



DUAL BAND FM TRANSCEIVER

FTM-350R

OPERATING MANUAL

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Contents

FRONT PANEL CONTROLS & SWITCHES

[FWD]/[BCK](PAGE) KEY

Press these keys briefly to select the operating function pages.
The available pages are: “Radio” page, “Timer” page, “Baro/Alti” page, “Navigation” page*, and “GPS Status” page*.
*: Requires optional “FGPS-1” GPS Unit.
Press and hold in these keys toggle the Dual Receive feature “on” and “off”.

[SET](SET MODE) KEY

Press this key to access the Set Mode.

[DIAL] KNOB

- Rotate this knob to select the operating frequency (or memory channel) of the *left side* receiver.
- Press and hold this knob for one second to enable to tuning the VFO frequency in 1 MHz step.
- When the *left side* receiver is set to “Main” band, press this knob briefly to activates the Band Scorp feature.
- When the *leftside* receiver is set to “Sub” band, press this knob briefly to change the *left side* receiver to “Main” band.

[VOL] KNOB

Adjusts the *left side* receiver’s audio volume.

[PTT] KEY

Press this key to transmit.

[B](BAND) KEY

Press this key to change the operating band of the Main band.
Available bands are:
Left Band: AM Radio, FM Radio, 144 MHz Band, 430 MHz Band, and Audio Line-In
Right Band: 144 MHz Band and 430 MHz band
You may assign the other function to this key. See page 36.

[F](FUNCTION) KEY

Press this key to change the current functions of the [SMART FUNCTION] keys.

[DIAL] KNOB

- Rotate this knob to select the operating frequency (or memory channel) of the *right side* receiver.
- Press and hold this knob for one second to enable to tuning the VFO frequency in 1 MHz step.
- When the *right side* receiver is set to “Main” band, press this knob briefly to activates the Band Scorp feature.
- When the *right side* receiver is set to “Sub” band, press this knob briefly to change the *right side* receiver to “Main” band.

MICROPHONE

[VOL] KNOB

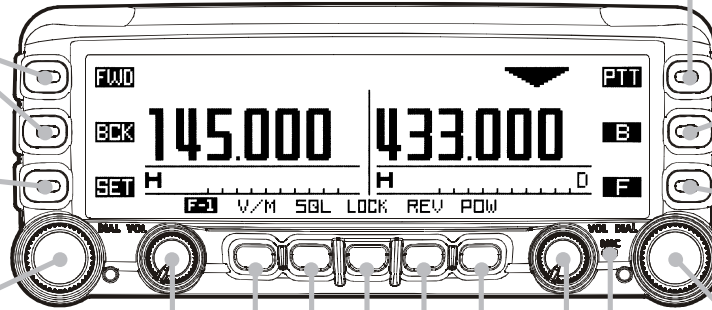
Adjusts the *right side* receiver’s audio volume.

[SMART FUNCTION] KEY

These four keys select many of the most important operating features of the transceiver.
When changing the operating function page or pressing the [FUNCTION] key, the current function of these key will change and appear above each keys.

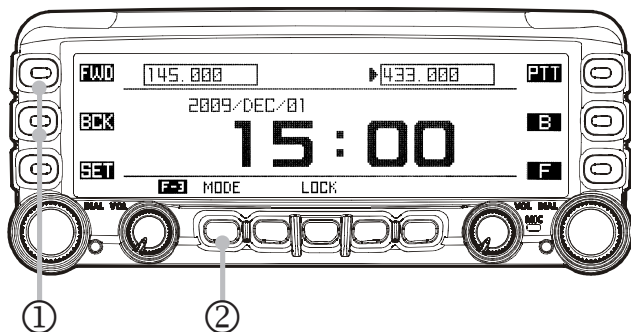
[POWER] SWITCH

- Press and hold this key for two seconds to toggle the transceiver’s power on and off.
- Press this key briefly while the transceiver is turned on to toggle the key lockout feature on or off.



TIMER PAGE OPERATION

“CLOCK”

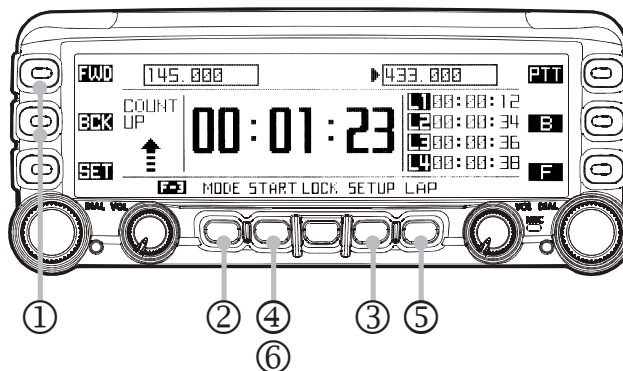


- ① Press the **[FWD]** or **[BCK]** key repeatedly, until the “Timer Page” appears.
- ② Press the **[MODE]** key repeatedly, until the “Clock” appears.

To return to the “Radio” page, press the **[FWD]** or **[BCK]** key repeatedly, until the “Radio” Page appears.

The **FTM-350**'s clock is setup from the Set mode item “**101 DATA&TIME ADJUST**” in the “**TIMER/CLOCK**” group. See page 39 for details.

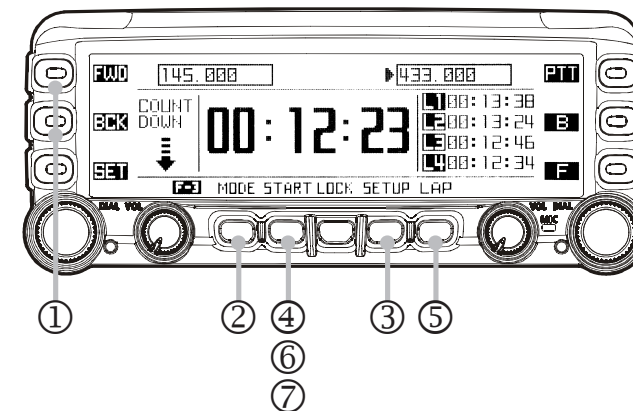
“COUNT UP” TIMER



- ① Press the **[FWD]** or **[BCK]** key repeatedly, until the “Timer Page” appears.
- ② Press the **[MODE]** key repeatedly, until the “Count Up” timer appears.
The “Count Up” timer has two kinds: which is with Lap function and without Lap function.
- ③ Press the **[SETUP]** key to set the interval time of the timer beep: rotate the **[DIAL]** knob to select the interval time, then press the **[SETUP]** key.
- ④ Press the **[START]** key to initiate the “Count Up” timer.
- ⑤ Press the **[LAP]** key to save the lap time, if desired (up to four laps).
- ⑥ Press the **[STOP]** key to stop the “Count Up” timer.
- ⑦ Press and hold the **[START]** key for two seconds to reset the “Count Up” timer.

To return to the “Radio” page, press the **[FWD]** or **[BCK]** key repeatedly, until the “Radio” Page appears.

“COUNT DOWN” TIMER



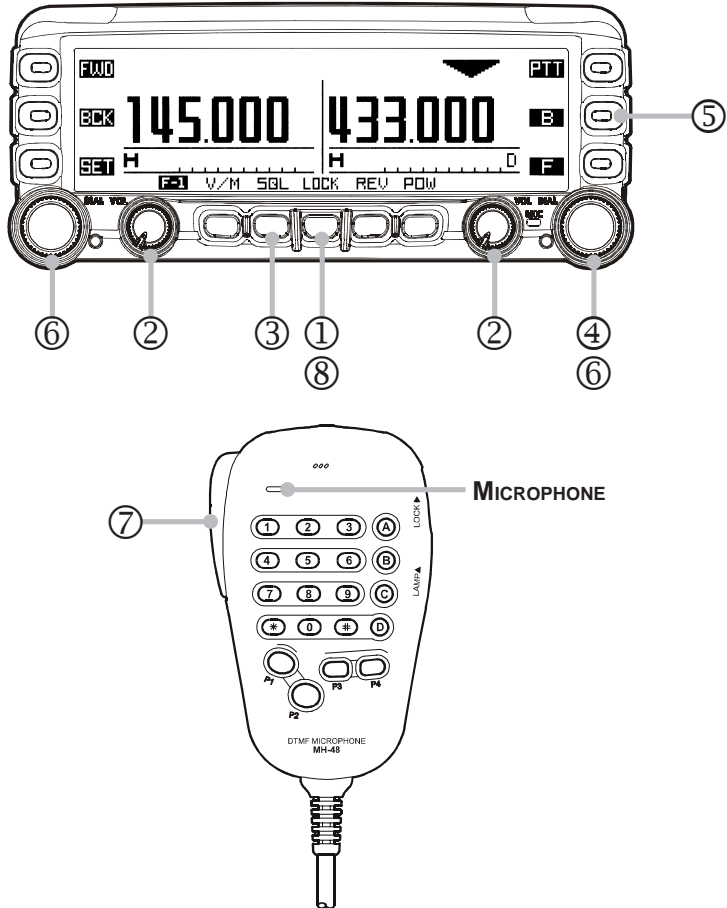
- ① Press the **[FWD]** or **[BCK]** key repeatedly, until the “Timer Page” appears.
- ② Press the **[MODE]** key repeatedly, until the “Count Down” timer appears.
The “Count Down” timer has two kinds: which is with Lap function and without Lap function.
- ③ Press the **[SETUP]** key to set the setup time: rotate the **[DIAL]** knob to select the setup time, then press the **[SETUP]** key.
- ④ Press the **[START]** key to initiate the “Count Down” timer.
- ⑤ Press the **[LAP]** key to save the lap time, if desired (up to four laps).
- ⑥ Press the **[STOP]** key to stop the “Count Down” timer.
- ⑦ Press and hold the **[START]** key for two seconds to reset the “Count Down” timer.

To return to the “Radio” page, press the **[FWD]** or **[BCK]** key repeatedly, until the “Radio” Page appears.

RADIO PAGE BASIC OPERATION

BASIC OPERATION

You can do the basic operation in numerical order of the illustration below.

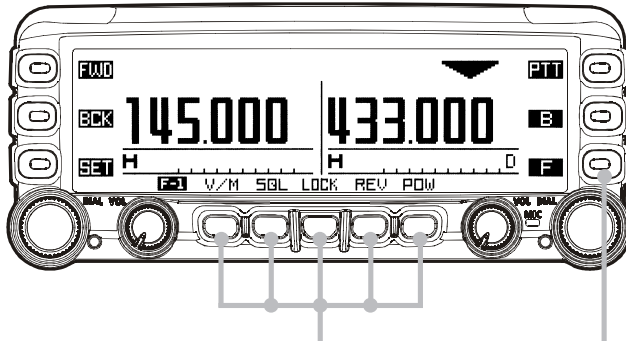


- ① Press and hold the **[POWER]** key for two seconds to turn the transceiver on.
- ② Rotates the **[VOL]** knob to adjust the audio volume level.
- ③ Adjusts the squelch threshold level: rotates the **[DIAL]** knob after pressing the **[SQL]** key.
- ④ Press the **[DIAL]** knob briefly to set the “Main” band.
- ⑤ Press the **[B]** key to select the operating band of the “Main” band.
- ⑥ Rotate the **[DIAL]** knob to select the operating frequency.
- ⑦ Speak into the microphone in a normal voice level while pressing the **[PTT]** key.
- ⑧ Press and hold the **[POWER]** key for two seconds to turn the transceiver off.

[SMART FUNCTION] KEY

GENERAL

The radio operation of the **FTM-350** performs by changing the **[SMART FUNCTION]** key into various functions by pushing the **[F]** key.



[SMART FUNCTION] key [FUNCTION] key

The function command of the **[SMART FUNCTION]** key replace as follows by pressing the **[F]** key. Recall the desired function you want to operate, and perform it.

◎ Default

F-1	V/M	SQL	LOCK	REV	POW
F-2	SCAN	DW	LOCK	SKIP*1	AF-D*2

◎ When install the optional Voice Guide Unit.

F-1	V/M	SQL	LOCK	REV	POW
F-2	SCAN	DW	LOCK	SKIP*1	AF-D*2
F-3	●REC	X CLR	LOCK	▶PLAY	VOICE

◎ When install the optional Voice Guide Unit and GPS Antenna Unit.

F-1	V/M	SQL	LOCK	REV	POW
F-2	SCAN	DW	LOCK	SKIP*1	AF-D*2
F-3	S•LIST	MSG	LOCK	BCOM	B-TX
F-4	●REC	X CLR	LOCK	▶PLAY	VOICE

◎ When press and hold the **[F]** key for two seconds.

SQL	TYPE	T•FRQ	LOCK	D•COD	P•FRQ
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※1: The **[SKIP]** command is appeared only in memory mode.

※2: You may change the **[AF-D]** command to other command by Set Mode item "G05 F KEY". See page ???.

[SMART FUNCTION] KEY

[SMART FUNCTION] KEY COMMAND DETAILS

F-1	V/M	Press Key	Switches frequency control between the "VFO" and "Memory System".
		Press & Hold Key	Activates the "Memory Write" mode (for memory channel storage).
	SQL	Press Key	Activates the Squelch threshold level.
		Press & Hold Key	No Action.
	LOCK	Press Key	Toggle the key lockout feature "on and "off".
		Press & Hold Key	Toggle the transceiver's power "on and "off".
REV	Press Key	Reverse transmit and receive frequencies while working through a repeater.	
	Press & Hold Key	No Action.	
POW	Press Key	Selects the desired transmit power output level ("LOW", "MID", and "HIGH")	
	Press & Hold Key	No Action	

F-2	SCAN	Press Key	Activates the Scanner.
		Press & Hold Key	No Action.
	DW	Press Key	Activates the Dual Watch feature.
		Press & Hold Key	No Action.
	LOCK	Press Key	Toggle the key lockout feature "on and "off".
		Press & Hold Key	Toggle the transceiver's power "on and "off".
SKIP	Press Key	Selects the "scan flag" to the current memory channel.	
	Press & Hold Key	No Action.	
AF-D	Press Key	Activates the AF Dual function.	
	Press & Hold Key	No Action.	

F-3	S•LIST	Press Key	Initiates the recording of the incoming receiver audio.
		Press & Hold Key	No Action.
	MSG	Press Key	Clears the recording data.
		Press & Hold Key	No Action.
	LOCK	Press Key	Toggle the key lockout feature "on and "off".
		Press & Hold Key	Toggle the transceiver's power "on and "off".
BCOM	Press Key	Play back the recording data.	
	Press & Hold Key	No Action.	
B-TX	Press Key	Announces the operating frequency of the "Main" band.	
	Press & Hold Key	No Action.	

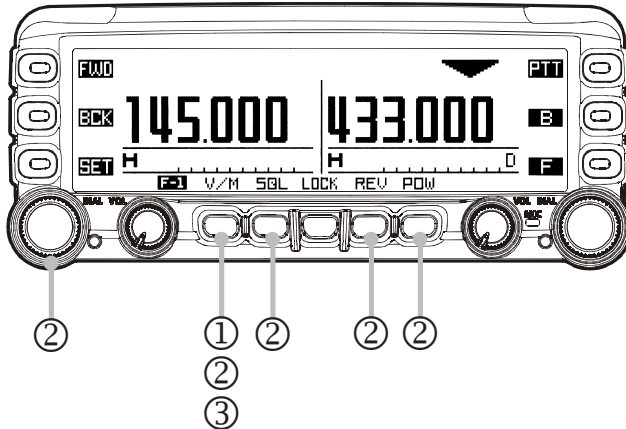
F-4	●REC	Press Key	Initiates the recording of the incoming receiver audio.
		Press & Hold Key	No Action.
	X CLR	Press Key	Clears the recording data.
		Press & Hold Key	No Action.
	LOCK	Press Key	Toggle the key lockout feature "on and "off".
		Press & Hold Key	Toggle the transceiver's power "on and "off".
▶PLAY	Press Key	Play back the recording data.	
	Press & Hold Key	Selects the Voice Memory Register (slot 1 - 8, or ALL).	
VOICE	Press Key	Announces the operating frequency of the "Main" band.	
	Press & Hold Key	No Action.	

SQL	TYPE	Press Key	Selects the Tone Squelch type.
		Press & Hold Key	No Action.
	T•FRQ	Press Key	Selects the CTCSS Tone frequency.
		Press & Hold Key	No Action.
	LOCK	Press Key	Toggle the key lockout feature "on and "off".
		Press & Hold Key	Toggle the transceiver's power "on and "off".
D•COD	Press Key	Selects the DCS code.	
	Press & Hold Key	No Action.	
P•FRQ	Press Key	Selects the User Programmed Reverse CTCSS Tone frequency..	
	Press & Hold Key	No Action.	

MEMORY OPERATION

MEMORY STORAGE

Before beginning the Memory Storage operation, select the desired frequency while operating in the VFO mode by the “Main” band. Be sure to set up any desired CTCSS or DCS tones, as well as any desired pre-eater offset. The power level may also be set at this time, if you wish to store it.



- ① Press and hold in the [V/M] key for two seconds to appear the “Memory Edit” window.
- ② If you wish to append an Alpha/numeric “Tag” to this channel, press and hold the [V/M] key again, then enter the desired name “Tag” (up to 8 character) by following examples. Otherwise, skip to the next step.

Example 1: Press the one of the microphone’s keypad. Press the [A] / [B] key to move the cursor, and press the [C] key to delete all data after the cursor. You may change the character (capital alphabet, small alphabet, numeric, and symbol) by pressing the [*] key.

Example 2: Rotate the *left side* [DIAL] knob to select character/number and press the [→] key to move the cursor to the next digit. Press the [BS] key to back-space the cursor. You may change the character (capital alphabet, small alphabet, numeric, and symbol) by pressing the [FONT] key.

- ③ Press the the [V/M] key to store the frequency into memory.

Important Note

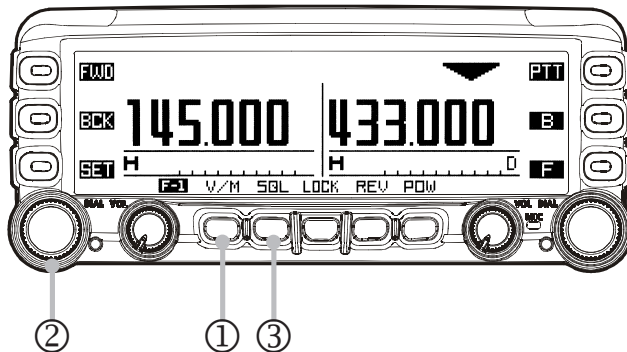
On rare occasions the memorized data may become corrupted by miss operation, or static electricity. When repairs are made the memory data may be lost. Please write down or record the memorized information so you will be able to restore it if needed.

MEMORY OPERATION

STORING INDEPENDENT TRANSMIT FREQUENCY (“ODD SPLIT”)

All memories can store an independent transmit frequency, for operation on repeaters with non-standard shift.

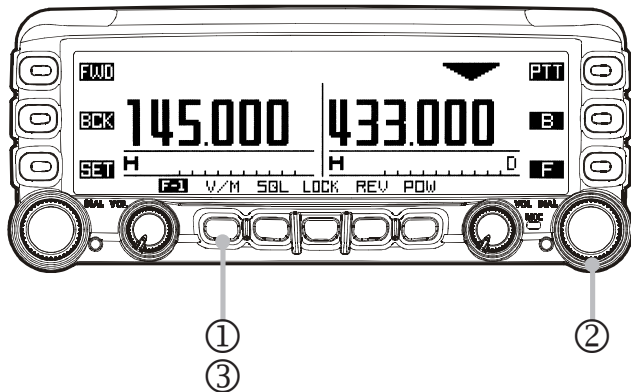
Before beginning this procedures, store the receive frequency using the method already described on the previous page.



- ① Tune the desired transmit frequency on the “Main” band, then press and hold in the [V/M] key for two seconds.
- ② Rotate the *left side* [DIAL] knob to select the same memory channel number as used in step 1 above.
- ③ Press the [TXIN] key to store the independent transmit frequency into memory.

MEMORY OPERATION

MEMORY RECALL



- ① Press the [V/M] key, the “Main” band becomes to the memory mode.
 - ② Rotate the [DIAL] knob to select the select the desired memory channel.
 - ③ To return to the VFO mode, press the the [V/M] key.
- ❑ When the radio is already set to memory mode, you may recall the memory of the “Main” band by the microphone’s keypad.
 For example, to recall the memory channel #14, press [0] → [1] → [4].
 - ❑ When recall the “Odd Splits” memory channel, the “**S**” indication will appear in the display.
 - ❑ When recall the “Tagged” memory channel, displays the memory channel with a Alpha/numeric “Tag”, and small frequency indication is appeared on the “Tag” indication. You may exchange the relationship between “Tag” indication and “Frequency” indication via Set Mode item “**D018 MEMORY DISPLAY**” in the “**MEMORY**” group.

MEMORY OPERATION

MEMORY EDIT

You may edit the memory channel via the Set Mode item “**D02 MEMORY EDIT**” in the “**MEMORY**” group.

LABELING MEMORIES

1. Rotate the *left side* [DIAL] knob to select the memory channel on which you wish to append a label or change a label.
2. Press the [V/M] key for two seconds. Append or change a label by the same manner as the step ② of the “Memory Storage” procedures (see page 6).

COPYING MEMORIES

1. Rotate the *left side* [DIAL] knob to select the memory channel on which you wish to copy.
2. Press the [SEL] key. The selected column will blink.
3. Rotate the *left side* [DIAL] knob to select the memory channel on which you wish to store the data.
4. Press the [CPY] key to copy the memory channel data.
5. Press the [SEL] key to stop the blinking column.

DELETING MEMORIES

1. Rotate the *left side* [DIAL] knob to select the memory channel on which you wish to delete.
2. Press the [SEL] key. The selected column will blink.
3. Press the [DEL] key to delete the memory channel data.

MEMORY OPERATION

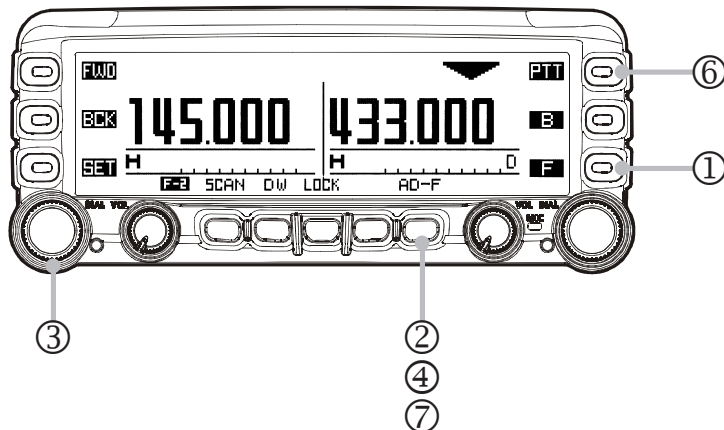
MEMORY CHANNEL SORT

You may sort and renumber the memory channels by frequency, from low to high via the “Special Function” mode.

1. Turn the radio off.
2. Turn the radio on while press and holding the key which is located at the left of the **[POWER]** switch to enter the “Special Function” mode.
3. When sort the memory channels in the *left band*, rotate the *left side* **[DIAL]** knob to select the function menu item “**3 L-MEMORY SORT**”. When sort the memory channels in the *right band*, rotate the *left side* **[DIAL]** knob to select the function menu item “**4 R-MEMORY SORT**”.
4. Press the *left side* **[DIAL]** knob, to display the confirmation message “**OK? [SET]**” on the display. If you decide to channel the memory channel sort, press the **[ESC]** key.
5. Press the *left side* **[DIAL]** knob again. Several seconds after pressing the *left side* **[DIAL]** knob, the **FTM-350** is reset automatically and sorting is complete.

AF DUAL OPERATION

The AF Dual function allows you to monitor your desired amateur band frequencies while listening to an FM broadcast stations.

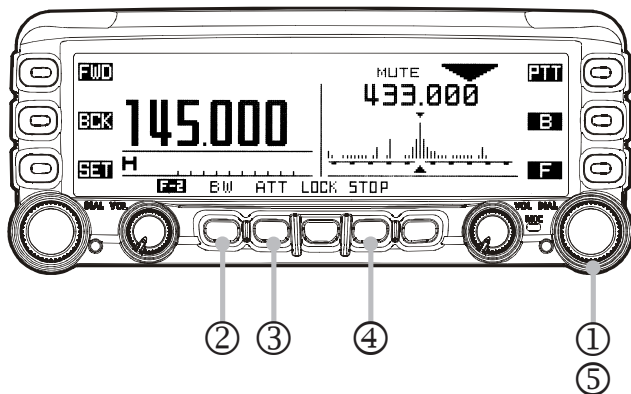


- ① Press the **[F]** key repeatedly, until the **[SMART FUNCTION]** key's category replaces to "**F-2**" mode.
- ② Press the **[AD-F]** key to activate the AF Dual function.
 The *left side* receiver switches to FM Broadcast. You may monitor the *right side* receiver frequency while receiving the FM Broadcast station.
- ③ Rotate the *left side* **[DIAL]** knob to tune the desired FM broadcast stations.
- ④ If you want to change the audio source to AM Broadcast station or Line-In audio, press and hold the **[AD-F]** key for two seconds to access the Set Mode, select the desired audio source by rotating the *left side* **[DIAL]** knob and then press the **[ESC]** key.
- ⑤ When a signal is received in the amateur band, the amateur band audio is output to the speaker. The FM or AM broadcast station will no longer be heard.
- ⑥ When the *right side* receiver is set in the amateur band by "Main" band, you may transmit on the amateur band by pressing the **[PTT]** key.
- ⑦ Press the **[AD-F]** key to disable the AF Dual function and return to normal operation.

BAND SCOPE OPERATION

GENERAL

The Band Scope allows viewing operating activity on channel above or below the current operating channel in the VFO mode.

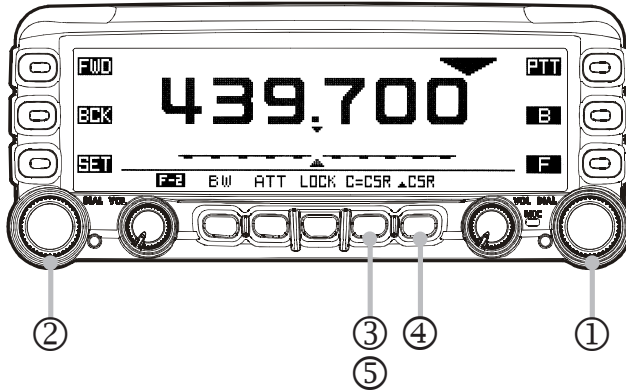


- ① Press the “Main” band’s **[DIAL]** knob to activate the Band Scope.
- ② Press the **[BW]** key to toggle the visible bandwidth to “±22 channels” and “±50 channels”.
- ③ Press the **[ATT]** key to reduce the receiving signal to approximately 10 dB, if desired (except the AM and FM Broadcast bands).
- ④ Press the **[STOP]** key to step the sweep of the Band Scope temporarily, if desired. Press the **[START]** key to start the sweep of the Band Scope again.
- ⑤ Press the “main” band’s **[DIAL]** knob to disable the Band Scope and return to normal operation.

BAND SCOPE OPERATION

ENHANCED MODE

You may perform the enhanced band scope operation while mono-band operation, when expand the function of the Band Scope by the “Special Function” mode.



- ① Rotate the “Main” band’s [DIAL] knob to tune the operating frequency.
- ② Rotate the “Sub” band’s [DIAL] knob to move the cursor (▲).
- ③ Press the [C=CSR] key to return the cursor to band center.
- ④ Press the [▲CSR] key, replace the “▲” cursor to “△”. In this case, you may tune the operating frequency with the cursor together by rotating the “Sub” band’s [DIAL] knob.
- ⑤ Press the [C=CSR] key to return the current frequency and cursor to both band center, and replace the “△” cursor to “▲”.

Switching to the Enhanced Mode

1. Turn the radio off.
2. Turn the radio on while press and holding the key which is located at the left of the [POWER] switch to enter the “Special Function” mode.
3. Rotate the *left side* [DIAL] knob to select the function menu item “8 BAND SCOPE”.
4. Press the *left side* [DIAL] knob, then rotate the *left side* [DIAL] knob to select “SPECIAL”.
5. Press the *left side* [DIAL] knob to save the new setting.
6. Press the [ESC] key, the FTM-350R is reset automatically.

CTCSS/DCS/EPCS OPERATION

CTCSS OPERATION

1. Press and hold in the [**F**] key for two seconds to replaces the [**SMART FUNCTION**] key's category to "**SQL**".
2. Press the [**TYPE**] key repeatedly, until the "**TONE SQL**" notation appears; this activates the CTCSS operation.
3. Press the [**T•FRQ**] key, then rotate the "Main" band's [**DIAL**] knob to select the desired CTCSS frequency.
4. Press the [**ESC**] key to save the new setting and exit to normal operation.
5. To finish the CTCSS operation, press the [**TYPE**] key repeatedly, until the "**OFF**" notation appears.

You may customize the CTCSS operation so that a ringing "bell" sounds alerts you taht a call is coming in via Set Mode item "**J01 BELL RINGER**" in the "**SIGNALING**" group. See page 40 for details.

DCS OPERATION

1. Press and hold in the [**F**] key for two seconds to replaces the [**SMART FUNCTION**] key's category to "**SQL**".
2. Press the [**TYPE**] key repeatedly, until the "**DCS**" notation appears; this activates the DCS operation.
3. Press the [**D•COD**] key, then rotate the "Main" band's [**DIAL**] knob to select the desired DCS code.
4. Press the [**ESC**] key to save the new setting and exit to normal operation.
5. To finish the DCS operation, press the [**TYPE**] key repeatedly, until the "**OFF**" notation appears.

You may customize the DCS operation so that a ringing "bell" sounds alerts you taht a call is coming in via Set Mode item "**J01 BELL RINGER**" in the "**SIGNALING**" group. See page 40 for details.

CTCSS/DCS/EPCS OPERATION

EPCS OPERATION

The EPCS (Enhanced Paging & Code Squelch) feature allows you to place a call to a specific station (Paging), and to receive calls of your choice directed only to you (Code Squelch).

The EPCS feature use two pairs of (alternately switched) CTCSS tones which are stored in the pager memories. Basically, your receiver remains silent until it receives the CTCSS tone pair that matches those stored in the receiving pager memory.

1. Store the CTCSS tone pair via Set Mode item “**J04 PAGER CODE**” in the “**SIGNALING**” group. Sub menu “**1: RX**” sets the first tone of the receiving CTCSS tone pair, and the second tone of the receiving CTCSS tone pair is set to Sub menu “**2: RX**”. In a similar manner, set the transmitting CTCSS tone pair in the Sub menu “**3: RX**” and “**4: RX**”.
2. Press and hold in the [F] key for two seconds to replaces the [SMART FUNCTION] key’s category to “**SQL**”.
3. Press the [TYPE] key repeatedly, until the “**PAGER**” notation appears; this activates the EPCS feature.
4. To finish the EPCS operation, press the [TYPE] key repeatedly, until the “**OFF**” notation appears.

You may customize the EPCS operation so that a ringing “bell” sounds alerts you taht a call is coming in via Set Mode item “**J01 BELL RINGER**” in the “**SIGNALING**” group. See page 40 for details.

SCAN OPERATION

VFO SCAN

1. Press the [**F**] key repeatedly until the [**SMART FUNCTION**] key's category replaces to "**F-1**", then set the "Main" band to VFO mode by pressing the [**V/M**] key on the "**F-1**" category, if necessary.
2. Press the [**F**] key briefly to change the [**SMART FUNCTION**] key's category to "**F-2**".
3. Press the [**SCAN**] key on the "**F-2**" category to initiate the VFO scan.
3. Press the [**SCAN**] key again to stop the VFO scan.

You may customize the functions of the VFO Scan via following Set Mode items "**F02 SCAN DIRECTION**", "**F03 SCAN RESUME**", "**F04 SCAN STOP BEEP**" in the "**SCAN**" group, and "**G08 RX COVERAGE**" in the "**SYSTEM**" group.

MEMORY SCAN

1. Press the [**F**] key repeatedly until the [**SMART FUNCTION**] key's category replaces to "**F-1**", then set the "Main" band to memory mode by pressing the [**V/M**] key on the "**F-1**" category, if necessary.
2. Press the [**F**] key briefly to change the [**SMART FUNCTION**] key's category to "**F-2**".
3. Press the [**SCAN**] key on the "**F-2**" category to initiate the memory scan.
4. Press the [**SCAN**] key again to stop the memory scan.

You may customize the functions of the Memory Scan via Set Mode items "**D03 MEMORY SCAN TYPE**" in the "**MEMORY**" group, "**F04 MEMORY SKIP/SELCT**", "**F03 SCAN RESUME**", "**F04 SCAN STOP BEEP**" in the "**SCAN**" group, and "**G08 RX COVERAGE**" in the "**SYSTEM**" group.