

Receiving

2 Touch [V/M]

The mode will change to the memory mode.

The channel number will be displayed above the frequency.

The name (tag) assigned to the memory channel will also be displayed.



3 Touch [V/M] again

The mode will change to the VFO mode and the

frequency will return to the last frequency received.

“VFO” will be displayed above the frequency.



Switching the communication mode

This radio is equipped with an Automatic Mode Select (AMS) function which automatically selects any one of four communication modes to match the signal received.

Besides C4FM digital signals, analog signals are also identified in order to automatically match the communication mode of the partner station.

* Digital communication can be performed only on the Band A.


Press  to display “” on the screen.


* Display differs depending on the signal received.






— Display example when in the AMS

Receiving

When operating in a fixed communication mode, switch to the communication mode using .

The communication mode will switch in sequence as follows each time  is pressed.

“ (AMS)” → “DN (V/D mode)” → “VW/DW (FR mode)” → “FM (Analog)”

Operating mode	Display	Explanation of modes
AMS (Automatic Mode Select)		The operating mode is automatically selected from four communication modes to match the signal received. (The  part display differs according to the signal received) The AMS feature settings may be changed via Set-up Menu ( P.174).
V/D mode (simultaneous voice and data communication mode)	DN	As the audio signal error is detected and repaired at the same time as the transmission of the digital audio signal, it becomes more difficult for conversations to be cut off. A basic digital mode of C4FM FDMA.
Voice FR mode (Voice full-rate mode)	VW	Digital voice data is transmitted using the entire 12.5 kHz bandwidth. High quality voice communication is possible.
Data FR mode (high speed data communication mode)	DW	High speed data communication mode using the entire 12.5 kHz bandwidth for data communication. Automatically switches to this mode for video communication.
Analog FM mode	FM	Analog communication mode using the FM mode. This mode is effective for communication when the signal strength is so weak that the voice is cut off midway in the digital mode.


Caution

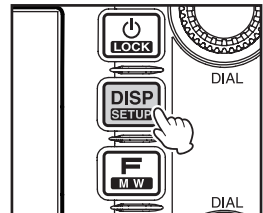
In the V/D mode (“DN” displayed), the position information is included in the transmitted signal during the conversation, but in the Voice FR mode (“VW” displayed), the position information is not included.

Switching the modulation mode

The modulation mode can be selected from “FM”, “NARROW FM” and “AM” in the analog mode.

When shipped from the factory, the mode is set to “AUTO” where the most optimal modulation mode is automatically selected according to the frequency.

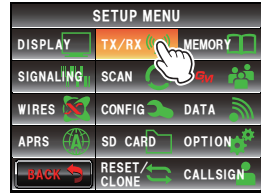
- 1 Choose the operating band
- 2 Press  for one second or longer
The set-up menu will be displayed.



Receiving

3 Touch [TX/RX]

The menu list will be displayed.



4 Touch [MODE] to select the modulation mode

The modulation mode changes in the following order each time the screen is touched:

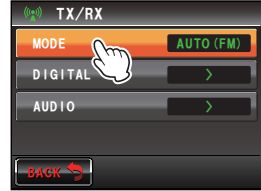
“AUTO (FM)”: Automatically switches the modulation mode to match the frequency band

“FM”: Switches to the FM mode.

“NARROW FM”: Switches to the Narrow FM mode.
 The degree of modulation becomes half the normal level.

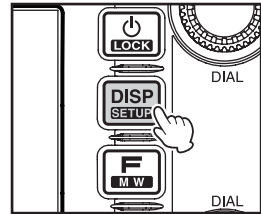
“AM”: Switches to the AM mode.

Tip Factory default value: AUTO (FM)



5 Press [DISP SETUP] for one second or longer

The modulation mode is set up and the display returns to the previous screen.



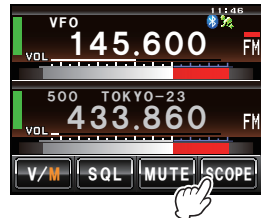
Displaying the band scope

The band scope can display a graph of the signal activity of the channels surrounding the memory channel or frequency that has been set up in the operating band. The display is centered on the current operating frequency.

1 Touch [SCOPE]

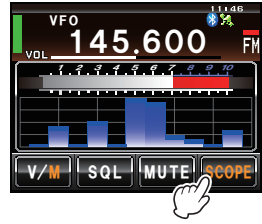
[SCOPE] will turn orange and the band scope will be displayed.

Tip The range to be shown can also be adjusted. Refer to “Setting the width of the band scope” (P.172).



Receiving

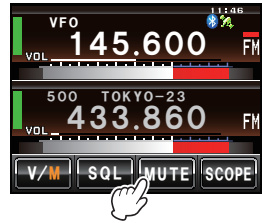
- 2 Touch **[SCOPE]** again
The display will return to the dual band screen.



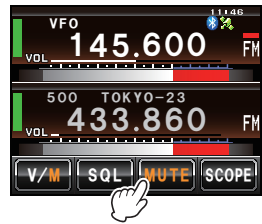
Muting the audio

The audio in the operating band and sub-band can be muted with just one touch.

- 1 Touch **[MUTE]**
[MUTE] will turn orange and the sound will become inaudible.



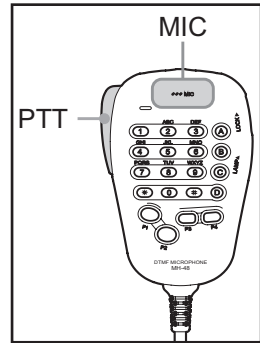
- 2 Touch **[MUTE]** again
The sound will become audible.



Communicating

Transmitting

- 1 Press and hold the microphone [**PTT**]
A red bar will be displayed on the left of the band display.
Also, the transmission output level will be displayed in the PO meter under the VOL meter.
- 2 Talk directly into the microphone [**MIC**]
Tip Keep the microphone at a distance of about 1 inch away from the mouth when talking.



- 3 Release [**PTT**]
The red bar and PO meter level will disappear and the radio will return to the receiving state.

Tips

- Refrain from transmitting continuously for a long period of time as much as possible. The temperature of the main body will rise and this may result in burns and equipment failure due to overheating.
- "ERROR TX FREQ" will be displayed when attempting to transmit on a frequency that is not in the amateur band.

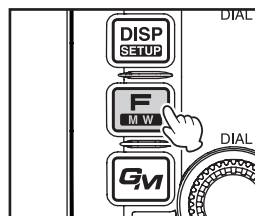


Communicating

Adjusting the transmit power

When communicating with a nearby station, the transmit power can be reduced to save on energy consumption.

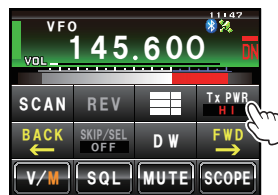
- 1 Press .
The function menu will be displayed.




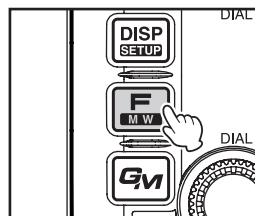
- 2 Touch **[Tx PWR]** to select the transmit power.
The transmission power is changed in the following sequence, each time **[Tx PWP]** is touched.

“HI” → “LO” → “MD”

Model	HI	MD	LO
FTM-400XDR/DE	50 W	20 W	5 W



- 3 Press .
The transmit power is set and the display returns to the previous screen.




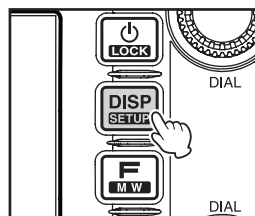
Tips

- The current setting will be displayed under **[Tx PWR]** in the display.
- The default setting when shipped from the factory is “HI”.

Adjusting the sensitivity of the microphone

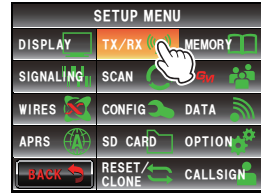
The sensitivity (gain) of the microphone can be adjusted.

- 1 Press  for one second or longer.
The set-up menu will be displayed.

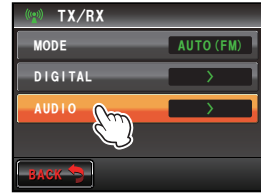


Communicating

- 2 Touch **[TX/RX]**
 The menu list will be displayed.



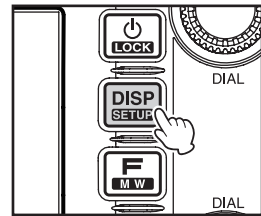
- 3 Touch **[AUDIO]**
 The menu list will be displayed.



- 4 Touch **[3 MIC GAIN]** to select the sensitivity
 The sensitivity will change in the following sequence each time the screen is touched.
 “MIN” → “LOW” → “NORMAL” → “HIGH” → “MAX”
Tips
 - The sensitivity can also be selected by pressing .
 - Factory default value: NORMAL



- 5 Press for one second or longer
 The sensitivity is set and the display returns to the previous screen.
Tip The display can also be returned to the previous screen by touching **[BACK]** twice.



Basic Operations

Communicating in the FM mode

- 1 Choose the operating band
- 2 Select “FM” as the modulation mode
- 3 Tune the radio using
- 4 Press and hold the microphone **[PTT]** to talk

Tip The Narrow FM mode can also be used. Set the mode to **[NARROW FM]** under **[TX/RX]** → **[MODE]** in the set-up menu.

Communicating

Communicating using the repeater

This radio includes an ARS (Automatic Repeater Shift) function which permits communication through the repeater automatically just by setting the receiver to the repeater frequency.

- 1 Set the receive frequency to the repeater frequency
 “-” or “+” appears on top of the display.
- 2 Press **[PTT]**, to begin communicating through the repeater

Tips

- Press **[REV]** and touch **[REV]** to reverse the transmission and reception frequencies temporarily to check whether direct communication with the partner station is possible.
- When reversing the frequencies, **[REV]** will turn orange.
- When **[REV]** is touched one more time, the reverse is cancelled.
- When the settings are changed in the set-up menu, this radio can be used in even more convenient ways.



The ARS function can be turned off under “CONFIG” → “4 AUTO RPT SHIFT”.

The repeater shift direction can be set under “CONFIG” → “5 RPT SHIFT”.

The repeater shift width can be changed under “CONFIG” → “6 RPT SHIFT FREQ”.

● Repeater shift

The FTM-400XDR/DE has been configured, at the factory, for the repeater shifts customary in the country where it is sold. For the 144 MHz band, this usually will be 600 kHz, while the 430 MHz shift will be 1.6 MHz or 7.6 MHz.

Depending on the part of the band in which you are operating, the repeater shift may be either downward (-) or upward (+), and one of these icons will appear on the display when repeater shifts have been enabled.

● Automatic repeater shift (ARS)

The FTM-400XDR/DE ARS feature causes the appropriate repeater shift to be automatically applied whenever it is tuned into the designated repeater sub-bands.

If the ARS feature does not appear to be working, you may have accidentally disabled it. To re-enable ARS:

- 1 Press **[DISP SETUP]** for one second or longer
 The set-up menu will be displayed.

