control or press **[▲]/ [▼]** to select other Information channels.
- To exit the Information channel mode, press **[VFO]** or **[MR]**.

Note: If you press **[MN<->f]**, you can display the receiving frequency in place of the memory name.

■ Reprogramming the Information Channel

- 1 Press **[VFO]**.
- 2 Select a desired frequency and mode.
- 3 Press **[F]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select the memory channel (I-0 to I-9) in which you want to store the data.
- 5 Press **[MR]**.
 - A long beep sounds and the Information channel data is now revised.

CHANNEL DISPLAY

While in this mode, the transceiver displays only memory channel numbers (or memory names if stored) instead of frequencies.

- 1 Press [ϕ] (POWER) + [A/B].
 - The transceiver displays the memory channel number in place of the operating frequencies.
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select your desired memory channel number.

To recover normal operation, press [ϕ] (POWER) + [A/B] again.

Note:

- ◆ *To enter Channel Display mode, you must have at least one memory channel that contains the data.*
- ◆ *If the memory channel contains the memory name data, the memory name is displayed in place of the memory channel number.*

Scan is a useful function for hands-off monitoring of your favorite frequencies. By becoming comfortable with all types of Scan, you will increase your operating efficiency.

This transceiver provides the following types of scans.

Scan Type		Purpose
Normal Scan	Band Scan	Scans the entire band of the frequency you selected
	Program Scan	Scans the specified frequency ranges stored in Memory channels L0/ U0 ~ L9/ U9
	MHz Scan	Scans the frequencies within a 1 MHz range
Memory Scan	All-Channel Scan	Scans all Memory channels, from 0 to 399
	Group Scan	Scans the specified Memory channel groups
Call Scan	VFO	Scans the Call channel and the current VFO frequency
	Memory Channel	Scans the Call channel and the selected Memory channel
Priority Scan		Checks the activities on the specified priority channels every 6 seconds
Information Channel Scan		Scans the Information channels
Visual Scan*	VFO	Scans ± 5 frequencies in the programmed step size near the current operating frequency. The signal strength of each frequency is displayed in a bar-graph
	Memory Channel	Scans the Memory channels and displays the signal strength of each channel in a bar-graph

* Visual Scan graphically shows the busy status of frequencies in a specific range.

Note:

- ◆ While using CTCSS or DCS, Scan unmutes only for the signals that contain the same CTCSS tone or DCS code that you selected.
- ◆ Pressing and holding **[PTT]** causes Scan to stop.
- ◆ Starting Scan switches OFF the Automatic Simplex Checker (ASC) {page 14}.

NORMAL SCAN

When you are operating the transceiver in VFO mode, 3 types of scanning are available: Band Scan, Program Scan, and MHz Scan.

BAND SCAN

The transceiver scans the entire band of the frequency you selected. For example, if you are operating and receiving at 144.525 MHz on the A-band, it scans all the frequencies available for the 144 MHz band. (Refer to receiver VFO frequency range in the specifications {page xx}). When the current VFO receive frequency is outside of the Program Scan frequency range {below}, the transceiver scans the entire frequency range available for the current VFO.

- 1 Press **[VFO]**.
- 2 Press **[BAND]** to select your desired band.
- 3 Turn the **Tuning** control or press **[▲]/ [▼]** to select the frequency outside of the Program Scan frequency range {below}.
- 4 Press **[VFO] (1 s)** to start the Band Scan.
- 5 To stop the Band Scan, press **[VFO]** or **[PTT]**.

Note:

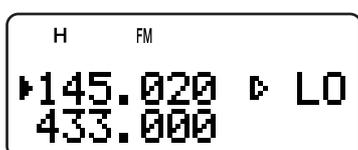
- ◆ While scanning, you can change the scan frequency direction by turning the **Tuning** control or press **[▲]/ [▼]**.
- ◆ If you select a frequency within the L0/ U0 ~ L9/ U9 range in step 3, the Program Scan {below} starts.
- ◆ If you press **[MONI]**, Band Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ The transceiver stops scanning in only the AM and FM modes when it detects a signal.
- ◆ If the Fine Tuning function is ON, scanning does not stop at the busy channels.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F]**, **[F] (1 s)**, **[LAMP]**, **[MONI]**, **[SQL]**, **Tuning** control, **[▲]**, and **[▼]**

PROGRAM SCAN

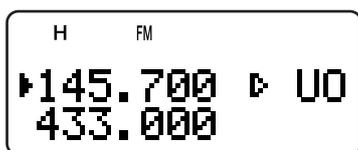
You can limit the scanning frequency range. There are 10 memory channel pairs (L0/ U0 ~ L9/ U9) available for specifying the start and end frequencies. It monitors the range between the start and end frequencies that you have stored in memory channels L0/ U0 to L9/ U9. Before performing the Program Scan, store the Program Scan frequency range to one of the memory channels L0/ U0 ~ L9/ U9.

■ Storing Program Scan Frequency Range

- 1 Press **[VFO]**.
- 2 Press **[BAND]** to select your desired band.
- 3 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired start frequency.
- 4 Press **[F]**, then turn the **Tuning** control or press **[▲]/ [▼]** to select a memory channel from L0 ~ L9.



- 5 Press **[MR]** to store the start frequency in the memory channel.
- 6 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired end frequency.
- 7 Press **[F]**, then Turn the **Tuning** control or press **[▲]/ [▼]** to select the corresponding channel from U0 ~ U9 (you must select the same numeric value as in step 4).
 - For example, if you selected L0 in step 4, you must select U0 in this step.



- 8 Press **[MR]** to store the end frequency in the memory channel.

■ Performing the Program Scan

- 1 Press **[VFO]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select a frequency within the frequency range of memory channel L0/ U0 ~ L9/ U9.
- 3 Press **[VFO] (1 s)** to start the Program Scan.
- 4 To stop the Program Scan, press **[VFO]** or **[PTT]**.

Note:

- ◆ If you press **[MONI]**, Program Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ The transceiver stops scanning only in the AM and FM modes when it detects a signal.
- ◆ If the Fine Tuning function is ON, the scanning does not stop at the busy channels.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F] (1 s)**, **[LAMP]**, **[MONI]**, **[SQL]**, **Tuning** control, **[▲]**, and **[▼]**

MHz SCAN

MHz Scan allows you to scan an entire 1 MHz frequency range within the current VFO frequency.

- 1 Press **[VFO]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select a frequency in which to perform the MHz Scan. If you want to scan the entire 145 MHz frequency, select any frequency between 145.000 and 149.995 MHz (for example, select 145.650 MHz). Scan will operate between 145.000 MHz and 145.999 MHz.
- 3 Press **[MHz] (1 s)** to start the MHz Scan.
- 4 To stop the MHz Scan, press **[MHz]** or **[PTT]**.

Note:

- ◆ If the Fine Tuning function is ON, you cannot perform the MHz Scan.
- ◆ The transceiver stops scanning in only the AM and FM modes when it detects a signal.
- ◆ If you press **[MONI]**, MHz Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F] (1 s)**, **[LAMP]**, **[MONI]**, **[SQL]**, **Tuning** control, **[▲]**, and **[▼]**
- ◆ When the CTCSS or DCS function is activated, the transceiver stops at a busy frequency and decodes the CTCSS tone or DCS code. If the tone or code matches, the transceiver unmutes. Otherwise, it resumes scanning.

14 SCAN

MEMORY SCAN

Memory Scan monitors all memory channels in which you have stored frequencies (All-Channel Scan) or only a desired group of memory channels (Group Scan).

ALL-CHANNEL SCAN

The transceiver scans all of the memory channels in which you have stored frequencies.

- 1 Press **[MR]** (1 s).
 - Scan starts from the last memory channel number and ascends up through the channel numbers (default). Turn the **Tuning** control or press **[▲]**/**[▼]** to change the scanning direction.
 - To jump to a desired channel while scanning, quickly turn the **Tuning** control.
- 2 To stop the All-Channel Scan, press **[MR]** or **[PTT]**.

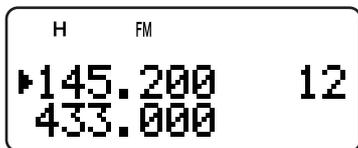
Note:

- ◆ If the Fine Tuning function is ON, you cannot perform the All-Channel Scan.
- ◆ If you press **[MONI]**, All-Channel Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ The transceiver stops scanning in all modes when it detects the signal.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F]** (1 s), **[LAMP]**, **[MONI]**, **[SQL]**, **Tuning** control, **[▲]**, and **[▼]**

GROUP SCAN

In order to easily manage all 400 memory channels, they are divided into 8 groups {page 18}. For the purpose of Group Scan, you can select a particular memory group to be scanned, depending on the situation. Using the Memory Group Link function {below}, you can scan all the linked memory groups.

- 1 Press **[MR]** to enter Memory Scroll mode.
- 2 Turn the **Tuning** control or press **[▲]**/**[▼]** to select a memory channel in the group you want to scan. For example, if you want to scan the group 0 memory channels, recall memory channel 12 (group 0 contains memory channels 0 ~ 49).



- 3 Press **[MHz]** (1 s).
 - The memory channels within the selected group are scanned.
 - If the group is linked to other groups {below}, all the linked groups are also scanned.
- 4 To stop the Group Scan, press **[MHz]** or **[PTT]**.

Note:

- ◆ If the Fine Tuning function is ON, you cannot perform the Group Scan.
- ◆ If you press **[MONI]**, All-Channel Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ The transceiver stops scanning in all modes when it detects a signal.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F]** (1 s), **[LAMP]**, **[MONI]**, **[SQL]**, **Tuning** control, **[▲]**, and **[▼]**

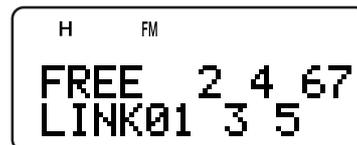
Memory Group Link

Although the 400 memory channels are divided into 8 groups {page 18}, you may sometimes want to scan two or more groups. In this case, use the Memory Group Link function.

- 1 Press **[MNU]** to enter Menu mode.
- 2 Turn the **Tuning** control or press **[▲]**/**[▼]** to select Menu No. 2 (M.GRP LINK).
- 3 Press **[▶]** or **[MNU]**.
 - The memory group numbers appear.



- 4 Move the cursor using **[◀]**/**[▶]**, then turn the **Tuning** control or press **[▲]**/**[▼]** to select or deselect the group to be linked.
 - Linked groups appear at the bottom of the display (in the example below, groups 0, 1, 3 and 5 are linked).



- 5 Press **[MNU]** to store the setting. Otherwise, press **[PTT]** to cancel.

CALL SCAN

A Call channel can be stored for each amateur radio band, such as the 144 MHz, 430/ 440 MHz, and 220 MHz (TH-F6A only) bands {page 19}. You can monitor one of these Call channels and the current operating frequency alternatively.

- 1 Select the frequency (in VFO or Memory Recall mode) you want to monitor.
 - In VFO mode, press **[A/B]** to select the A or B-band. Then, turn the **Tuning** control or press **[▲]/ [▼]** to select the desired frequency.
 - In Memory Recall mode, turn the **Tuning** control or press **[▲]/ [▼]** to select a memory channel you want to monitor.
- 2 Press **[CALL] (1 s)** to start the Call Scan.
- 3 The Call channel for the band and the selected VFO frequency or memory channel are monitored alternatively.
- 4 To stop the Call Scan, press **[PTT]** or **[CALL]**.

Note:

- ◆ If you press **[MONI]**, Call Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ The transceiver stops scanning in all modes when it detects a signal.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F] (1 s)**, **[LAMP]**, **[MONI]**, **[SQL]**, and the **Tuning** control

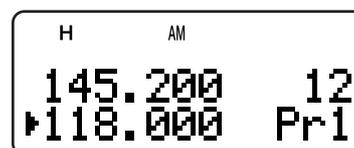
PRIORITY SCAN

You may sometimes want to check your favorite frequency activities while monitoring the A and B-bands. In this case, use the Priority Scan function. It checks the activities of Pr1 and Pr2 channels every 6 seconds, alternatively, using the B-band receiver. If the transceiver detects a signal on Pr1 or Pr2, it recalls the frequency to the B-band receiver.

Note: If you do not operate any control or key for 3 seconds after the signal drops, the transceiver resumes Priority Scan.

■ Programming Priority channels

- 1 Press **[VFO]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired priority channel frequency.
- 3 Select the mode and selective call functions if necessary.
- 4 Press **[F]**.
 - The memory channel number appears.
- 5 Turn the **Tuning** control or press **[▲]/ [▼]** to select "Pr1".



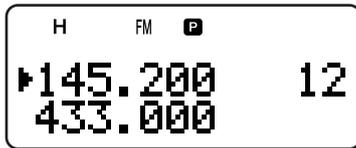
- 6 Press **[MR]** to store the data on the priority channel.
 - If you want to store a second priority channel, repeat steps 1 ~ 6 and select "Pr2" in step 5.

Note: You can program any frequency available on the B-band as a priority channel.

14 SCAN

■ Using Priority Scan

- 1 Press **[F]**, **[BAL]**.



- “P” appears.
 - The transceiver checks for a signal on the Pr1 and Pr2 channels every 6 seconds, alternatively.
 - When the transceiver detects a signal on the priority channel, the B-band frequency changes to the priority channel.
 - If you do not operate any control or key for 3 seconds after the signal drops, the transceiver resumes Priority Scan.
- 2 To quit Priority Scan, press **[F]**, **[BAL]** again.

Note:

- ◆ The signal being received on the B-band may become intermittent because the Priority Scan uses the B-band receiver to check the priority channel(s) activities.
- ◆ If you press any of the keys below during the scan, the transceiver exits the scan: **[A/B]**, **[LAMP]**, **[MONI]**, **[SQL]**, **[F]** (1s), **[BAL]**, and **[F]** then **[BAL]**
- ◆ When a signal is received on a Priority channel with a CTCSS or DCS code programmed, the Priority channel is recalled even if a different selective tone/ code is detected. However, the transceiver only unmutes if the signal has the same CTCSS tone or DCS code.
- ◆ Press and hold **[MONI]** to pause the Priority Scan when the transceiver is not displaying a priority channel. Release **[MONI]** to resume the Priority Scan.

INFORMATION CHANNEL SCAN

Information channel scan is similar to group scan. However, it scans only Information channels.

- 1 Press **[INFO]**.
 - The last Information channel you used is recalled.
- 2 Press **[INFO]** (1 s) to start the Information Channel Scan.
- 3 To stop the Information Channel Scan, press **[INFO]** or **[PTT]**.

Note:

- ◆ If you press **[MONI]**, Information Channel Scan temporarily pauses. Release **[MONI]** to resume scanning.
- ◆ The transceiver stops scanning in all modes when it detects a signal.
- ◆ If you press any of the following keys during the scan, the transceiver exits the Scan: **[F]** (1 s), **[LAMP]**, **[MONI]**, **[SQL]**, **Tuning** control, **[▲]**, and **[▼]**

VISUAL SCAN

While you are receiving, Visual Scan allows you to monitor frequencies near the current operating frequency. Visual Scan graphically displays the busy status of all frequencies in the selected range. You will see a maximum of 7 segments, for each frequency (channel) point that represent relative S-meter levels.

The Visual Scan monitors ± 5 channels (frequencies) by centering on the current channel (frequency). In this way, a total of 11 channels' (frequencies') signal strength status are graphically displayed.

Note: When you perform the Visual scan on the A-band, the transceiver can output the audio. However, when you perform the Visual Scan on the B-band, it cannot output the audio.

■ Using Visual Scan (VFO)

- 1 Select your desired band for Visual Scan.
- 2 Turn the **Tuning** control or press **[▲]**/ **[▼]** to select your desired center frequency.
 - The transceiver scans the 5 upper frequencies and 5 lower frequencies using the current VFO frequency step.
- 3 Press **[F]**, **[INFO]** to start Visual Scan (VFO).
 - The scanning frequency is displayed on the current operating band and the relative S-meter level of each frequency appears on the other band display.
 - To pause Scan, press and hold **[MONI]**. While the Visual Scan is paused, you can monitor the paused frequency. Release **[MONI]** to resume the Visual Scan.
- 4 To change the current scanning frequency, Turn the **Tuning** control or press **[▲]**/ **[▼]**.
 - The displayed frequency changes and the cursor moves.
- 5 To stop the Visual Scan, press **[F]**, **[INFO]**.

Note:

- ◆ If you press **[MONI]**, Visual Scan temporarily pauses. Release **[MONI]** to resume scanning. When it is paused, the center frequency bar-graph blinks.
- ◆ Although you can perform the Visual Scan on the A or B-band, the B-band cannot output the audio during the scan.
- ◆ You can press **[PTT]** or **[CALL]** (if 1750 Hz is programmed) to transmit during the scan.
- ◆ If the Fine Tuning function is ON, the Visual Scan cancels the FINE function and automatically adjusts the frequency to the next available frequency.

■ Using Visual Scan (Memory Channel)

- 1 Press **[MR]** to enter Memory Recall mode.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select your desired center memory channel.
- 3 Press **[F]**, **[INFO]** to start the Visual Scan.
- 4 The transceiver start scanning the 5 upper memory channels and 5 lower memory channels, by centering the selected memory channel.
 - The current scanning memory channel number and frequency are displayed on the current operating band. On the other band, the relative S-meter level of each frequency channel is displayed.
 - To pause Scan, press **[MONI]**. While the Visual Scan is paused, you can monitor the paused frequency. Press **[MONI]** again to resume the Visual Scan.
- 6 To change the current scanning channel, turn the **Tuning** control or press **[▲]/ [▼]**.
- 7 To stop the Visual Scan, press **[F]**, **[INFO]**.

Note:

- ◆ If you press **[MONI]**, Visual Scan temporarily pauses. Release **[MONI]** to resume scanning. When it is paused, the center frequency bar-graph blinks.
- ◆ Although you can perform the Visual Scan on the A or B-band, the B-band cannot output the audio during the scan.
- ◆ You can press **[PTT]** or **[CALL]** (if 1750 Hz is programmed) to transmit during the scan.
- ◆ If the Fine Tuning function is ON, the Visual Scan cancels the FINE function and automatically adjusts the frequency to the next available frequency.

SCAN RESUME METHOD

The transceiver stops scanning at the frequency (or memory channel) where a signal is detected. It then continues or stops scanning according to which resume mode you have selected. You can choose one of the following modes. The default is Time-operated mode.

• Time-Operated mode (default)

The transceiver remains on a busy frequency (or memory channel) for approximately 5 seconds, then continues to scan, even if the signal is still present.

• Carrier-Operated mode

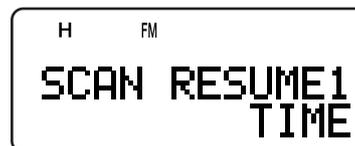
The transceiver remains on the busy frequency (or memory channel) until the signal drops out. There is a 2 second delay between signal dropout and scan resumption.

• Seek mode

The transceiver moves to a frequency or memory channel where a signal is present and stops.

To change the scan resume method:

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 1 (SCAN RESUME).

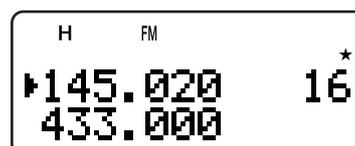


- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select "TIME" (Time-Operated mode), "CARRIER" (Carrier-Operated mode), or "SEEK" (Seek mode).
- 5 Press **[▶]** or **[MNU]** to store the setting. Otherwise, press **[◀]** or **[PTT]** to cancel.

MEMORY CHANNEL LOCKOUT

You can lock out memory channels that you prefer not to monitor during Memory Scan.

- 1 Press **[MR]** to enter Memory Recall mode.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select the memory channel to be locked out.
- 3 Press **[F]**, **[MHz]**.
 - "★" appears at the top right of the memory channel number, indicating the channel is locked out.



- 4 To unlock the memory channel, repeat steps 1 ~ 3.
 - "★" disappears.

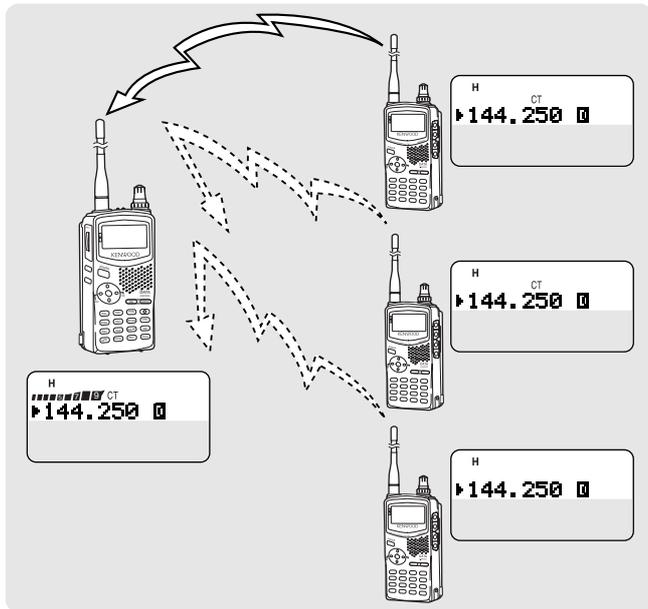
SELECTIVE CALL

CTCSS and DCS

You may sometimes want to hear calls from only specific persons or groups. In this case, use the selective call function. This transceiver is equipped with CTCSS (Continuous Tone Coded Squelch System) and DCS (Digital Coded Squelch). These selective calls allow you to ignore (not hear) unwanted calls from other persons who are using the same frequency. The transceiver unmutes only when it receives the signal having the same CTCSS tone or DCS code.

Note:

- ◆ CTCSS and DCS do not cause your conversation to be private or scrambled. It only relieves you from listening to unwanted conversations.
- ◆ CTCSS and DCS function in only FM mode.

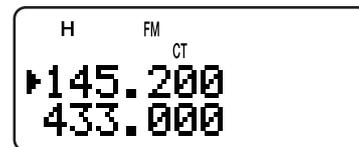


CTCSS (Continuous Tone Coded Squelch System)

A CTCSS tone is a sub-audible tone and is selectable from among the 42 tone frequencies listed in the table on the following page. The list includes 37 EIA standard tones and 5 non-standard tones. You can select one of the tones to use as a CTCSS tone.

USING CTCSS

- 1 Press **[TONE]** until "CT" appears.
 - Each time you press **[TONE]**, the icon cycles as follows: "T" (TONE) → "CT" (CTCSS) → "DCS" (DCS) → " " (OFF) → "T" (TONE).



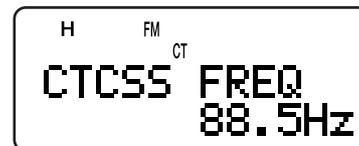
When the CTCSS function is ON, you will hear calls only when the selected CTCSS tone is received. To answer the call, press and hold the **PTT** switch, then speak into the microphone.

Note:

- ◆ You cannot use the CTCSS and Tone/DCS functions simultaneously. Switching the CTCSS function ON after having activated the Tone/DCS functions deactivates the Tone/DCS functions.
- ◆ If you select a high CTCSS frequency, receiving audio or noise that contains the same frequency portions may cause CTCSS to function incorrectly. To prevent noise from causing this problem, select an appropriate squelch level {page x}.

SELECTING A CTCSS FREQUENCY

- 1 While in CTCSS mode {above}, press **[F]**, **[TONE]**.
 - The current CTCSS frequency appears.

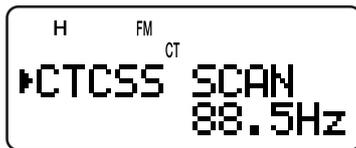


- 2 Turn the **Tuning** control or press **[▲]**/**[▼]** to select your desired CTCSS frequency.
 - The selectable CTCSS frequencies are the same as those for the Tone frequency. Refer to the table on the following page for the available CTCSS frequencies.
- 3 Press **[▶]** or **[MNU]** to store the new setting. Otherwise, press **[◀]** or **[PTT]** to cancel.

CTCSS FREQ. ID SCAN

This function scans through all CTCSS frequencies to identify the incoming CTCSS frequency on the received signal. You may find this useful when you cannot recall the CTCSS frequency that the other persons in your group are using.

- 1 While the CTCSS function is ON, press **[TONE]** (1 s) to start the CTCSS Freq. ID Scan function.



- To reverse the scan direction, turn the **Tuning** control or press **[▲]/[▼]**.
 - To quit the function, press **[◀]**.
 - When a CTCSS frequency is identified, the identified frequency appears and blinks.
- 2 Press **[▶]** or **[MNU]** to program the identified frequency in place of the current CTCSS frequency. Otherwise, press **[◀]** if you do not want to program the identified frequency.
 - Turn the **Tuning** control or press **[▲]/[▼]** while the identified frequency is blinking to resume scanning.

Available CTCSS frequencies

No.	Freq. (Hz)						
01	67.0	12	97.4	23	141.3	34	206.5
02	69.3	13	100.0	24	146.2	35	210.7
03	71.9	14	103.5	25	151.4	36	218.1
04	74.4	15	107.2	26	156.7	37	225.7
05	77.0	16	110.9	27	162.2	38	229.1
06	79.7	17	114.8	28	167.9	39	233.6
07	82.5	18	118.8	29	173.8	40	241.8
08	85.4	19	123.0	30	179.9	41	250.3
09	88.5	20	127.3	31	186.2	42	254.1
10	91.5	21	131.8	32	192.8		
11	94.8	22	136.5	33	203.5		

Note:

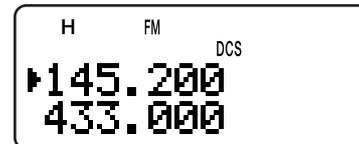
- ◆ Received signals are monitored through the speaker while scanning is in progress.
- ◆ If the CTCSS function is activated for both the A and B-band, the scan speed may be slower.

DCS (Digital Coded Squelch)

DCS is similar to CTCSS. However, instead of using an analog signal, it uses a continuous sub-audible digital wave form that represents a 3-digit octal number. You can select a DCS code from among the 104 DCS codes listed in the table below.

USING DCS

- 1 Press **[TONE]** until "DCS" appears.
 - Each time you press **[TONE]**, the icon cycles as follows: "T" (TONE) → "CT" (CTCSS) → "DCS" (DCS) → " " (OFF) → "T" (TONE).

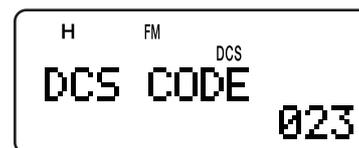


When the DCS function is ON, you will hear calls only when the selected DCS code is received. To answer the call, press and hold the **PTT** switch, then speak into the microphone.

Note: You cannot use the DCS function and CTCSS/Tone functions simultaneously. Switching the DCS function ON after having activated the CTCSS/Tone functions deactivate the CTCSS/Tone functions.

SELECTING A DCS CODE

- 1 While in DCS mode {above}, press **[F]**, **[TONE]**.
 - The current DCS code appears.



- 2 Turn the **Tuning** control or press **[▲]/[▼]** to select your desired DCS code.
 - The available DCS codes are shown in the following table.

023	065	132	205	255	331	413	465	612	731
025	071	134	212	261	332	423	466	624	732
026	072	143	223	263	343	431	503	627	734
031	073	145	225	265	346	432	506	631	743
032	074	152	226	266	351	445	516	632	754
036	114	155	243	271	356	446	523	654	
043	115	156	244	274	364	452	526	662	
047	116	162	245	306	365	454	532	664	
051	122	165	246	311	371	455	546	703	
053	125	172	251	315	411	462	565	712	
054	131	174	252	325	412	464	606	723	

- 3 Press **[▶]** or **[MNU]** to store the new setting. Otherwise, press **[◀]** or **[PTT]** to cancel.

7 SELECTIVE CALL

DCS CODE ID SCAN

This function scans through all DCS codes to identify the incoming DCS code on the received signal. You may find this useful when you cannot recall the DCS code that the other persons in your group are using.

- 1 While in DCS mode, press **[TONE] (1 s)** to start the DCS Code ID Scan function.
 - To reverse the scan direction, turn the **Tuning** control or press **[▲]/ [▼]**.
 - To quit the function, press **[◀]**.
 - When a DCS code is identified, the identified code appears and blinks.
- 2 Press **[▶]** or **[MNU]** to program the identified frequency in place of the current DCS code. Otherwise, press **[◀]** if you do not want to program the identified code.
 - Turn the **Tuning** control or press **[▲]/ [▼]** while the identified DCS code is blinking to resume scanning.

Note:

- ◆ *Received signals are monitored through the speaker while scanning is in progress.*
- ◆ *If the DCS function is activated for both the A and B-band, the scan speed may be slower.*

DTMF FUNCTIONS

The keys on the keypad also function as DTMF keys; the 12 keys found on a push-button telephone plus 4 additional keys (A, B, C, D). This transceiver also provides 10 dedicated DTMF memory channels. You can store a DTMF number (16 digits max.) with a memory name (8 digits max.) in each of the channels to recall later for a speed dialing.

Many repeaters in the U.S.A. and Canada offer a service called Autopatch. You can access the public telephone network via such a repeater by sending DTMF tones. For further information, consult your local repeater reference.

MANUAL DIALING

Manual Dialing requires only two steps to send DTMF tones.

- 1 Press and hold the **PTT** switch to transmit.
- 2 While transmitting, press the keys in sequence on the keypad to send DTMF tones.
 - The corresponding DTMF tones are transmitted and monitored through the speaker.

Freq. (Hz)	1209	1336	1477	1633
697	1	2	3	A
770	4	5	6	B
852	7	8	9	C
941	*	0	#	D

■ TX Hold

This function makes the transceiver remain in transmit mode for 2 seconds after you release each key. So you can release the **PTT** switch while sending the DTMF tones.

- 1 Press **[MNU]** to enter Menu mode.
- 2 Turn the **Tuning** control or press **[▲]/[▼]** to select the Menu No. 12 (DTMF HOLD).
- 3 Turn the **Tuning** control or press **[▲]/[▼]** to select "ON".
- 4 Press **[▶]** or **[MNU]** to store the setting. Otherwise, press **[◀]** or **[PTT]** to cancel.

AUTOMATIC DIALER

If you use the 10 dedicated memory channels to store DTMF numbers, you need not remember a long string of digits.

■ Storing a DTMF Number in Memory

Note: Audible DTMF tones from other transceivers near you (or from your own speaker) may be picked up by your microphone. If so, you may fail to correctly program a DTMF number.

- 1 Press **[MNU]** to enter Menu mode.
 - 2 Turn the **Tuning** control or press **[▲]/[▼]** to select the Menu No. 10 (DTMF STORE).
 - 3 Turn the **Tuning** control or press **[▲]/[▼]** to select a desired DTMF memory channel number from 0 to 9.
 - 4 Press **[▶]** or **[MNU]**.
 - The display for entering a memory name appears; the first digit blinks.
 - To skip naming the channel, press **[▶]** or **[MNU]** again. You can jump to step 8.
 - 5 Turn the **Tuning** control or press **[▲]/[▼]** to select a character.
 - You can enter alphanumeric characters plus special ASCII characters.
 - **[MONI]** to delete a character on the cursor.
 - You can also use the numeric keypad to enter a character (Special ASCII characters are not available).
 - Press **[LAMP]**+turning **Tuning** control to jump to the first character of each character type in the ASCII table.
 - 6 Press **[▶]** to move the cursor to the next digit.
 - 7 Repeat steps 5 and 6 to enter up to 8 digits.
 - Pressing **[▶]** after selecting the 8th digit causes the cursor to move to the start of the next field.
- To complete programming the name less than 8 digits, press **[▶]** twice.

8 DTMF FUNCTIONS

- Each press of [◀] causes the cursor to move backward.

- 8 Press the keys in sequence on the keypad to enter a DTMF number with up to 16 digits.
- You can also turn the **Tuning** control or press [▲]/ [▼] to select the required DTMF number for each digit. Select a space if you want to put a pause.
- 9 Press [▶] or [MNU] to complete the programming.

You can confirm the stored DTMF number by using steps 1 to 3.

You can also use the keypad to enter alphanumeric characters in step 5. For example, each press of [BAND] switches entry as A, B, C, a, b, c, then 2.

■ Transmitting a Stored DTMF Number

- 1 Press [PTT]+[MNU].
- 2 Release only [MNU], then turn the **Tuning** control or press [▲]/ [▼] to select the desired DTMF memory channel.
- 3 While still holding [PTT], press [▶] or [MNU] to transmit the DTMF tones.
 - The number stored in the channel scrolls across the display accompanied by DTMF tones from the speaker.
 - After transmission, the frequency display is restored.

If you need not confirm the memory channel contents, press [0] to [9] instead of turning the **Tuning** control or pressing [▲]/ [▼] in step 2 to select a channel number. The stored DTMF number will be immediately transmitted. You need not press [▶] or [MNU] in step 3.

■ Adjusting the DTMF tone transmission speed

This transceiver allows you to configure the DTMF number transmission speed between Fast (default) and Slow. If a repeater cannot respond to the fast speed, adjust this parameter.

- 1 Press [MNU] to enter Menu mode.
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select the Menu No. 11 (DTMF SPD).
- 3 Press [▶] or [MNU]
- 4 Turn the **Tuning** control or press [▲]/ [▼] to select "FAST" (default) or "SLOW".
 - The tone duration of FAST is 50 ms and SLOW is 100 ms.
- 5 Press [▶] or [MNU] to store the new setting.

■ Adjusting the pause duration

You can also change pause duration (a space digit) stored in memory channels; the default is 500 msec.

- 1 Press [MNU] to enter Menu mode.
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select the Menu No. 13 (DTMF PAUSE).
- 3 Press [▶] or [MNU]
- 4 Turn the **Tuning** control or press [▲]/ [▼] to select 100/ 250/ 500 (default)/ 750/ 1000/ 1500/ 2000 msec.
- 5 Press [▶] or [MNU] to store the new setting.

DTMF LOCK

Assuming you have a transceiver with the optional speaker microphone installed and you are carrying it in the holder or bag, you sometimes want to disable the keypad DTMF transmission to avoid the accidental DTMF transmission. In this case, turn the DTMF Lock function ON.

- 1 Press [MNU] to enter Menu mode.
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select the Menu No. 14 (DTMF LOCK).
- 3 Press [▶] or [MNU]
- 4 Turn the **Tuning** control or press [▲]/ [▼] to select "ON".
- 5 Press [▶] or [MNU] to store the setting.

When this function is activated, you cannot transmit DTMF tones using the DTMF keypad (including [MNU]) during the transmission.

UTILIZING B-BAND

ABOUT B-BAND

Usually you can communicate with other amateur radio stations using A-band frequencies for receiving and transmitting. This transceiver also features another receiver in addition to A-band transceiver. The frequency for the B-band appears the bottom part of the display. Although A-band transceiver covers only 144 MHz/ 220 MHz (TH-F6A only)/ 430/ 440 MHz amateur radio bands in FM mode, B-band receiver can receive from 100 kHz to 470 MHz in SSB, CW, FM, or AM mode. From 470 MHz to 1.3 GHz, you can also receive in FM or AM mode.

In this way, you can monitor 2 different frequencies at the same time. This means that you can listen to a local FM broadcasting station while you are monitoring your club channel at the same time.

If one of A-band amateur radio bands is also selected for B-band in FM mode, you can also transmit on the B-band frequency.

B-BAND FREQUENCY

Since B-band frequency coverage is so wide, the default frequency band, mode, and frequency step size are preprogrammed as shown below.

- 1 Press **[A/B]** to select B-band.
 - “▶” icon moves, indicating which band is currently selected.
- 2 Press **[BAND]** until the desired frequency band appears.
 - Each time you press **[BAND]**, the frequency band cycles from the last band you selected to upper band frequency. When it reaches to 1.2 GHz band, it goes back to LW band.
- 3 Turn the **Tuning** control or press **[▲]/ [▼]** to tune to a desired frequency.

Note: You can also select one of the amateur radio band to transmit on the B-band frequency. However, the operating mode must be in FM mode to transmit.

■ B-band Frequency Coverage

Band	Frequency	Step	Mode
AM band	100 kHz ~ 520 kHz	1 kHz	AM
	520 kHz ~ 1.8 MHz (TH-F6A) 520 kHz ~ 1.71 MHz (TH-F7E)	10 kHz	AM
HF	1.8 MHz ~ 3.5 MHz (TH-F6A) 1.71 ~ 3.5 MHz (TH-F7E)	100 Hz (FINE ON)	AM
	3.5 MHz ~ 4.0 MHz		LSB
	4.0 MHz ~ 7.0 MHz		AM
	7.0 MHz ~ 7.3 MHz		LSB
	7.3 MHz ~ 10.1 MHz		AM
	10.1 MHz ~ 10.15 MHz		CW
	10.15 MHz ~ 14.0 MHz		AM
	14.0 MHz ~ 14.35 MHz		USB
	14.35 MHz ~ 18.068 MHz		AM
	18.068 MHz ~ 18.168 MHz		USB
	18.168 MHz ~ 21.0 MHz		AM
	21.0 MHz ~ 21.45 MHz		USB
	21.45 MHz ~ 24.89 MHz		AM
	24.89 MHz ~ 24.99 MHz		USB
24.99 MHz ~ 28.0 MHz	AM		
28.0 MHz ~ 29.7 MHz	USB		
6 m	29.7 MHz ~ 50.0 MHz	25 kHz (TH-F6A) 5 kHz (TH-F7E)	FM
	50.0 MHz ~ 54.0 MHz	10 kHz	
FM band	54.0 MHz ~ 108.0 MHz	100 kHz	FMW
Air band	108.0 MHz ~ 137.0 MHz	25 kHz	AM
2 m	137.0 MHz ~ 144.0 MHz	5 kHz	FM
	144.0 MHz ~ 146.0 MHz	12.5/ 5 kHz	
	146.0 MHz ~ 174.0 MHz	5 kHz	
VHF TV	174.0 MHz ~ 216.0 MHz	100 kHz	FMW
1.3 m	216.0 MHz ~ 222.0 MHz	12.5 kHz	FM
	222.0 MHz ~ 235.0 MHz	20 kHz (TH-F6A) 12.5 kHz (TH-F7E)	
	235.0 MHz ~ 400.0 MHz	12.5 kHz	
70 cm	400.0 MHz ~ 430.0 MHz	12.5 kHz	FM
	430.0 MHz ~ 450.0 MHz	25 kHz	
	450.0 MHz ~ 470.0 MHz	12.5 kHz	
UHF TV	470.0 MHz ~ 806.0 MHz	100 kHz	FMW
23 cm	806.0 MHz ~ 1300.0 MHz	25 kHz	FM

Note:

- ◆ By a default, FINE mode is activated automatically for 1.8 MHz ~ 29.7 MHz.
- ◆ LSB/ USB/ CW mode operation is limited below 600 MHz.
- ◆ Cellular band is blocked due to government regulations.

8 ENHANCED COMMUNICATIONS

SELECTING A MODE FOR B-BAND

When using B-band, the following receiving mode is available.

Receiving mode	Available frequency ranges
LSB/ USB	$100 \text{ kHz} \leq f < 470 \text{ MHz}$
CW	$100 \text{ kHz} \leq f < 470 \text{ MHz}$
AM	$100 \text{ kHz} \leq f < 1.3 \text{ GHz}$
FM/ FMN	$29.7 \text{ MHz} \leq f < 1.3 \text{ GHz}$
WFM	$29.7 \text{ MHz} \leq f < 1.3 \text{ GHz}$

■ LSB/ USB/ AM/ FM/ WFM

To select the receiving mode for B-band:

- 1 Press **[VFO]**.
- 2 Press **[A/B]** to select B-band.
- 3 Press **[BAND]** and then turn the **Tuning** control or press **[▲]/ [▼]** to select the desired frequency.
- 4 Press **[MODE]** until you select the desired receiving mode. The mode icon cycles FM → WFM → AM → LSB → USB → CW, and then goes back to FM.

Note:

- ◆ To select FMN (Narrow FM), access Menu No. 29 and select "ON" (below).
- ◆ LSB, USB, and CW modes can be selected in the frequencies below 470 MHz only.

BAR ANTENNA

Although the supplied wide-band helical antenna is used for receiving B-band frequencies, due to the size and length limitation, it may not be suitable for the low HF band (below 7 MHz) reception. The transceiver features a built-in bar antenna for the reception frequency below 7 MHz. The transceiver automatically switches to the bar antenna when you select a frequency below 7 MHz for the B-band. However, you can connect an external antenna to the antenna connector instead.

To disable the built-in bar antenna:

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 26 (BAR ANT).
- 3 Press **[▶]**, **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select "DISABLE".

FINE TUNING MODE

When you operate the B-band in LSB, USB, CW, or AM mode, you can turn the FINE Tuning function ON. The Fine Tuning frequency step size can be selected from 50 Hz, 100 Hz (default), or 1000 Hz.

■ Activating Fine Tuning

To activate the FINE Tuning function:

- 1 Select a frequency (below 470 MHz) on the B-band.
 - Operating mode must be LSB, USB, CW or AM.
- 2 Press **[FINE]**.
 - 100 Hz digits appears.
- 3 Turn the **Tuning** control or press **[▲]/ [▼]** to tune to a station.

Note:

- ◆ Fine Tuning functions work only when you operate the frequency below 470 MHz.
- ◆ You cannot activate the Fine Tuning function on the A-band.
- ◆ When you change the mode to FM, the frequency will be automatically adjusted to the next available frequency.
- ◆ While in the Fine Tuning mode, you cannot perform VFO step size change (page xx), MHz mode (page xx), and MHz Scan (page xx).
- ◆ When you perform the Visual Scan (page xx), Information Channel Memory recall (page xx), Information Channel Scan (page xx), VFO mode (page xx), Memory channel recall (page xx), Call channel recall (page xx), or direct frequency entry (page xx), the transceiver exits the Fine Tuning mode.

■ Selecting Fine Tuning Frequency step

You can select the Fine Tuning frequency step from 50 Hz, 100 Hz (default), or 1000 Hz.

To select the Fine Tuning frequency step size:

- 1 Select a frequency on the B-band.
- 2 Press **[F]**, **[FINE]**.
 - Current frequency step size appears.

- 3 Turn the **Tuning** control or press **[▲]**/**[▼]** to select a desired frequency step from 50 Hz, 100 Hz (default), or 1000 Hz.
- 4 Press **[▶▶]** or **[MNU]** to store the new setting.

Note: *The Fine Tuning frequency step size reflects all available frequencies for the B-band.*

APO (Auto Power OFF)

The TH-F6A/ TH-F7E switches OFF automatically if no keys or controls are pressed or adjusted for 30 minutes (default). 1 minute before the transceiver switches OFF, warning beeps are output for a few seconds and "APO" appears on the display. You can select the APO time from OFF (disable), 30 (default), and 60 minutes.

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 18 (APO).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select the APO time from OFF, 30, or 60 minutes.
- 5 Press **[▶]** or **[MNU]** to store the setting.

Note:

- ◆ The APO function works even if the transceiver is scanning.
- ◆ The APO timer starts counting down the timer when no key presses, no control adjustments, and no command (RS-232C port) sequences are detected.

ATTENUATOR

The attenuator function is useful when extremely strong signals exist nearby your receiving frequency. When these type of signals exist nearby your receiving frequency, the receiver gain control may be erroneously controlled and overloaded by the strong signals, rather than by the target receiving signal. If this happens, the target receiving signal can be masked and buried by the strong signals. In this case, turn the Attenuator function ON. However, as a side effect, the target signal is also attenuated. You may have to adjust the **VOL** control to increase the audio output level when it is ON.

- 1 Press **[F]**, **[MONI]**.
 - "ATT ON" appears momentarily on the B-band display and the mode indicator blinks while it is ON.
- 2 To turn the attenuator function OFF, press **[F]**, **[MONI]** again.
 - The mode indicator quits blinking when it is OFF.

Note:

- ◆ When the attenuator function is ON, both A-band and B-band are attenuated. You cannot set the attenuator function independently for each band.
- ◆ ATT function is disabled while scanning.

BATTERY SAVER

Battery Saver extends the operating time of the transceiver. It becomes automatically active when the squelch is closed and no key is pressed for more than 10 seconds. To reduce the battery consumption, it shuts the receiver circuit OFF for the programmed time then momentarily ON to detect the signal. To program the receiver shut-off period for the battery saver:

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 17 (BAT SAVER).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select the receiver shut-off period from OFF, 0.2, 0.4, 0.6, 0.8, 1.0 (default), 2.0, 3.0, 4.0, and 5.0 seconds.
- 5 Press **[▶]** or **[MNU]** to store the setting.

Note: Longer period, more you can save the battery consumption. However, more chances of missing the signal.

BATTERY REMAINING

You can confirm the remaining Ni-ion battery capacity using this function. To confirm the Ni-ion battery remaining capacity:

Press **[F]**, **[LOW]**.

- Battery remaining indicator appears.
 - : more than 70 %
 - : 40 % ~ 70 %
 - : less than 40 %
 - : needs recharging

Note: When DC IN jack is connected to the DC source (13.8 V DC), "CHARGING" (charging the Ni-ion battery) or "STANDBY" (charging has completed) appears.

BEEP FUNCTION

The Beep function provides you confirmation of entry, error status, and malfunctions of the transceiver. We recommend you leave it ON in order to detect erroneous operations and malfunctions. However, to turn the beep function OFF:

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 19 (KEY BEEP).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select "OFF".
- 5 Press **[▶]** or **[MNU]** to store the setting.

The transceiver generates the following warning beeps even if the beep function is turned OFF.

- DC voltage error {page 2}.
- PLL circuit malfunctions.

Note: A beep output level is linked the **VOL** control position.

BEAT SHIFT

Since the transceiver uses a microprocessor to control various functions of the transceiver, the CPU clock oscillator's harmonics or image may appear on some spots of the receiving frequencies. In this case, turn the Beat Shift function ON.

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/[▼]** to select Menu No. 25 (BEAT SHIFT).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/[▼]** to select "ON".
- 5 Press **[▶]** or **[MNU]** to store the setting.

DISPLAY CONTRAST

You can adjust the LCD contrast level from 1 (weakest) to 16 (strongest) by accessing Menu No. 16 (CONTRAST). A default level is 8.

- 1 Press **[MNU]**.
 - 2 Turn the **Tuning** control or press **[▲]/[▼]** to select Menu No. 16 (CONTRAST).
 - 3 Press **[▶]** or **[MNU]**.
 - 4 Turn the **Tuning** control or press **[▲]/[▼]** to adjust the LCD contrast.
- The relative contrast level appears in a bar-graph.

- 5 Press **[▶]** or **[MNU]** to store the setting.

FREQUENCY STEP SIZE

Choosing the correct frequency step size is essential in order to select your exact receive frequency using the Tuning control or pressing **[▲]/[▼]**. You can select your desired frequency step size from:

5 kHz, 6.25 kHz, 8.33 kHz (118 MHz band only), 9 kHz (AM broadcasting band only), 10 kHz, 12.5 kHz, 15 kHz, 20 kHz, 25 kHz, 30 kHz, 50 kHz, 100 kHz.

The default step size for the amateur radio bands are as follows.

Band	Amateur radio band	TH-F6A	TH-F7E
A-band	144 MHz	5 kHz	12.5 kHz
	220 MHz	20 kHz	—
	430/ 440 MHz	25 kHz	25 kHz
B-band	144 MHz	5 kHz	12.5 kHz
	220 MHz	20 kHz	12.5 kHz
	430/ 440 MHz	25 kHz	25 kHz
	1.2 GHz	25 kHz	25 kHz

For B-band, refer to the page 35 for the default frequency step size for other frequency bands. The transceiver stores the frequency step size parameter for each band independently. You can also further fine tune the frequency in LSB, USB, AM, CW modes on the B-band. Refer to FINE tuning function {page 36}.

Note: If you change the frequency step size that does not match the current operating frequency, the transceiver automatically adjust the frequency that matches new frequency step size.

LAMP

You can illuminate the transceiver display by pressing **[LAMP]**. Approximately 5 seconds after releasing **[LAMP]**, the light goes OFF if no other key is pressed. Pressing any key other than **[LAMP]** while the display is lit, restarts the 5-second timer; pressing **[LAMP]** turns OFF the light immediately.

To keep the light ON continuously, press **[F]**, **[LAMP]**. The light remains ON until you press **[F]**, **[LAMP]**.

LOCK FUNCTION

Lock function disables the most of keys to prevent you from accidentally activating a function or changing the current settings.

Press **[F]** (1 s) to toggle Lock function ON or OFF.

- "→" appears when this function is ON.

However, the following keys are not locked:

[LAMP], **[MONI]**, **[SQL]**, **[PTT]**, **[F]** (1 s), **[ϕ]**, and **[F]** then **[LAMP]**.

Note: The **Tuning** control is also locked. To unlock the **Tuning** control while the Lock function is ON, turn the Tune Enable function ON.

■ Tune Enable

Even if the Lock function is ON, you sometimes want to turn the **Tuning** control to change the frequency. In this case, turn this function ON.

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/[▼]** to select Menu No. 7 (TUNE ENABLE).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/[▼]** to select "ON".
- 5 Press **[▶]** or **[MNU]** to store the setting.

15 OPERATOR CONVENIENCES

MICROPHONE PF KEYS (OPTIONAL)

If you have an optional SMC-33 or SMC-34 speaker microphone, you can access many transceiver settings without using transceiver keys or controls. The 1, 2, and 3 keys located on the top of the microphone are programmable with the transceiver key (or key combination) function. The default assignment functions are as follows.

- [1]: **A/B**
- [2]: **VFO/ MR**
- [3]: **CALL (TH-F6A)/ 1750 Hz (TH-F7E)**

Note:

- ◆ Turn the transceiver OFF before connecting the optional speaker microphone.
- ◆ If the LOCK switch on the rear of the microphone is ON, you must move the switch to OFF position to program the keys.

- 1 Press one of the following key combinations to re-program the keys on the speaker microphone.
 - Press Mic [1]+ [⏏] to re-program Mic [1] key
 - Press Mic [2]+ [⏏] to re-program Mic [2] key
 - Press Mic [3]+ [⏏] to re-program Mic [3] key
- 2 Press a key or key combination you want to assign to the function key.

[KEY]		[F] + [KEY]	
LAMP	REV	LAMP ¹	MN.IN
MONI	MN<->f	BATT	L.OUT
LOW	MHz	MODE	STEP
BAND	FINE	DUAL	
A/B	VFO	VISUAL	M>V
INFO	MR	VOX	M.IN
SQL	CALL	PRI	C.IN
BAL	1750 Hz	T.SEL	
TONE		SHIFT	

¹ The light stays ON until you press the key again.

MONITOR

When you are receiving while the squelch function is ON, weak signals may become intermittent.

Or, if the CTCSS or DCS function is ON, you may want to disable the squelch function temporarily to monitor the current channel activities.

In these cases, use the Monitor function to disable the squelch function temporarily.

To activate the Monitor function:

- 1 Press and hold [MONI].
 - The speaker is unmuted and you can monitor the signals.
- 2 Release [MONI] key to return to normal operation.

NARROW BAND FM OPERATION

By a default, if you select FM mode, the transceiver operates in normal FM deviation ($\pm 25\text{kHz}$) mode for both transmission and reception. However, you can operate the transceiver in narrow band FM deviation ($\pm 12.5\text{kHz}$) mode. To operate the narrow band FM:

- 1 Press [MNU].
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select Menu No. 29 (FM NARROW).
- 3 Press [▶] or [MNU].
- 4 Turn the **Tuning** control or press [▲]/ [▼] to select "ON".
- 5 Press [▶] or [MNU] to store the setting.

When the narrow band FM operation is ON, "FMN" appears instead of "FM".

Note: When you select Menu No. xx ON (9600 bps), the A-band operating mode returns to normal FM mode temporarily

POWER-ON MESSAGE

You can change the greeting message when the transceiver is turned ON.

To change the message:

- 1 Press [MNU].
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select Menu No. 15 (PWR-ON MSG).
- 3 Press [▶] or [MNU].
 - The current message and entry cursor appears.
- 3 Turn the **Tuning** control or press [▲]/ [▼] to select the first character.
 - You can enter alphanumeric characters plus special ASCII characters. See the table below for available characters.
- 4 Press [▶].
 - The cursor moves to the next digit.
- 5 Repeat steps 3 and 4 to enter up to 8 digits.
 - Pressing [▶] after selecting the 8th digit completes the programming.
 - To complete programming after entering less than 8 digits, press [▶] twice.
 - Press [◀] to move a cursor backward.
 - Pressing [F] deletes a character at the cursor position.

You can also use the keypad to enter alphanumeric characters in step 3. For example, each press of [2] selects entry as a, b, c, 2, A, B, C, then a. Press

[0] to select space or 0. Refer to page 17 for the available characters and control keys.

PROGRAMMABLE VFO

If you want to limit the operating frequencies within a certain range, program the upper and lower frequency limits to the program VFO parameters. For example, if you select 448 MHz for the lower limit and 449 MHz for the upper limit, the tunable range will be limited from 448.000 MHz to 449.995 MHz.

- 1 Press **[A/B]** to select A-band.
- 2 Press **[VFO]**.
- 2 Press **[BAND]** until you select the desired amateur radio band to configure the programmable VFO frequency range.
- 3 Press **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/[▼]** to select Menu No. 4.
 - The current programmable frequency range for the band appears.
- 5 Press **[▶]** or **[MNU]**.
- 6 Turn the **Tuning** control or press **[▲]/[▼]** to select the lower limit frequency in MHz.
- 7 Press **[▶]** or **[MNU]** to store the lower limit frequency.
 - The cursor moves to right and the upper limit frequency blinks.
- 8 Turn the **Tuning** control or press **[▲]/[▼]** to select the upper limit frequency in MHz.
- 7 Press **[▶]** or **[MNU]** to store the upper limit frequency.

Note:

- ◆ You cannot program the 100 kHz or lower digit.
- ◆ The upper limit frequency varies depending on the selected frequency step size.

SINGLE BAND OPERATION

If you do not want to use A and B-band receiver at the same time, you can turn A or B-band receiver OFF.

- 1 Press **[A/B]** to select the band you want to operate.
- 2 Press **[F]**, **[A/B]**.
 - The frequency of the selected band appears in large font and the other band is turned OFF.

- 3 To return to normal dual band operation, press **[F]**, **[A/B]** again.

TIME-OUT TIMER

The Time-out Timer limits the time of each transmission. The built-in time-out timer in the transceiver limits each transmission time for a maximum of 10 minutes. It is necessary to protect the transceiver from the thermal damage. You cannot turn this function OFF.

TONE ALERT

Tone Alert provides an audible alarm when signals are received on the frequency you are monitoring. In addition, it shows the number of hours and minutes elapsed after signals were received. If you use Tone Alert with CTCSS or DCS, it alarms only when a received CTCSS tone or DCS code matches the tone or code you selected.

- 1 Select your desired frequency or memory channel.
- 2 Press **[F]**, **[ENT]**.

- A bell icon appears when Tone Alert function is ON.
- When a signal is received, an alarm sounds for 10 seconds and the bell icon starts blinking.
- Pressing the PTT switch while the bell icon is blinking switches Tone Alert function OFF.
- When 99 hours and 59 minutes pass after a signal is received, counting stops.
- Each time a new signal is received, the elapsed time resets to 00:00.

Note:

- ◆ While Tone Alert is ON, there is no speaker output when a signal is received. To monitor the signal, press and hold **[MONI]**.
- ◆ When Tone Alert is ON, APO does not turn the power OFF.
- ◆ When Tone Alert is ON, you can use only the following functions. **[LAMP]**, **[MONI]**, **[SQL]**, **[A/B]**, **[F]** then **[LAMP]**, **[F]** then **[ENT]**.

TX INHIBIT

You can inhibit the transmission to prevent unauthorized individuals from transmitting, or to eliminate the accidental transmissions while carrying

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the transceiver.

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to select Menu No. 8 (TX INHIBIT).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select "ON".
- 5 Press **[▶]** or **[MNU]** to store the setting.
 - "TX INHIBIT!" appears if you press **[PTT]** while the TX Inhibit is ON.

TX POWER

You can change the transmission output power by pressing **[LOW]**. Each time you press **[LOW]**, the icon cycles H → L → EL, and then goes back to H. The output power varies depending on the battery type and operating voltage. When the transceiver operates with the power from the DC IN jack at 13.8 V DC, it produces the maximum output power. The table below is approximate output power when the transceiver operates with different types of battery or DC power source.

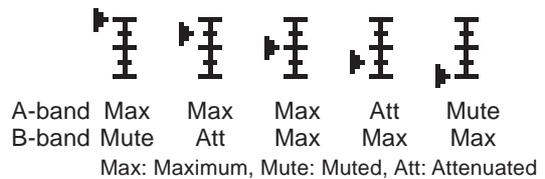
Output Power Level	Battery Type	Band	Output Power (approx.)	
			TH-F6A	TH-F7E
H (high)	BT-14 (6.0 V)	144 MHz	1.7 W	
		220 MHz	2.0 W	N/A
		430/ 440 MHz	2.5 W	
	PB-42L (7.4V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
	DC IN (13.8 V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
L (low)	BT-14 (6.0 V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
	PB-42L (7.4V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
	DC IN (13.8 V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
E L (economic low)	BT-14 (6.0 V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
	PB-42L (7.4V)	144 MHz		
		220 MHz		
		430/ 440 MHz		
	DC IN (13.8 V)	144 MHz		
		220 MHz		
		430/ 440 MHz		

VOLUME BALANCE

While you are receiving A and B-bands at the same time, you may sometimes feel that audio output on either band is too loud. You can adjust the volume balance level of the bands.

- 1 Press **[BAL]**.
 - The balance scale and blinking cursor appear.

- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to change the volume balance level of the bands.



- 3 Press **[▶]** or **[MNU]** to store the setting.

VOX (VOICE-OPERATED TRANSMIT)

VOX eliminates the necessity of manually switching to the transmit mode each time you want to transmit. The transceiver automatically switches to transmit mode when the VOX circuitry senses that you have begun speaking into the microphone.

When using VOX, develop the habit of pausing between thoughts to allow the transceiver to drop back to receive mode briefly. You will then hear if anybody wants to interrupt, plus you will have a short period to gather your thoughts before speaking again. Your listeners will appreciate your consideration as well as respect your more articulate conversation.

VOX can be switched ON and OFF independently for CW and the other modes, excluding FSK.

- 1 Press **[F]**, **[SQL]**.
 - "VOX" appears.
 - To exit the VOX mode, press **[F]**, **[SQL]** again.

■ Microphone Input Level

To enjoy the VOX function, take the time to properly adjust the gain of the VOX circuit. This level controls the capability of the VOX circuit to detect the presence or absence of your voice.

- 1 Press **[MNU]**.
- 2 Turn the **Tuning** control or press **[▲]/ [▼]** to access Menu No. 21 (VOX GAIN).
- 3 Press **[▶]** or **[MNU]**.
- 4 Turn the **Tuning** control or press **[▲]/ [▼]** to select the "ON".
- 5 Press **[▶]** or **[MNU]** to store the setting.
- 6 While speaking into the microphone using your

normal tone of voice, adjust the setting (default is 4) using the **Tuning** control or press [▲]/ [▼] until the transceiver reliably switches to transmit mode each time you speak.

- The selectable gain range is from 0 (least sensitive) to 9 (most sensitive).
- The setting should not allow background noise to switch the transceiver to transmit mode.

Note: The VOX gain level can be adjusted even if VOX is switched OFF or while you are transmitting.

■ Delay Time

If the transceiver returns to receive mode too quickly after you stop speaking, your final word may not be transmitted. To avoid this, select an appropriate delay time that allows all of your words to be transmitted without an overly long delay after you stop speaking.

- 1 Press [MNU].
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select Menu No. 22 (VOX DELAY).
- 3 Press [▶] or [MNU].
- 4 Turn the **Tuning** control or press [▲]/ [▼] to select the desired delay time from 100/ 200/ 300/ 500 (default)/ 1000/ 1500/ 3000 ms.
- 5 Press [▶] or [MNU] to store the setting.

■ VOX on Busy

You can configure the transceiver to enforce the VOX transmission even if the A and/or B-band receiver is receiving the signals.

- 1 Press [MNU].
- 2 Turn the **Tuning** control or press [▲]/ [▼] to select Menu No. 20 (VOXonBUSY).
- 3 Press [▶] or [MNU].
- 4 Turn the **Tuning** control or press [▲]/ [▼] to select "ON".
 - To suppress the VOX transmission when the transceiver is receiving the signals, select "OFF".
- 5 Press [▶] or [MNU] to store the setting.

WIRELESS REMOTE CONTROL (TH-F6A ONLY)

If you also have a **KENWOOD** multi-band mobile transceiver, you can control one of its bands by sending DTMF tones from this handy transceiver. You will find this function useful when you want to control your mobile transceiver from a location outside your vehicle.

Note:

- ◆ You can remotely control only the mobile transceivers that have both the DTSS and Remote Control functions.
- ◆ The FCC rules permit you to send control codes only on the 440 MHz band.

PREPARATION

Let us assume the 144 MHz band of the mobile transceiver will be controlled.

On the handy transceiver:

- 1 Press **[PTT]+[VFO]+[ϕ]**.
 - The current secret access code number appears. The default is 000.
- 2 Press a numeric key 0 to 9 to enter a 3-digit secret number.
 - You can also turn the **Tuning** control or press **[▲]/[▼]** to select each digit. Press **[▶]** (**[◀]**) to move the cursor to the next (previous) digit.
- 3 When the cursor on the most right position, press **[▶]** to complete the setting.
- 4 Select the 440 MHz band.
- 5 Select the transmit frequency.
- 6 Turn the transceiver power OFF.
- 7 Press **[PTT]+[MR]+[ϕ]**.
 - The transceiver enters Remote Control mode. "MOBILE CTRL" appears.

- To exit Remote control mode, repeat steps 6 and 7.

On the mobile transceiver:

- 8 Program the DTSS code on the UHF band as the secret number.
 - Select the same number as you selected in step 2.
 - For the programming method, refer to the instruction manual for the mobile transceiver.
- 9 Select the receive frequency on the UHF band.
 - Mate this frequency with the transmit frequency on the handy transceiver.

10 Make the transceiver enter Remote Control mode.

- For the method, refer to the instruction manual for the mobile transceiver.

CONTROL OPERATION

When in the Remote Control mode, the keys of the transceiver will function as below. Each time you press a key, the transceiver will automatically enter transmit mode and send the corresponding command to the mobile transceiver.

1	2	3	A
REV ON	TONE ON	CTCSS ON	ENT
4	5	6	B
REV OFF	TONE OFF	CTCSS OFF	TONE SEL
7	8	9	C
CALL	VFO	MR	(REP ON)
	0		D
DOWN	LOW	UP	(REP OFF)

¹ TM-V7A/ TM-D700A: REV ON/ OFF

Other mobile transceiver: TONE ALERT ON/ OFF

² Switches Repeater function ON/ OFF if the mobile transceiver support this function.

To change the transmit/ receive frequency:

[VFO] → [ENT] → [0] ~ [9] (enter the necessary digits) **→ [ENT]**) or **[VFO] → [UP]/ [DOWN]**

To recall a memory channel:

[MR] → [ENT] → [0] ~ [9] (enter the necessary digits) **→ [ENT]** or **[MR] → [UP]/ [DOWN]**

To change the tone (or CTCSS) frequency:

[TONE SEL] → [0] ~ [9] (enter 2 digits; ex. **[0], [5]**) **→ [TONE SEL]**

- Refer to the Tone frequency table on your mobile transceiver for the Tone number.
- Your mobile transceiver may require you to first activate the Tone or CTCSS function. It may also allow you to program a separate tone and CTCSS frequency. Check the instruction manual for the mobile transceiver.

OPTIONAL ACCESSORIES

BT-13

Drycell Battery Case

EMC-3

Clip Microphone



HMC-3

Headset with VOX/ PTT



HMC-5

Headset

HS-9

Earphone

PB-42L

Li-ion Battery Pack

PG-2W

DC Cable



PG-3J

Filtered Cigarette Lighter Cable



SMC-32

Speaker Microphone



SMC-33

Remote Control Speaker Microphone



SMC-34

Remote Control Speaker Microphone (with VOL control)



VC-H1

Interactive Visual Communicator



KENWOOD