

YAESU
The radio

FTM-100DR/DE

Advance Manual

144/430 MHz
DUAL BAND TRANSCEIVER

C4FM/FM



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Setting Up the micro-SD memory card

The following operations can be carried out by using a micro-SD memory card with the transceiver.

- Backing up the information and settings of the transceiver
- Saving the GPS log data
- Saving data downloaded using the GM function and WIRES-X function
- Exchanging the saved data among multiple transceivers

Micro-SD memory cards that can be used

This transceiver supports 2 GB micro-SD memory card and 4 GB, 8 GB, 16 GB, 32 GB micro-SDHC memory card.

Cautions

- The micro-SD or micro-SDHC cards are not provided with the product.
- Not all micro-SD and micro-SDHC cards sold commercially are guaranteed to work with this product

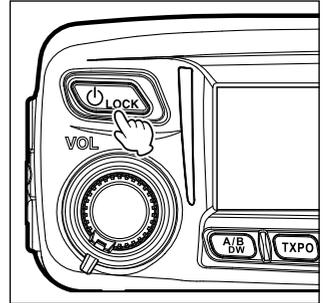
Things to note when using micro-SD memory cards

- Do not bend the micro-SD memory card or place heavy objects on top of it.
- Do not touch the terminal face of the micro-SD memory card with your bare hands.
- micro-SD memory cards that are initialized on other devices may not record normally on the transceiver. Reinitialize the micro-SD memory card on the transceiver when using such a card. (For details, see “Initializing micro-SD memory cards” on page 3.)
- Do not pull the micro-SD memory card out or turn off the transceiver while reading or writing data from/to the card.
- Do not insert anything other than a micro-SD memory card into the micro-SD memory card slot of the transceiver.
- Do not pull out or insert the micro-SD memory card with unreasonable force.
- When a single micro-SD memory card is used for a long period of time, writing and deletion of data may become disabled. Use a new micro-SD memory card when data can no longer be written or erased.
- Note that Yaesu shall not be liable for any damages suffered as a result of data loss or corruption in use of the micro-SD memory card.
- (For details, see “Initializing micro-SD memory cards” on page 3.)

Setting Up the micro-SD memory card

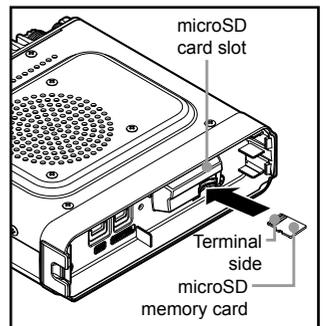
Inserting a micro-SD memory card

- 1 Press and hold  for over 2 seconds to turn the transceiver OFF.



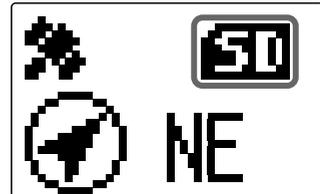
- 2 Insert the micro-SD memory card into the micro-SD memory card slot.
With the terminal side up, insert the card into the slot until it clicks.

- Cautions**
- Insert the micro-SD memory card, as shown, with the correct orientation.
 - Do not touch the terminal of the micro-SD memory card with your hands.



After turning the transceiver ON, the  icon appears on the top right side of the screen.

Tip It may take a while for the icon to appear depending on the card capacity.



Removing the micro-SD memory card

- 1 Press and hold  for over 2 seconds to turn the transceiver OFF.
- 2 Push in on the micro-SD memory card.
A click sound is heard and the micro-SD memory card is pushed outward.
- 3 Remove the micro-SD memory card from the micro-SD memory card slot.

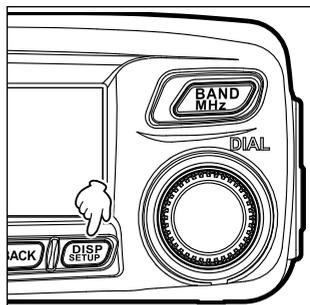
Initializing micro-SD memory cards

When using a new micro-SD memory card for the first time with the FTM-100DR/DE, initialize it by following the procedure below.

Caution

Initializing deletes all the data recorded on the micro-SD memory card. Check the contents of the micro-SD memory card before initialization.

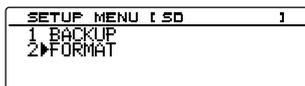
- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[11 SD]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[2 FORMAT]**, then press **DISP SETUP**.
The format confirmation screen appears.



- 4 Rotate the DIAL to select **[OK?]**, then press **DISP SETUP**.
Initializes the micro-SD memory card.



Tip To cancel initialization, rotate the DIAL to select **[Cancel]**, then press **DISP SETUP**.

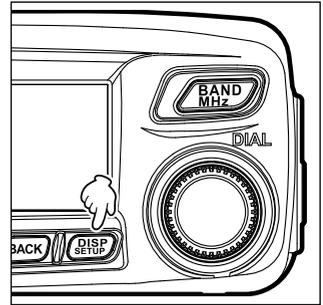
After completing initialization, "Completed" appears, and then the display returns to the menu list screen.

Basic Operations

Adjusting the microphone sensitivity

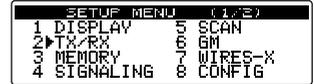
The sensitivity (gain) of the microphone can be adjusted.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



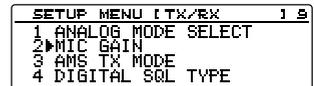
- 2 Rotate the DIAL to select **[2 TX/RX]**, then press **DISP SETUP**.

The menu list appears.



- 3 Rotate the DIAL to select **[2 MIC GAIN]**, then press **DISP SETUP**.

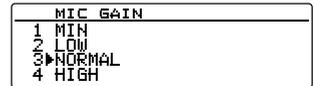
The microphone gain setting value appears.



- 4 Rotate the DIAL to select the desired microphone gain setting.

“1 MIN” → “2 LOW” → “3 NORMAL” → “4 HIGH”

Tip The default setting: 3 NORMAL



- 5 Press and hold **DISP SETUP** for over one second.

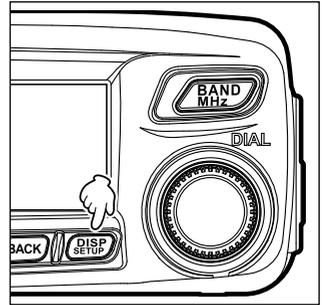
The microphone sensitivity is set and the display returns to the previous operating screen.

Tip You can also return to the previous operating screen by pressing **BACK** 3 times.

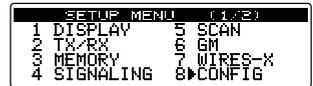
Changing the beep volume

The volume of the key operation “beep sound” can be adjusted.

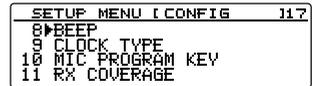
- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[8 CONFIG]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[8 BEEP]**, then press **DISP SETUP**.
The volume setting value appears.



- 4 Rotate the DIAL to select the desired volume level.
“1 OFF” → “2 LOW” → “3 HIGH”

Tip The default setting: 2 LOW



- 5 Press and hold **DISP SETUP** for over one second.

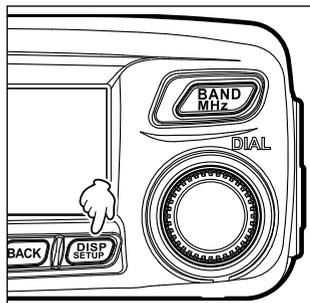
The selected beep volume level is set and the display returns to the previous operating screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

Adjusting the display brightness

The brightness and contrast of the display can be adjusted.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[1 DISPLAY]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[2 LCD BRIGHTNESS]**, then press **DISP SETUP**.
The brightness level adjustment screen appears.



- 4 Rotate the DIAL to select the desired brightness level.



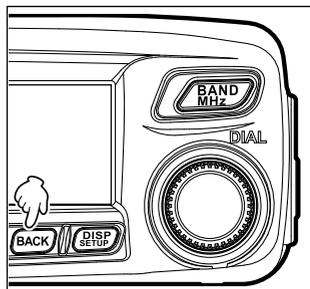
The brightness level can be selected from the following 7 levels.

“MIN”, “2”, “3”, “4”, “5”, “6” and “MAX”

Tip The default setting: MAX

- 5 Press **BACK**.

Tip To complete the setting, press and hold **DISP SETUP** for over one second. To adjust the contrast level thereafter, proceed to step 6.



- 6 Rotate the DIAL to select **[3 LCD CONTRAST]**, then press **DISP SETUP**.
The screen where the contrast level may be selected appears.



Receiving

- 7 Rotate the DIAL to select the desired contrast level.

The contrast may be selected from the following 7 levels.

“-3”, “-2”, “-1”, “0”, “+1”, “+2” and “+3”

Tip The default setting: 0



- 8 Press and hold **DISP SETUP** for over one second.

The selected contrast level is set and the display returns to the previous operating screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

Using the Memory

Split memory

A separate transmit frequency may be registered to a memory channel to which a receive frequency has already been registered.

1 In VFO mode, select the transmit frequency to be registered.

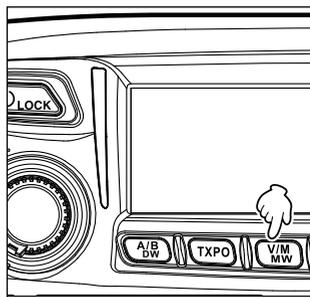
2 Press and hold **VM** for over one second.

The MEMORY WRITE screen appears.

The entered transmit frequency automatically appears on the next blank memory channel.

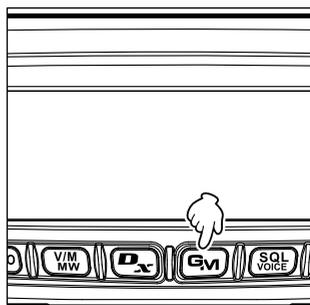
3 Rotate the DIAL (if necessary) to select the memory channel to which the transmit frequency is to be registered.

Tip Pressing **TXPO** briefly skips memory channels in steps of 100 memory channels.



4 Press **Gv**, (**TXin** appears on the upper side).

The confirmation screen appears.



5 Rotate the DIAL to select **[OK?]**, then press **DISP**.

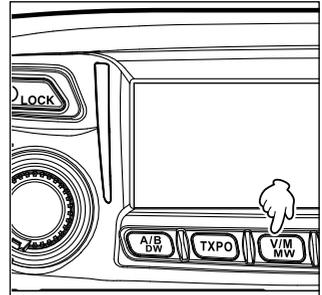
Registers the transmission frequency, then displays the memory mode screen.

Tip **+** appears on the left side of a memory channel when a separate transmit frequency is registered. Also, when such a memory channel is selected, **+** appears on the screen.

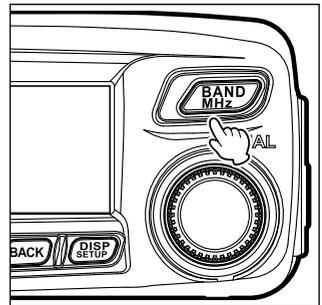
Specifying memory channels

Specific memory channels to be scanned may be selected using the Setup menu “2 MEMORY SCAN TYPE” set to “2 SELECT MEMORY”.

- 1 Press and hold **V/M MW** for over one second.
The MEMORY WRITE screen appears.



- 2 Press **BAND MHz**, (**LIST** appears on the left side).



- 3 Rotate the DIAL to select the desired memory channel.



- 4 Press **DISP** twice, (**SKP** appears on the upper side).

On the right side of the memory channel number display, “▶” lights up. This indicates the “SELECT” state. The memory channels marked with this indicator are scanned when scanning only specified channels.



Tips

- To unselect the memory channel, press the button again. “▶” turns off.
- To specify other memory channels, repeat steps 3 to 4.

- 5 Press **DISP SETUP**.

The previous screen returns and “▶” is displayed on the left side of the memory channel number.

Scanning only the specified memory channels

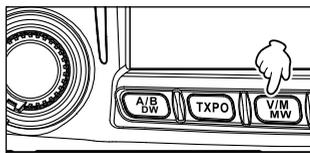
- 1 Select the band to be scanned, and then switch to memory mode.
- 2 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 3 Rotate the DIAL to select **[3 MEMORY]**, then press **DISP SETUP**.
The menu list appears.
- 4 Rotate the DIAL to select **[2 MEMORY SCAN TYPE]**, then press **DISP SETUP**.
The menu list appears.
- 5 Rotate the DIAL to select **[2 SELECT MEMORY]**.
- 6 Press and hold **DISP SETUP** for over one second.
The display is returned to the previously viewed screen.
- 7 Press and hold **[UP]** or **[DWN]** on the microphone for over one second.
Scanning of the specified memory channels begins.

- Tips**
- Pressing **[UP]** scans in the memory channel numbers in the upward direction, whereas pressing **[DWN]** scans the memory channel numbers in the downward direction.
 - To cancel scanning, press **[PTT]** on the microphone (this does not put the transceiver into transmit mode).

Setting memories to skip

Memory channels which you do not want to receive can be skipped during scanning.

- 1 Press and hold **V/M MW** for over one second.
The MEMORY WRITE screen appears.
- 2 Press **BAND MRZ**, (**LIST** appears on the left side).
- 3 Rotate the DIAL to select the desired memory channel.



- 4 Press **DISP**, (**SKP** appears on the upper side).
On the right side of the memory channel number display, "►" blinks. This indicates the "SKIP" state. The memory channels with this indicator are skipped during scanning.



- Tips**
- To unselect the memory channel, press **DISP** twice. "►" turns off.
 - To set other memory channels, repeat steps 3 to 4.

- 5 Press **DISP SETUP**.
The display returns to the previously viewed screen. "►" blinks on the left side of the memory channel number.

Scanning the programmable memories (PMS)

Using the dedicated PMS memory channels, only the frequencies within the specified frequency range will be scanned.

Register the desired frequency range to the PMS memory channels in advance.

Registering to the programmable memory channels

9 pairs (LP1/UP1 to LP9/UP9) of frequencies can be entered to the PMS memory channels. Register the lower limit of the desired scanning frequency range to the memory channel "LP*" and the upper limit to the memory channel "UP*".

One pair of PMS memories with the same channel number "*" (a number from 1 to 9) are handled as one PMS channel "P*".

Example: Set up a PMS channel by registering a lower frequency of 433.200 MHz and an upper frequency of 433.700 MHz to the P1 (LP1/UP1) memory channel.

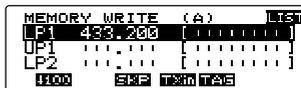
- 1 Switch to VFO mode.
- 2 Rotate the DIAL tune to the desired lower limit scan frequency.
Tune in to the frequency to set for the lower limit (433.200 MHz).

Caution The frequency entered as the lower limit (LP1) must be lower than the upper limit (UP1).

- 3 Press and hold $\left[\begin{smallmatrix} V/M \\ W/W \end{smallmatrix} \right]$ for over one second.
The MEMORY WRITE screen appears.

- 4 Rotate the DIAL to select [LP1].

Tip A name tag may also be assigned to each memory channel.



- 5 Press $\left[\begin{smallmatrix} DISP \\ SETUP \end{smallmatrix} \right]$.

The display returns to the previous screen and shows the registered frequency and memory channel number.

- 6 Press $\left[\begin{smallmatrix} V/M \\ W/W \end{smallmatrix} \right]$ to switch to VFO mode.
- 7 Rotate the DIAL to tune to the desired upper scanning limit frequency.
Tune in to the frequency to set for the upper limit (433.700 MHz).

- 8 Press and hold $\left[\begin{smallmatrix} V/M \\ W/W \end{smallmatrix} \right]$ for over one second.
The MEMORY WRITE screen appears.

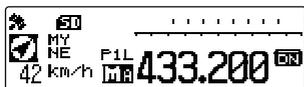
- 9 Rotate the DIAL to select [UP1].

Tip A name tag may also be assigned to each memory channel.

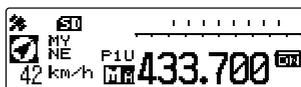
- 10 Press $\left[\begin{smallmatrix} DISP \\ SETUP \end{smallmatrix} \right]$.

The display returns to the previous operating screen, and shows the registered frequency and memory channel number.

Lower limit frequency LP1



Upper limit frequency UP1



Scanning the programmable memory channels

- 1 Press  to switch to memory mode.
- 2 Recall the upper or lower frequency PMS memory channel.
- 3 Press and hold **[UP]** or **[DWN]** on the microphone for over one second.

Programmable memory scanning will begin.

- Tip**
- To cancel programmable memory scanning, press **[PTT]** on the microphone (this does not cancel PMS mode).
 - To cancel PMS mode, when programmable memory scanning stops, press .
 - The squelch level can be adjusted using the following procedure even while scanning.
Press . → Rotate the DIAL.

Caution

If the upper and lower PMS frequencies are not set correctly, the programmable memory scan will not function.

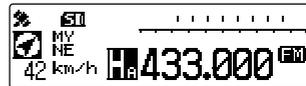
- Tip** You can assign **[SCAN]** to one of the **[P1]** to **[P4]** keys on the microphone using the Setup MENU **[8 CONFIG]** → **[10 MIC PROGRAM KEY]**. For details on assigning a function to the **[P1]** to **[P4]** keys, see “Setting the program keys on the microphone (10 MIC PROGRAM KEY)” on page 75. For operations using **[P1]** to **[P4]**, refer to the following.

- 1 Press  to switch to memory mode.
- 2 Recall the upper or lower frequency PMS memory channel.
- 3 Press one of the **[P1]** to **[P4]** keys on the microphone to which **[SCAN]** is assigned.

Monitoring the home channel

The FTM-100DR/DE transceiver is equipped with a dual receive function (also known as dual watch (DW)) which periodically checks for signals on the home channel. When a signal is detected, the transceiver receives on the home channel.

Example: While receiving signals on 446.500 MHz, dual receive checks the home channel every 5 seconds.



Receiving frequency

Monitors the home channel at intervals of about 5 seconds.

After receiving a signal on the home channel, the transceiver continues receiving until the signal disappears. About 3 seconds after the signal disappears, the dual reception starts again.

Caution

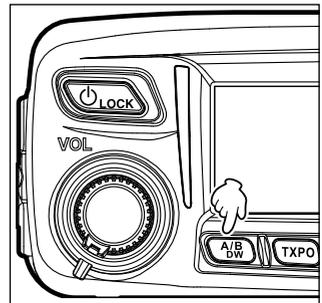
When shipped from the factory, the 144 MHz band home channel is set to 145.000 MHz, while the 430 MHz band home channel is set to 433.000 MHz. The registered home channel frequencies may be changed as desired..

Using the dual receive function

- 1 Rotate the DIAL to tune to a memory channel or VFO receive frequency.
- 2 Press and hold $\left(\frac{A/B}{DW}\right)$ for over one second.

The dual receive function is activated and the home channel is checked approximately every 5 seconds. When a signal is detected on the home channel, reception continues until the signal disappears.

The time interval for checking the home channel may be changed in the Setup menu [5 SCAN] → [4 DUAL WATCH MODE] (page 14).



● Canceling the dual receive function

Press and hold $\left(\frac{A/B}{DW}\right)$ again for over one second.

Setting the dual receive restart setting

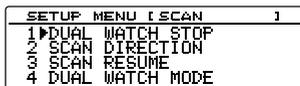
Set how the transceiver dual receive mode operates after the signal on the home channel disappears by selecting one of the following 2 options:

- (1) Restarts dual receive operation in 3 seconds (AUTO).
- (2) Stops dual reception and continues receiving signals on the home channel (HOLD).

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select **[5 SCAN]**, and then press **DISP SETUP**.



- 3 Rotate the DIAL to select **[1 DUAL WATCH STOP]**, then press **DISP SETUP**.



The setting options appear.

- 4 Rotate the DIAL to select the desired setting.
Select "1 AUTO" or "2 HOLD".



Tip The default setting: 1 AUTO

- 5 Press and hold **DISP SETUP** for over one second.
Sets the dual reception restart setting and returns the display to the previously viewed screen.

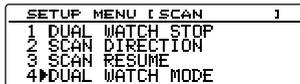
Setting the channel signal reception time when using the dual reception function

Set the time interval to check the HOME channel when using the dual reception function.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select **[5 SCAN]**, and then press **DISP SETUP**.

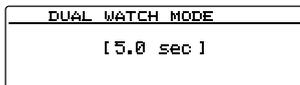


- 3 Rotate the DIAL to select **[4 DUAL WATCH MODE]**, then press **DISP SETUP**.



The setting options appear.

- 4 Rotate the DIAL to select the time interval to check the home channel.
Select one from [0.3sec] to [10sec].



Tip The default setting: 5.0 sec

Supplement The HOME channel reception time is fixed to 0.3sec.

- 5 Press and hold **DISP SETUP** for over one second.
Sets the time interval to check the Home channel and returns the screen to the previously viewed screen.

Using the GPS Function

The FTM-100DR/DE transceiver is equipped with an internal GPS reception unit to receive and display the location information at all times. The location information can be used for the following purposes:

Save the location information of other stations and note whether or not they are within communication range.

☞ Refer to the separate GM Function Instruction Manual.

Exchange the location information and messages with other stations, during data communications.

☞ Refer to the separate APRS Instruction Manual.

What is GPS?

GPS (Global Positioning System) is a space-based satellite navigation system that provides location and time information anywhere on the earth. It was developed by the U.S. Department of Defense as a military system. It receives signals from 3 or more of about 30 GPS satellites flying at an altitude of about 20,000 km, and displays the current position (latitude, longitude, altitude) within an accuracy of several meters. In addition, GPS can receive the exact time from the satellite's onboard atomic clock.

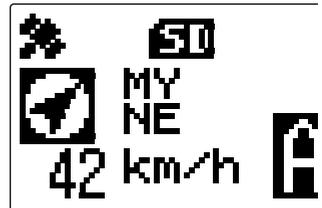
The transceiver is equipped with a high-sensitivity 66-channel GPS antenna supporting QZSS (Quasi-Zenith Satellite System) which shortens measuring time and improves the accuracy of the location information.

Activating the GPS function

- 1 Press and hold  for over one second.

Starts satellite search and displays the  icon at the top left of the screen. Upon acquiring the satellites, the  icon blinks.

- Tips**
- It may take several minutes to acquire the satellites.
 - When 3 or more satellites cannot be acquired, the  icon keeps blinking. Under this circumstance, positioning is not possible and thus location information cannot be utilized.



About GPS positioning

“Positioning” refers to the calculation of the GPS receiver position from the satellite orbit information, and the propagation time of the radio waves. For successful positioning, at least 3 satellites must be acquired. If positioning is unsuccessful, move the GPS receiver to an open space, as far from buildings as possible, where the view of the sky is unobstructed.

• About errors

Environmental obstacles may cause positioning errors of several hundred meters. Under favorable conditions, positioning can be performed successfully using only 3 satellites. However, under the following poor conditions, the positioning accuracy may decrease or cause positioning to fail.

- Between high-rise buildings
- Indoors or under the shade of buildings
- Between trees in a forest or woods
- When used behind a solar energy-reflecting glass
- Narrow roads between buildings
- Beneath high-voltage lines or overhead structures
- Inside a tunnel or underground
- Areas with strong magnetic fields

• When the GPS is not in use for an extended period of time

Locating satellites may take several minutes when using the GPS function for the first time after purchase or when you have not used the transceiver for an extended time. Similarly, when several hours have passed since turning off the transceiver, a several minute wait may be required in order to locate the satellites.

Checking the satellite acquisition status

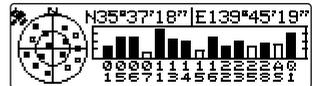
The satellites acquired at the current location and the strength of the signals can be observed on the radar-like screen.

- 1 Press **DISP** twice briefly.

Displays the radar-like GPS screen, and the acquired satellite numbers and signal strength using a chart.

- indicates non-acquired satellites, whereas
- indicates acquired satellites.

The location information of your station (longitude and latitude) is also shown above the signal strength chart.



- Tips**
- Pressing **DISP** again returns the display to the previously viewed screen.
 - In the Setup menu **[1 DISPLAY] → [4 GPS INFORMATION]**, you can change the display above the signal strength chart to the frequency display.

Displaying the location information

Displaying your current location information

On the normal screen, the current location information of your station is displayed on the left side of the frequency display. The screen displays the compass indicating the direction you are heading in and your station movement speed.



Displaying location information of the received station in digital mode

In C4FM digital V/D mode, the GPS location information and voice signals are transmitted simultaneously. Therefore, the direction and location of the received station can be calculated and displayed in real-time, even while communicating.

- 1 Press **DISP SETUP** once briefly.

Displays the current location information of the received station on the left side of the frequency display. The screen displays the compass indicating the direction to the received station and the distance to the received station.



Tip

In the Setup menu **[10 APRS]** → **[11 APRS UNITS]**, you can change the display unit for each type of data.

Saving location information (GPS Log Function)

Your location information can be periodically saved onto a micro-SD memory card.

- 1 Press and hold **DISP SETUP** for over one second.

Displays the Setup menu.

- 2 Rotate the DIAL to select **[8 CONFIG]**, then press



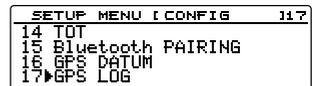
Displays the menu list.



- 3 Rotate the DIAL to select **[17 GPS LOG]**, then press



Displays the screen for switching the GPS log function between ON and OFF and selecting the interval time for saving location points.



Tip When "OFF" is selected, the location information is not saved.

Activating the GPS function

- 4 Rotate the DIAL to select [1 ON [xx sec]], then press



Tip The default setting: 2 OFF

```
GPS LOG
1 ON [10 sec]
2 OFF
```

- 5 Rotate the DIAL to select the interval for saving the location information.

“1 sec”, “2 sec”, “5 sec”, “10 sec”, “30 sec”, “60 sec”

Tip The default setting: 10 sec

- 6 Press and hold  for over one second.

Sets the interval for saving the location information and returns the display to the previously viewed screen. The  icon lights up on the screen.

Starts saving the location information at the set interval.

Tips

- The location information is periodically saved until the power to the transceiver is switched OFF or when “OFF” is selected in step 4.
Saving of location information resumes under the same file name when the transceiver is turned OFF and then ON again within the same day, or when the saving interval is selected again in step 5.
- The data is saved under the filename “GPSyymmdd.log”.
The portion “yymmdd” indicates the saving start time in “yy” (year), “mm” (month), and “dd” (day).

Checking the route using a personal computer

The route can also be displayed on a computer with commercially available mapping software using the log data of the saved location information.

- 1 Turn off the transceiver.
- 2 Remove the micro-SD memory card.
Tip Refer to “Removing the micro-SD memory card” on page 2.
- 3 Insert the micro-SD memory card into the personal computer using an appropriate memory card reader.
- 4 Open the “FTM100D” folder located on the micro-SD memory card.
- 5 Open the “GPSLOG” folder.

The data is saved under the filename “GPSyymmdd.log”.

The portion “yymmdd” indicates the saving start time in “yy” (year), “mm” (month), and “dd” (day).

- 6 Import the data into the mapping software.

The route will be displayed on the map.

Tips

- Refer to the operating manual of the mapping software for instructions on how to import and display the route data on the map.
- The location information can also be used by connecting the transceiver directly to a computer. See “Connecting an external device” on page 47.

Other settings

● Changing the geodetic reference system

Set the geodetic reference in the Setup menu, **[8 CONFIG]** → **[16 GPS DATUM]**.

You can select the geodetic reference system-positioning standard:

“1 WGS-84”: Use the global geodetic reference system for positioning. This is the standard used all around the world.

“2 TOKYO MEAN”: Use the Japanese geodetic reference system for positioning. Reduces the chance of inaccuracies while positioning in Japan (Tokyo).

Tips

- When the geodetic reference system is changed to “TOKYO MEAN”, the location information will deviate by about 400 meters.
- For normal usage, keep it set to “WGS-84”.

● Changing the time zone

Set the time zone differential in the Setup menu **[8 CONFIG]** → **[3 TIME ZONE]**.

The time difference with the UTC (Coordinated Universal Time) can be changed in 30-minute steps.

Communicating with specific stations

Using the tone squelch function

This radio is equipped with the CTCSS (Continuous Tone-coded Squelch System which allows audio to be heard only when receiving signals containing the same frequency tone as the tone that has been set in the tone squelch menu. By matching the tone frequency with the partner station in advance, a quiet standby monitoring is possible.

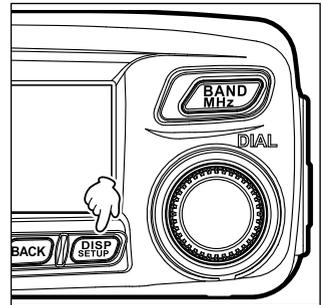
Caution

CTCSS does not function in digital modes. To transmit a signal using a CTCSS code, use the  key to switch the communication mode to AMS (Auto Mode Select function) or analog (FM) mode.

Selecting the tone frequency

The tone frequency can be selected from 50 frequencies (from 67.0 Hz to 254.1 Hz).

- 1 Press and hold  for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press .
The menu list appears.

SETUP MENU (1/3)	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-K
4 SIGNALING	8 CONFIG

- 3 Rotate the DIAL to select **[1 TONE SQL FREQ]**, then press .

SETUP MENU [SIGNALING] 1/3	
1 TONE SQL FREQ	
2 DCS CODE	
3 AUTO DIALER	
4 SQL TYPE	

- 4 Rotate the DIAL to select the desired frequency.

Tip The default setting: 100.0 Hz

TONE SQL FREQ	
	97.4 HZ
▶	[100.0 HZ]
	103.5 HZ
	107.2 HZ

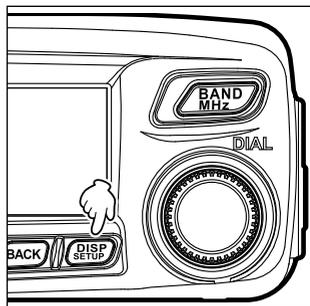
- 5 Press and hold  for over one second.

Sets the tone frequency and returns the display to the previously viewed screen.

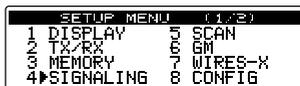
Tip You can also return to the previous screen by pressing  3 times.

Using the tone squelch function

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



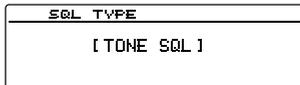
- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[4 SQL TYPE]**, then press **DISP SETUP**.



- 4 Rotate the DIAL to select **[TONE SQL]**, then press **DISP SETUP** for over one second.



Tip • Rotating the DIAL changes the squelch type in the following order:

“OFF”, “TONE ENC”, “TONE SQL”, “REV TONE”, “DCS”, “PR FREQ”, “PAGER”, “DCS ENC”*, “TONE DCS”*, “DCS TSQL”*

*To display these squelch types, from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

- Instead of following the steps 1 to 4 above, you can change the squelch type by pressing and holding **TXPO** for over one second.

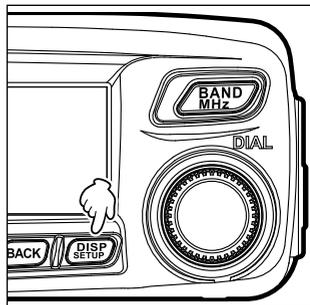
Displays **TSQ** on the screen. The squelch opens only when receiving tone signals of the set frequency.

Tip

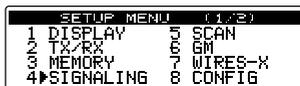
A bell tone (beep) may be set to sound when signals containing a corresponding CTCSS tone are received. See “Notification of incoming calls from partner stations using the bell function” on page 28.

Transmitting tone signals

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



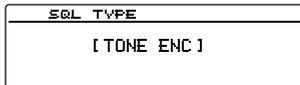
- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[4 SQL TYPE]**, then press **DISP SETUP**.



- 4 Rotate the DIAL to select **[TONE ENC]**, then press **DISP SETUP** for over one second.



Tips • Rotating the DIAL changes the squelch type in the following order:
“OFF”, “TONE ENC”, “TONE SQL”, “REV TONE”, “DCS”, “PR FREQ”, “PAGER”, “DCS ENC”*, “TONE DCS”*, “DCS TSQL”*

*The squelch types may also be selected from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

- Instead of following the steps 1 to 4 above, the squelch type may be selected by pressing and holding **TXPO** for over one second.

Displays **ENC** on the screen.

- 5 Press **[PTT]** on the microphone.

While pressing and holding **[PTT]**, the signal containing the designated tone is transmitted.

Using the digital code squelch function

This radio is equipped with a DCS (Digital Coded Squelch) function that allows audio to be heard only when signals containing the corresponding DCS code are received. By matching the DCS code with the partner stations beforehand, a quiet receive standby is possible.

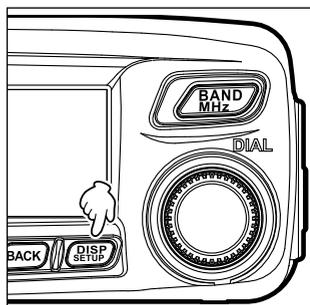
Caution

DCS does not function in digital mode. To transmit a signal with a DCS code, use the **[Dx]** key to switch the communication mode to AMS (Auto Mode Select function) or analog mode (FM).

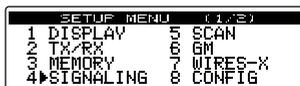
Selecting the DCS code

The DCS code can be selected from 104 digital codes between 023 and 754.

- 1 Press and hold **[DISP SETUP]** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **[DISP SETUP]**.
The menu list appears.

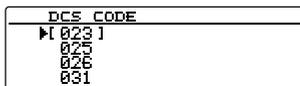


- 3 Rotate the DIAL to select **[2 DCS CODE]**, then press **[DISP SETUP]**.



- 4 Rotate the DIAL to select the desired DCS code.

Tip The default setting: 023



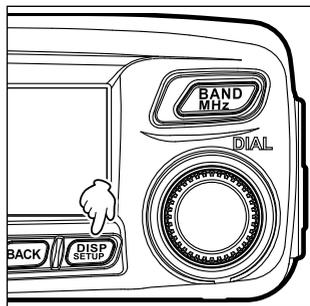
- 5 Press and hold **[DISP SETUP]** for over one second.

Sets the DCS code and returns the display to the previously viewed screen.

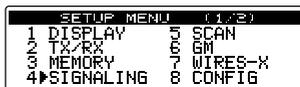
Tip You can also return to the previous screen by pressing **[BACK]** 3 times.

Using the DCS function

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



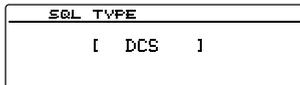
- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[4 SQL TYPE]**, then press **DISP SETUP**.



- 4 Rotate the DIAL to select **[DCS]**, then press **DISP SETUP** for over one second.



Tips • Rotating the DIAL changes the squelch type in the following order:

“OFF”, “TONE ENC”, “TONE SQL”, “REV TONE”, “DCS”, “PR FREQ”, “PAGER”, “DCS ENC”*, “TONE DCS”*, “DCS TSQL”*

*To display these squelch types, from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

- Instead of following the steps 1 to 4 above, the squelch type may be changed by pressing and holding **TXPO** for over one second.

Displays **DCS** on the screen.

The squelch opens only when receiving a signal containing the corresponding DCS code.

Tip

A bell tone (beep) may be set to sound when signals containing a corresponding DCS code are received. See “Notification of incoming calls from partner stations using the bell function” on page 28.

Using the new pager function

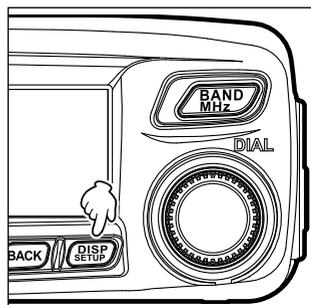
Use the pager code consisting of 2 CTCSS tones to exchange communications with specified stations.

Caution

The new pager does not function in digital mode. To transmit signals utilizing the pager codes, use the  key to switch the communication mode to AMS (Auto Mode Select function) or analog (FM) mode.

Setting the transceiver pager code

- 1 Press and hold  for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press .
The menu list appears.

SETUP MENU (1/2)	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-X
4 SIGNALING	8 CONFIG

- 3 Rotate the DIAL to select **[6 PAGER CODE]**, then press .
The pager setting screen appears.

SETUP MENU (SIGNALING 1/2)	
6 PAGER CODE	
7 PRG REV TONE	
8 BELL RINGER	
9 SQL EXPANSION	

- 4 Rotate the DIAL to select **[RX CODE 1]**, then press .
The code blinks.

PAGER CODE	
▶ RX CODE1(051)	
RX CODE2(471)	
TX CODE1(051)	
TX CODE2(471)	

- 5 Rotate the DIAL to select the desired code, and then press .
Select the first part of the code from 01 to 50.

Tip The default setting: 05

- 6 Rotate the DIAL to select **[RX CODE 2]**, then press .
The code blinks.

PAGER CODE	
RX CODE1(051)	
▶ RX CODE2(471)	
TX CODE1(051)	
TX CODE2(471)	

- 7 Rotate the DIAL to select the code, and then press .
Select the second part of the code from 01 to 50.

Tip The default setting: 47

Communicating with specific stations

- 8 Press and hold **DISP SETUP** for over one second.

Sets your station pager code and returns the display to the previously viewed screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

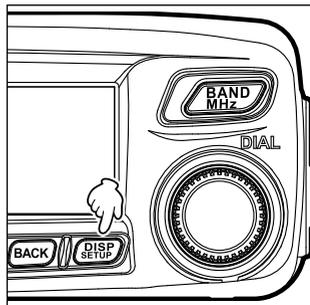
Tips

- Even if the first and second parts of the pager code are reversed, for example, [47 05] from [05 47], they are still recognized as the same code.
- If multiple stations set the same pager code, they can be called simultaneously.

Activating the new pager function

- 1 Press and hold **DISP SETUP** for over one second.

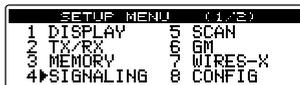
The Setup menu appears.



- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press

DISP SETUP.

The menu list appears.



- 3 Rotate the DIAL to select **[4 SQL TYPE]**, then press

DISP SETUP.



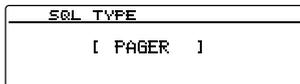
- 4 Rotate the DIAL to select **[PAGER]**, then press **DISP SETUP** for over one second.

Tips • Rotating the DIAL changes the squelch type in the following order:

“OFF”, “TONE ENC”, “TONE SQL”, “REV TONE”, “DCS”, “PR FREQ”, “PAGER”, “DCS ENC”*, “TONE DCS”*, “DCS TSQL”*

*To display these squelch types, from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

- Instead of following the steps 1 to 4 above, the squelch type may be changed by pressing **TXPO** and holding **TXPO** for over one second.

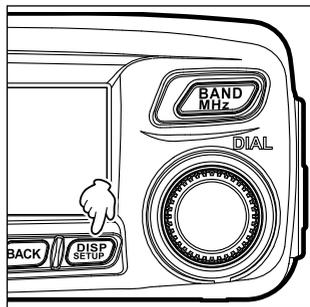


Displays **PAG** on the screen.

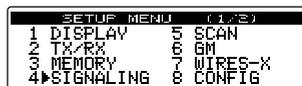
The operating band enters standby mode for receiving in the pager mode.

Calling a specific station

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



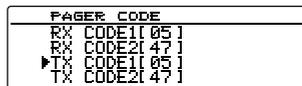
- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[6 PAGER CODE]**, then press **DISP SETUP**.
The code setting screen appears.



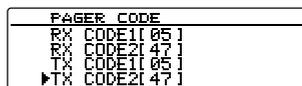
- 4 Rotate the DIAL to select **[TX CODE 1]**, then press **DISP SETUP**.
The code blinks.



- 5 Rotate the DIAL to select the desired code, then press **DISP SETUP**.
Select the first part of the code from 01 to 50.

Tip The default setting: 05

- 6 Rotate the DIAL to select **[TX CODE 2]**, then press **DISP SETUP**.
The code blinks.



- 7 Rotate the DIAL to select the code, then press **DISP SETUP**.
Select the second part of the code from 01 to 50.

Tip The default setting: 47

- 8 Press and hold **DISP SETUP** for over one second.

Sets the partner station code and returns the display to the previously viewed screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

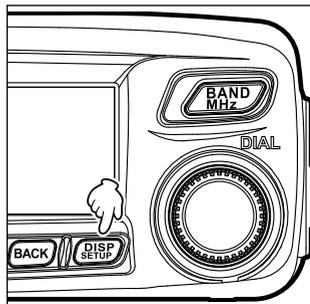
- 9 See “Activating the new pager function” on page 26 to activate the PAGER function.

- 10 Press **[PTT]** on the microphone.
Calls the partner station.

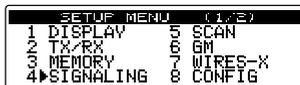
Notification of incoming calls from partner stations using the bell function

While communicating using the tone squelch, DCS, or new pager function, a beep may be programmed to sound when a signal containing the corresponding code is received.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **DISP SETUP**.
The menu list appears.



- 3 Rotate the DIAL to select **[8 BELL RINGER]**, then press **DISP SETUP**.



- 4 Rotate the DIAL to select the desired number of successive bell rings.
"1 OFF", "2 1 time", "3 3 times", "4 5 times", "5 8 times", "6 CONTINUOUS"



Tip The default setting: 1 OFF

- 5 Press and hold **DISP SETUP** for over one second.

Sets the selected beep setting and returns the display to the previously viewed screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

Other squelch functions

● Reverse tone

In Setup menu, select **[4 SIGNALING]** → **[4 SQL TYPE]** followed by **[REV TONE]**.

Using the Reverse Tone System, a tone is transmitted when there is no audio. When audio is transmitted on the signal, the tone is not transmitted.

The reverse tone frequency may be set in 100Hz intervals from 300Hz – 3000Hz (default 1500Hz) using the set-up menu **[4 SIGNALING]** → **[7 PRG REV TONE]**

● User Programmed Reverse CTCSS Decoder

In Setup menu, select **[4 SIGNALING]** → **[4 SIGNALING]** → **[PR FREQ]**.

The user programmable Reverse CTCSS Decoder will mute the FTM-100DR/DE receiver when a signal containing a matching CTCSS tone is received.

● DCS transmission

From the Setup menu, select **[4 SIGNALING]** → **[4 SQL TYPE]** followed by **[DCS ENC]**.

The DCS code is sent during transmission.

To use this function, from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

● CTCSS tone transmission / DCS code tone reception

From the Setup menu, select **[4 SIGNALING]** → **[4 SQL TYPE]** followed by **[TONE DCS]**.

The CTCSS tone is sent during transmission. In standby mode, the receiver waits for the matching DCS code signal to open the receiver audio.

To use this function, from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

● DCS code transmission / CTCSS tone reception

From the Setup menu, select **[4 SIGNALING]** → **[4 SQL TYPE]** followed by **[DCS TSQL]**.

The DCS code is sent during transmission. In standby mode, the receiver waits for the matching CTCSS tone signal to open the receiver audio.

To use this function, from the Setup menu, select **[4 SIGNALING]** → **[9 SQL EXPANSION]** followed by “1 ON”.

Using the DTMF function

DTMF tones (Dual Tone Multi Frequencies) are the tones you hear when dialing from a telephone keypad. The FTM-100DR/DE transceiver can transmit the DTMF codes by using the keys on the microphone or recalling registered numbers from memories.

The maximum of 16-digit DTMF codes can be registered in up to 9 memory channels. It is convenient to register telephone patch numbers, and network linking sequences to the DTMF memory channels.

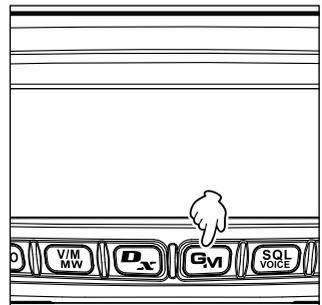
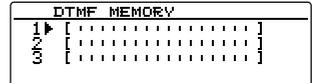
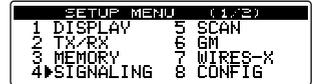
Tip

Transmits the DTMF code consisting of frequencies shown as follows.

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

Registering the DTMF code

- Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- Rotate the DIAL to select **[4 SIGNALING]**, then press **DISP SETUP**.
The menu list appears.
- Rotate the DIAL to select **[5 DTMF MEMORY]**, then press **DISP SETUP**.
The DTMF memory screen appears.
- Rotate the DIAL to select the desired memory channel to register the DTMF code, and then press **DISP SETUP**.
The cursor jumps to the left end of [| | | | | | |] displayed on the right.
- Rotate the DIAL to select the desired DTMF code, then press **Gv** (**→** appears on the upper side).
Tip You can also use the keypad on the microphone to input the DTMF code.
- Repeat step 5.
Tips
 - To move the cursor to the left, press **Dx** (**←** appears on the upper side).
 - To delete the number you have just entered and move the cursor to the left, press **SQL VOICE** (**X** appears on the upper side).



Using the DTMF function

7 Press **[DISP SETUP]**.

Sets the DTMF code.

Tip To register DTMF codes to other channels, repeat steps 4 to 6.

8 Press and hold **[DISP SETUP]** for over one second.

Sets the DTMF code and returns the display to the previously viewed screen.

Tip You can also return to the previous screen by pressing **[BACK]** 3 times.

Transmitting the registered DTMF code

1 Press and hold **[DISP SETUP]** for over one second.

The Setup menu appears.

2 Rotate the DIAL to select **[4 SIGNALING]**, then press

[DISP SETUP].

The menu list appears.

SETUP MENU (1/2)			
1	DISPLAY	5	SCAN
2	TX/RX	6	GM
3	MEMORY	7	WIRES-X
4	SIGNALING	8	CONFIG

3 Rotate the DIAL to select **[3 AUTO DIALER]**, then

press **[DISP SETUP]**.

The AUTO DIALER screen appears.

SETUP MENU (SIGNALING) 3			
1	TSQ SOL FREQ		
2	DES CODE		
3	AUTO DIALER		
4	SOL TYPE		

4 Rotate the DIAL to select "1 ON".

Rotating the DIAL changes the function between "1 ON" and "2 OFF".

AUTO DIALER	
1	ON
2	OFF

5 Press and hold **[DISP SETUP]** for over one second.

Returns the display to the previously viewed screen and displays **[PTT]** on the top right side of the screen.

Tip You can also return to the previous screen by pressing **[BACK]** 3 times.

6 While pressing and holding **[PTT]** on the microphone, use the number keys on the microphone to input the channel number to which the DTMF code is registered.

The DTMF code sequence is automatically transmitted.

7 Release **[PTT]**.

While transmitting the DTMF code, transmission status is sustained even when **[PTT]** is pressed.

Transmitting the DTMF code manually

1 Press and hold **[DISP SETUP]** for over one second.

The Setup menu appears.

2 Rotate the DIAL to select **[4 SIGNALING]**, then press

[DISP SETUP].

The menu list appears.

SETUP MENU (1/2)			
1	DISPLAY	5	SCAN
2	TX/RX	6	GM
3	MEMORY	7	WIRES-X
4	SIGNALING	8	CONFIG

Using the DTMF function

- 3 Rotate the DIAL to select **[3 AUTO DIALER]**, then press **(DISP SETUP)**.

The AUTO DIALER screen appears.

SETUP MENU (SIGNALING 1 5)	
1	TONE SQL FREQ
2	DCS CODE
3	AUTO DIALER
4	SQL TYPE

- 4 Rotate the DIAL to select "2 OFF".

Rotating the DIAL changes the function between "1 ON" and "2 OFF".

AUTO DIALER	
1	ON
2	OFF

- 5 Press and hold **(DISP SETUP)** for over one second.

Returns the display to the previously viewed screen and displays **FE** on the top right side of the screen.

Tip You can also return to the previous screen by pressing **(BACK)** 3 times.

- 6 While pressing and holding **[PTT]**, press the desired DTMF characters (**[0]** to **[9]**, **[*]**, **[#]**, or **[A]** to **[D]**), sequentially on the microphone keypad.

- 7 Release **[PTT]**.

While transmitting the DTMF code, transmission status is sustained even when **[PTT]** is pressed.

Using the timer function

Using the APO function

When the APO (Automatic Power-off) function is set to ON, the transceiver automatically turns off if no operation is performed for the designated time. A beep sounds about one minute before the transceiver turns off. For example, when connecting the transceiver to your car battery, the APO function prevents accidental draining of the battery.

- 1 Press and hold **DISP SETUP** for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select **[8 CONFIG]**, then press

DISP SETUP.

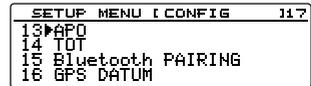
The menu list appears.



SETUP MENU	
1	DISPLAY
2	TX/RX
3	MEMORY
4	SIGNALING
5	SCAN
6	GM
7	WIRES-X
8	CONFIG

- 3 Rotate the DIAL to select **[13 APO]**, then press **DISP SETUP**.

Displays the screen where the remaining time until the power turns off is set.

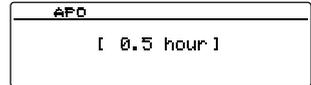


SETUP MENU [CONFIG]	
13	APO
14	TDT
15	Bluetooth PAIRING
16	GPS DATUM

- 4 Rotate the DIAL to select the desired remaining time from the following 14 options.

“0.5 hour”, “1.0 hour”, “1.5 hour”, “2.0 hour”, “3.0 hour”, “4.0 hour”, “5.0 hour”, “6.0 hour”, “7.0 hour”, “8.0 hour”, “9.0 hour”, “10.0 hour”, “11.0 hour”, “12.0 hour”

Tip When “OFF” is selected, the APO function does not activate.



APO
[0.5 hour]

- 5 Press and hold **DISP SETUP** for over one second.

The APO function is activated and the display returns to the previously viewed screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

Using the TOT function

By setting the TOT (Timeout Timer) function to ON, the transceiver automatically returns to receive after a transmission continues for the designated time. A beep sounds about 10 seconds before the transceiver returns to receive mode. The TOT prevents unintentional transmissions, interference to other communications and excessive battery power consumption.

- 1 Press and hold **DISP SETUP** for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select **[8 CONFIG]**, then press

DISP SETUP.

The menu list appears.

SETUP MENU [1/2]	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-X
4 SIGNALING	8 CONFIG

- 3 Rotate the DIAL to select **[14 TOT]**, then press **DISP SETUP**.

The screen is displayed where the time remaining until the transceiver returns to the receive mode may be set.

SETUP MENU [CONFIG 1/7]	
14 TOT	
15 Bluetooth PAIRING	
16 GPS DATUM	
17 GPS LOG	

- 4 Rotate the DIAL to select the desired remaining time from the following 8 options.

“1 min”, “2 min”, “3 min”, “5 min”, “10 min”, “15 min”, “20 min”, “30 min”

Tip When “OFF” is selected, the TOT function does not activate.

TOT
[1 min]

- 5 Press and hold **DISP SETUP** for over one second.

The TOT function is activated and the display returns to the previous operating screen.

Tip You can also return to the previous screen by pressing **BACK** 3 times.

Exchanging messages or images

While operating in digital mode, you can receive messages (text data) or images. Transmitted and received messages and images are all saved in the common list.

Cautions

- To receive a message or image, press **[Dx]** to switch the communication mode to AMS (Automatic Mode Select Function) or digital mode in advance.
- When sending a message or image, the communication mode automatically switches to digital mode.
- To save images, insert a micro-SD memory card into the transceiver (see page 2).

Tips

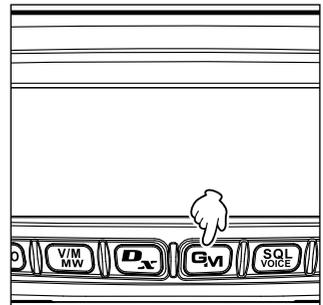
There are three types of digital mode as follows. For details, refer to the FTM-100DR/DE Operating Manual.

- V/D mode (simultaneous voice/data communication mode)
- Voice FR mode (voice full rate mode)
- Data FR mode (high speed data communication mode)

Viewing the message or image list

You can display the list of transmitted and received data. You can also select the desired data to check it.

- 1 Press and hold **[GM]** for over one second.
Displays “DG-ID SETUP” on the screen.
- 2 Press the **[BAND MHz]**, **[LOG]** appears on the left side.
Displays “LOG SELECT” on the screen.



- 3 Rotate the DIAL to select **[GM MESSAGE]** or **[GM PICT]**, then press **[DISP SETUP]**.

When **[GM MESSAGE]** is selected, the “GM MESSAGE” screen appears.



When **[GM PICT]** is selected, the “GM PICT” screen appears and the images and time stamps are listed.



Press **[Dx]** (**[INFO]** appears on the upper side) to switch the display to image size display. Pressing **[Dx]** each time switches the display.



Exchanging messages or images

- Tips**
-  displayed on the left side of the icon indicates that the image was successfully received.
 - Icons on the left side of the LOG list indicate the following.

NEW	Creating and sending a new message
 	Message received (unread)
 	Message received (read)
 	Message sent
 	Message failed to send
 	Image received (unread)
 	Image received (read)
 	Image sent
 	Image failed to send

- The data most recently received is on the top of the list.
- Press  ( appears on the upper side) to jump to the bottom of the list.
When there are many files, it may take a while to jump to the bottom of the list. Press **[PTT]** to cancel the operation halfway.
- Press  ( appears on the upper side) to jump to the top of the list.

4 Rotate the DIAL to select the data you want to check, then press .

Displays the selected data.

5 Press  twice.

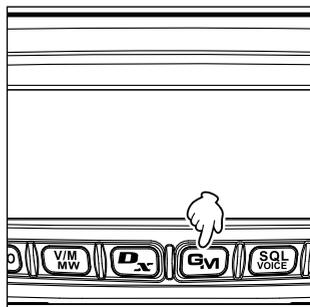
The display returns to the previously viewed operating screen.

Deleting messages or images

You can delete unnecessary messages and images from the micro-SD memory card.

Deleting data from the content display screen

- 1 Display the data you want to delete.
- 2 Press  ( appears on the upper side)
Displays the confirmation screen.



Exchanging messages or images

- 3 Rotate the DIAL to select [OK?], then press .
Starts the deletion process.
After completing deletion, the display returns to the data list screen.
Rows move up by one.



Tip To cancel deletion, select [Cancel], then press .

Deleting data from the list

- 1 From the data list, select the data you want to delete by rotating the DIAL.
- 2 Press  ( appears on the upper side).
Displays the confirmation screen.
- 3 Rotate the DIAL to select [OK?], then press .



Starts the deletion process.
After completing deletion, the display returns to the data list screen.
Rows move up by one.

Tip To cancel deletion, select [Cancel], then press .

Downloading messages or images

When there is a message or image sent in digital mode from a station on the same operating frequency, the content of the message or image is displayed for a certain period of time on the transceiver screen. Message data can be downloaded to the memory of the transceiver and image data can be downloaded to the micro-SD memory card inserted into the transceiver.

When receiving a message



When receiving an image



Tips

- While receiving an image, sender's call sign and ">>>>" appear to indicate the reception progress of the data.
- If the message cannot be downloaded successfully due to unsupported file format or other reasons, "Not Completed" appears.
- If the image data cannot be downloaded to the micro-SD memory card successfully due to insufficient memory space, "Insufficient SD's Memory" appears.

Sending messages or images

Send messages or images from the transceiver. Sent data can be viewed by all stations operating in digital mode on the same frequency.

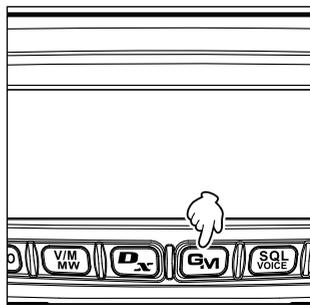
There are the following three ways for sending messages or images.

- (1) Creating and sending a new message
- (2) Replying to the sender of the downloaded message or image data
- (3) Forwarding the downloaded message or image data

Creating and sending a new message

Create a new message and send.

- 1 Press and hold **[GM]** for over one second.
Displays “LOG SELECT” screen.



- 2 Rotate the DIAL to select **[GM MESSAGE]**, then press **[DISP SETUP]**.
Displays the “GM MESSAGE” screen.



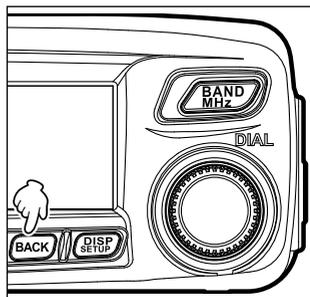
- 3 Rotate the DIAL to select **[NEW]**, then press **[DISP SETUP]**.
- 4 Press **[TXPO]** (**EDIT** appears on the upper side)
Displays the message entry screen.



- 5 See “Input characters” on FTM-100DR/DE Operating Manual to input a message.

- 6 Press **[BACK]**
Displays the entire message.

- Tips**
- To save the created message press **[D-x]** (**DISP SETUP** appears on the upper side). For details, see “Initializing micro-SD memory cards” on page 3.
 - To continue message entry, press **[TXPO]** (**EDIT** appears on the upper side).



Exchanging messages or images

- 7 Press **SQL VOICE** (**SEND** appears on the upper side).

Sends the message.

Tip To cancel transmission, press **BACK**.

When message transmission completes, “Completed” appears and then the screen returns to the message list screen. The tag of the transmitted message is added to the top of the list.



Using routine message

The following 19 routine messages are stored on the transceiver at the time of factory shipment for quick input.

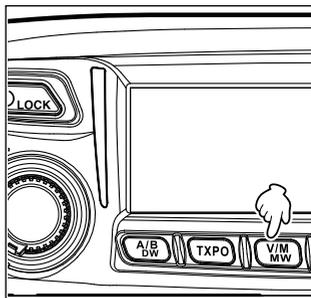
QRM	Good night
QRP	Send messages
QRT	Send pictures
QRX	on my way
QRZ	wait for you
QSY	Pick me up
Good morning	Thank you
Good job	OK
Good day	urgent
Good evening	

- 1 Follow the steps 1 through 3 of “Creating and sending a new message” on page 38 to display the message details screen.

- 2 Press **V/M MW** (**+ [MENU]** appears on the upper side)

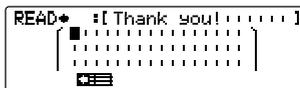
The routine messages are displayed at the top of the screen.

Tip For “01” to “10”, you can register a message comprising up to 16 letters. See “Initializing micro-SD memory cards” on page 3.



- 3 Rotate the DIAL to select the desired routine message, then press **DISP SETUP**.

Displays the selected routine message in the message entry field.



- 4 Press **V/M MW** (**+ [MENU]** appears on the upper side)
Hides the routine message display field at the top of the screen.



Exchanging messages or images

- 5 To add letters to the message, input letters following steps 4 through 5 of “Creating and sending a new message” on page 38.

● Registering routine messages

You can register up to 10 routine messages using a maximum of 80 characters. Messages you registered can be selected and used in the same way as the 43 prepared routine messages.

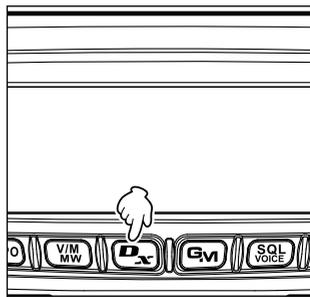
- 1 Follow steps 1 to 5 in “Creating and sending a new message” on page 38 to input a text message.

Tip Alphanumeric characters including symbols can be used.

- 2 Press **BACK**

- 3 Press **Ⓜ** (**☰** appears on the upper side).

Displays the routine message field at the top of the screen.



- 4 Rotate the DIAL to select the number where you want to register the message, then press **DISP SETUP**.

Tip You can select a number from “01” to “10”.

Registers the text as a routine message and closes the routine message field.

Tips • If you register a new message to a number where a message already has registered, the old message is overwritten.

- To cancel registration, press **Ⓜ** again (**☰** appears on the upper side).



Replying to the sender of the downloaded message or image data

Reply to the sender of the checked message or image data.

- 1 Press and hold **[GM]** for over one second.

Displays the “LOG SELECT” screen.

- 2 Rotate the DIAL to select **[GM MESSAGE]** or **[GM PICT]**, then press **[DISP SETUP]**.



When **[GM MESSAGE]** is selected, the “GM MESSAGE” screen appears.

When **[GM PICT]** is selected, the “GM PICT” screen appears.

- 3 Rotate the DIAL to select the data you want to reply to, then press **[DISP SETUP]**.

Displays the selected data.

[MESSAGE]



[PICT]



- 4 Press **[R]** (**[REPLY]** appears on the upper side).

Displays the message entry screen.

- 5 Enter the reply message.

See “Creating and sending a new message” on page 38 to enter the reply message.

Tips • When replying, the call sign of the MESSAGE/PICT data sender is automatically specified for “to:”.

- In other words, even if you specify the data sender’s call sign (name) for “to:” to reply, other stations operating GM on the same frequency can still view the message or image as long as they are within the communication range.

- 6 Press **[BACK]**.

Displays the entire message.

- 7 Press **[SQL VOICE]** (**[SEND]** appears on the upper side).

Sends the message. When message or image transmission completes, “Completed” appears and then the screen returns to either the message list screen or image list screen.

Forwarding the downloaded message or image data

You can forward the checked message or image data.

- 1 Press and hold **[GM]** for over one second.
Displays the “LOG SELECT” screen.
- 2 Rotate the DIAL to select **[GM MESSAGE]** or **[GM PICT]**, then press **[DISP SETUP]**.



When **[GM MESSAGE]** is selected, the “GM MESSAGE” screen appears.

When **[GM PICT]** is selected, the “GM PICT” screen appears.

- 3 Rotate the DIAL to select the data you want to forward, then press **[DISP SETUP]**.



Displays the selected data.

[MESSAGE]



[PICT]



- 4 Press **[V/M MW]** (**[FWD]** appears on the upper side).
“SEND ”to: ALL”” appears.
- 5 Rotate the DIAL to select **[OK?]**, then press **[DISP SETUP]**.
Sends the message or image. When message or image transmission completes, “Completed” appears and then the screen returns to either the message list screen or image list screen.



Copying the radio data to another transceiver

The memory channels and settings in the set-up menu can be copied to another FTM-100DR/DE transceiver. This is convenient, for example, to configure the transceiver to match to the settings of stations that you communicate with frequently.

Using a micro-SD memory card

The data files saved in the FTM-100DR/DE can be selected and copied to a micro-SD memory card which may then be used to transfer the data to other FTM-100DR/DE transceivers.

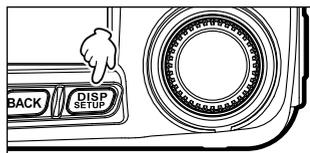
Copying data to a micro-SD memory card

- 1 Insert a micro-SD memory card into the transceiver.

Tip See “Inserting a micro-SD memory card” on page 2.

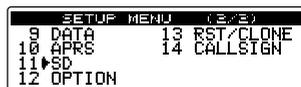
- 2 Press and hold **DISP SETUP** for over one second.

The Setup menu appears.



- 3 Rotate the DIAL to select **[11 SD]**, then press **DISP SETUP**.

The menu list appears.



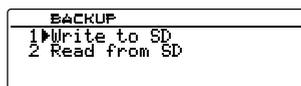
- 4 Rotate the DIAL to select **[1 BACKUP]**, then press **DISP SETUP**.

Displays the screen where you can select the copy direction.



- 5 Rotate the DIAL to select **[1 Write to SD]**, then press **DISP SETUP**.

The screen is displayed where the type of data to be transferred is selected.



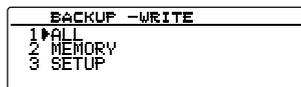
“1 ALL”: Copies all data in the transceiver.

“2 MEMORY”: Copies only information registered to the memory channels.

“3 SETUP”: Copies only settings in the Setup menu.

- 6 Rotate the DIAL to select the data to be copied, and then press **DISP SETUP**.

The confirmation screen appears.



- 7 Rotate the DIAL to select **[OK?]**, and then press **DISP SETUP**.

The data selected in step 6 is copied to the micro-SD memory card. While copying, “Writing...” appears, and when completing, it disappears.



- 8 Press and hold **DISP SETUP** for over one second.

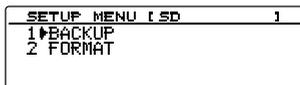
The display returns to the previously viewed operating screen.

Copying data from the micro-SD memory card

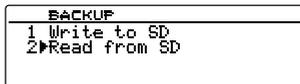
- 1 Insert the micro-SD memory card into the FTM-100DR/DE transceiver from which data is to be copied, and then copy the data to the card.
- 2 Remove the micro-SD memory card and insert it into the FTM-100DR/DE transceiver to which the data is to be copied.
- 3 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 4 Rotate the DIAL to select **[11 SD]**, then press **DISP SETUP**.
The menu list appears.



- 5 Rotate the DIAL to select **[1 BACKUP]**, then press **DISP SETUP**.
Displays the screen where the copy direction may be selected.



- 6 Rotate the DIAL to select **[2 Read from SD]**, then press **DISP SETUP**.
Displays the screen where the data type may be selected.



- 7 Rotate the DIAL to select the desired data type, then press **DISP SETUP**.



1 ALL: Copies all data in the transceiver.

2 MEMORY: Copies only information registered to the memory channels.

3 SETUP: Copies only settings in the Setup menu.

4 MEMORY (Import FTM-400DR):

Copies the memory channel data saved on the micro-SD memory card of the FTM-400DR transceiver.

Caution Insert the micro-SD memory card to which the FTM-400DR transceiver memory channel data is copied, into the transceiver.

The confirmation screen appears.

- 8 Rotate the DIAL to select **[OK?]**, and then press **DISP SETUP**.



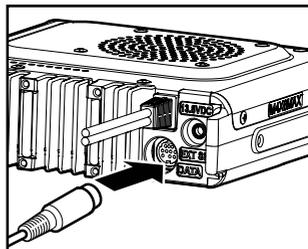
The data selected in step 7 is copied from the micro-SD memory card. While copying, "Reading..." appears, and when completing, it disappears.

Using the clone function

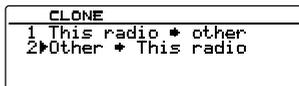
Using the clone function, all data saved in the transceiver can be copied directly to other FTM-100 transceivers.

Example: When using the clone function in two FTM-100DR/DE transceivers

- 1 Turn off the both transceivers.
- 2 Connect the optional clone cable "CT-166" to the DATA jack on the rear side of the transceivers.



- 3 Turn on both transceivers.
- 4 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 5 Rotate the DIAL to select **[13 RST/CLONE]**, then press **DISP SETUP**.
The menu list appears.
- 6 Rotate the DIAL to select **[7 CLONE]**, then press **DISP SETUP**.
Displays the screen where the copy direction may be selected.
- 7 On the transceiver from which data is to be copied, rotate the DIAL to select **[1 This radio → other]**, then press **DISP SETUP**.
The confirmation screen appears.
- 8 On the transceiver to which data is to be copied, rotate the DIAL to select **[2 Other → This radio]**, then press **DISP SETUP**.
The confirmation screen appears.
- 9 On the transceiver to which data is to be copied, rotate the DIAL to select **[OK?]**, then press **DISP SETUP**.



Copying the radio data to another transceiver

- 10** On the transceiver from which data is to be copied, rotate the DIAL to select **[OK?]**, then press **(DISP/SETUP)**.

The data copy starts.

When data copy completes, "Completed" appears.

The FTM-100DR/DE transceiver to which you copy the data restarts automatically. The screen displayed differs depending on the copied data.



- 11** On the transceiver from which data is to be copied, press and hold **(DISP/SETUP)** for over one second.

The display returns to the previously viewed operating screen.

- 12** Turn off the both transceivers, then disconnect the clone cable.

Cautions

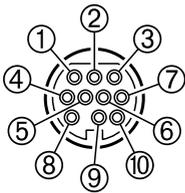
- When "ERROR" appears on the screen during the copy (clone) operation, the copy (clone) operation has not completed. Check the clone cable connection, and perform the operation from the beginning.
- To ensure the security of your data, it is recommended to copy your backup file onto a micro-SD memory card.
- If the operation is terminated due to power loss during the copy (clone) operation, the transceiver to which the data copies will be reset automatically. Check that there is no abnormality in the power supply and perform the operation again from the beginning.

Connecting an external device

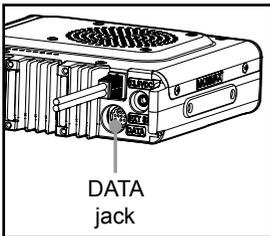
Using the provided PC connection cable “SCU-20” or another optional cable, the transceiver can be connected to a personal computer as a COM port for the following operations:

- Transferring GPS location data and import route mapping information into the computer software
- Updating the transceiver firmware
- Packet communication

The DATA jack on the rear side of the transceiver permits connecting external devices such as a computer. The pin assignment of the DATA jack is shown below.



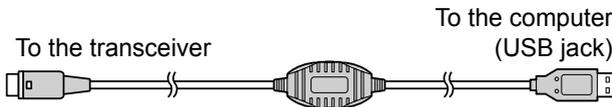
- ① PKD (packet data input)
- ② GND
- ③ PSK (PTT)
- ④ RX 9600 (9,600 bps packet data output)
- ⑤ RX 1200 (1,200 bps packet data output)
- ⑥ PK SQL (squellch control)
- ⑦ TXD (serial data output [transceiver → PC])
- ⑧ RXD (serial data input (transceiver ← PC])
- ⑨ CTS (data communication control)
- ⑩ RTS (data communication control)



Connecting to a computer

●Preparation

- Computer
- PC connection cable “SCU-20” (supplied)... When connecting to the USB jack of the computer

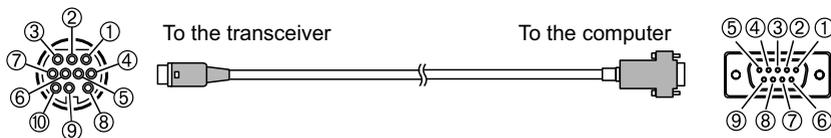


Tips

- Make sure to turn off the transceiver before connecting any cables.
- When using the SCU-20 PC connection cable, install the designated driver on the computer. Download the driver and installation manual from the Yaesu website.

Connecting an external device

- Data cable “CT-165” (optional)... When connecting to the RS-232C jack of the computer



- ① -
- ② GND
- ③ -
- ④ -
- ⑤ -
- ⑥ -
- ⑦ TXD (serial data output [transceiver → PC])
- ⑧ RXD (serial data input [transceiver ← PC])
- ⑨ CTS (data communication control)
- ⑩ RTS (data communication control)

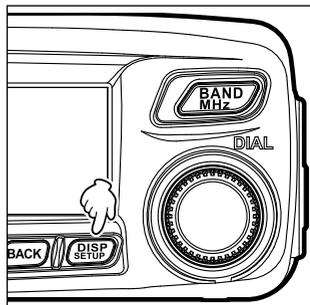
- ① -
- ② TXD (serial data output [transceiver → PC])
- ③ RXD (serial data input [transceiver ← PC])
- ④ -
- ⑤ GND
- ⑥ -
- ⑦ CTS (data communication control)
- ⑧ RTS (data communication control)
- ⑨ -

Tips

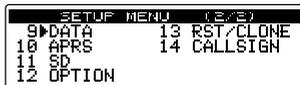
- Make sure to turn off the transceiver before connecting any cables.
- When using the SCU-20 PC connection cable, install the designated driver on the computer. Download the driver and installation manual from the Yaesu website.

Transmitting GPS location information

- 1 Turn on the transceiver.
- 2 Press and hold **DISP SETUP** for over one second. The Setup menu appears.



- 3 Rotate the DIAL to select **[9 DATA]**, then press **DISP SETUP**. The menu list appears.



- 4 Rotate the DIAL to select **[1 COM PORT SETTING]**, then press **DISP SETUP**. The detail settings screen appears.



Connecting an external device

- 5 Rotate the DIAL to select **[COM OUTPUT]**, then press .

COM PORT SETTING	
COM SPEED	[9600bps]
▶COM OUTPUT	[OFF]
WP FORMAT	[NMEA 9]
WP FILTER	[ALL]

- 6 Rotate the DIAL to select “GPS OUT”, then press .

The setting changes in the following order.

“OFF” → “GPS OUT” → “PACKET” → “WAYPOINT”

Tip The default setting: OFF

- 7 Rotate the DIAL to select **[COM SPEED]**, then press .

COM PORT SETTING	
▶COM SPEED	[9600bps]
COM OUTPUT	[OFF]
WP FORMAT	[NMEA 9]
WP FILTER	[ALL]

- 8 Rotate the DIAL to select the desired communication speed, then press .

The setting changes in the following order.

“4800 bps” → “9600 bps” → “19200 bps” → “38400 bps” → “57600 bps”

Tip The default setting: 9600bps

- 9 Press and hold  for over one second.

Returns the display to the previously viewed screen.

Transmits the location information data. Transmits the location information data to the computer at about one second intervals.

Tip

To use this information, software operating with NMEA-0183 specified GGA and RMC sentence is required.

Updating the transceiver firmware

When a new firmware update for the transceiver is available, download the information from the Yaesu website to update the transceiver to the latest state.

Using the transceiver for packet communications

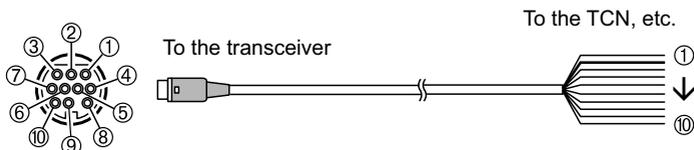
Connecting the transceiver to a TNC (Terminal Node Controller) enables packet communications through the transceiver.

● Preparation

- TNC
- Computer
- Data cable* ... Prepare a cable suitable for the connected device.

*The following optional products are available.

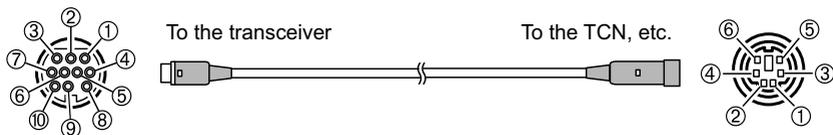
- Data cable “CT-167” (optional)



- ① PKD (packet data input)
- ② GND
- ③ PSK (PTT)
- ④ RX 9600 (9,600 bps packet data output)
- ⑤ RX 1200 (1,200 bps packet data output)
- ⑥ PK SQL (squelch control)
- ⑦ TXD (serial data output [transceiver → PC])
- ⑧ RXD (serial data input [transceiver ← PC])
- ⑨ CTS (data communication control)
- ⑩ RTS (data communication control)

- ① brown PKD (packet data input)
- ② thick black GND
- ③ red PSK (PTT)
- ④ orange RX 9600 (9,600 bps packet data output)
- ⑤ yellow RX 1200 (1,200 bps packet data output)
- ⑥ green PK SQL (squelch control)
- ⑦ blue TXD (serial data output [transceiver → PC])
- ⑧ gray RXD (serial data input [transceiver ← PC])
- ⑨ white CTS (data communication control)
- ⑩ black RTS (data communication control)

- Data cable “CT-164” (optional)

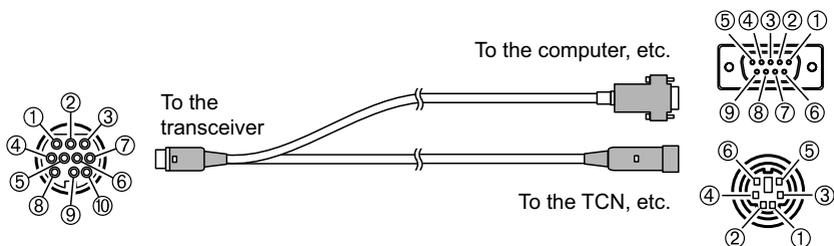


- ① PKD (packet data input)
- ② GND
- ③ PSK (PTT)
- ④ RX 9600 (9,600 bps packet data output)
- ⑤ RX 1200 (1,200 bps packet data output)
- ⑥ PK SQL (squelch control)
- ⑦ -
- ⑧ -
- ⑨ -
- ⑩ -

- ① PKD (packet data input)
- ② GND
- ③ PSK (PTT)
- ④ RX 9600 (9,600 bps packet data output)
- ⑤ RX 1200 (1,200 bps packet data output)
- ⑥ PK SQL (squelch control)

Connecting an external device

- Data cable “CT-163” (optional)



- ① PKD (packet data input)
- ② GND
- ③ PSK (PTT)
- ④ RX 9600 (9,600 bps packet data output)
- ⑤ RX 1200 (1,200 bps packet data output)
- ⑥ PK SQL (squelch control)
- ⑦ TXD (serial data output [transceiver → PC])
- ⑧ RXD (serial data input [transceiver ← PC])
- ⑨ CTS (data communication control)
- ⑩ RTS (data communication control)

Dsub 9 pin

- ① –
- ② TXD (serial data output [transceiver → PC])
- ③ RXD (serial data input [transceiver ← PC])
- ④ –
- ⑤ GND
- ⑥ –
- ⑦ CTS (data communication control)
- ⑧ RTS (data communication control)
- ⑨ –

DIN 6 pin

- ① PKD (packet data input)
- ② GND
- ③ PSK (PTT)
- ④ RX 9600 (9,600 bps packet data output)
- ⑤ RX 1200 (1,200 bps packet data output)
- ⑥ PK SQL (squelch control)

Tips

- Make sure to turn off the transceiver before connecting cables.
- For details on connecting to a TNC or computer, see the instruction manual supplied with the TNC.
- The computer may cause interference with reception.
When signals cannot be received normally, move the computer away from the transceiver and use a photo-coupler and noise filter to connect.

● Setting the packet communication operation

- 1 Turn on the transceiver.
- 2 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 3 Rotate the DIAL to select **[9 DATA]**, then press **DISP SETUP**.
The menu list appears.
- 4 Rotate the DIAL to select **[1 COM PORT SETTING]**, then press **DISP SETUP**.
The detail settings screen appears.

SETUP MENU (V.2.3)	
9 DATA	13 EST/CLONE
10 APRS	14 CALLSIGN
11 SD	
12 OPTION	

SETUP MENU [DATA]	
1 COM PORT SETTING	
2 DATA SPEED	
3 DATA SQUELCH	

Connecting an external device

- 5 Rotate the DIAL to select **[COM OUTPUT]**, then press **(DISP SETUP)**.

COM PORT SETTING	
COM SPEED	[9600bps]
▶COM OUTPUT	[OFF]
WP FORMAT	[NMEA 9]
WP FILTER	[ALL]

- 6 Rotate the DIAL to select “PACKET”, then press **(DISP SETUP)**.
“OFF” → “GPS OUT” → “PACKET” → “WAYPOINT”

Tip The default setting: OFF

- 7 Rotate the DIAL to select **[COM SPEED]**, then press **(DISP SETUP)**.

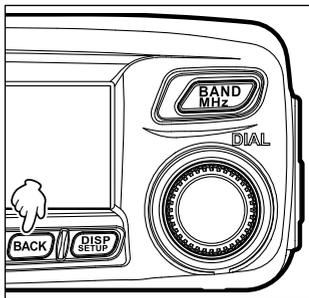
COM PORT SETTING	
▶COM SPEED	[9600bps]
COM OUTPUT	[OFF]
WP FORMAT	[NMEA 9]
WP FILTER	[ALL]

- 8 Rotate the DIAL to select the desired communication speed, then press **(DISP SETUP)**.
The setting changes in the following order.

“4800 bps” → “9600 bps” → “19200 bps” → “38400 bps” → “57600 bps”

Tip The default setting: 9600 bps

- 9 Press **(BACK)**.



- 10 Rotate the DIAL to select **[2 DATA SPEED]**, then press **(DISP SETUP)**.

The detail settings screen appears.

SETUP MENU [DATA] 1	
1	COM PORT SETTING
2	▶DATA SPEED
3	DATA SQUELCH

- 11 Rotate the DIAL to select **[DATA]**, and then press **(DISP SETUP)**.

DATA SPEED	
APRS:	[1200 bps]
▶DATA:	[1200 bps]

- 12 Rotate the DIAL to select the desired packet communication speed, then press **(DISP SETUP)**.

Rotating the DIAL changes the speed between “1200 bps” and “9600 bps”.

Tip The default setting: 1200 bps

- 13 Press **(BACK)**.

- 14 Rotate the DIAL to select **[3 DATA SQUELCH]**, then press **(DISP SETUP)**.

The detail settings screen appears.

SETUP MENU [DATA] 1	
1	COM PORT SETTING
2	DATA SPEED
3	▶DATA SQUELCH

Connecting an external device

- 15** Rotate the DIAL to select the desired squelch detection method for the packet communication, then press **DISP SETUP**.



Select "1 TX:ON" or "2 TX:OFF".

Tip The default setting: 1 TX:ON

- 16** Press and hold **DISP SETUP** for over one second.

Returns the display to the previously viewed operating screen.

Enables the packet communication.

- 17** Using the settings in the Setup menu, select the band and frequency.

- 18** Rotate VOL.

Sets the output level to the TNC from the transceiver.

- 19** Adjust the TNC output level.

Sets the input level to the transceiver.

Caution

Transmitting a large amount of data may take a long time, causing for the transceiver to overheat.

When overheating occurs, the high temperature prevention circuit activates to lower the transmit power output. If transmission continues further, the transceiver automatically cancels transmit and returns to receive mode in order to prevent damage to the transceiver.

When the high temperature protection circuit activates, turn the power OFF or leave the transceiver in receive mode until the temperature cools.

Tip

Use the optional cooling fan SMB-201 to effectively cool down the transceiver that has heated up due to continuous transmission.

Other connectable devices

● External speaker

The optional high output, high fidelity, waterproof external speaker “MLS-200-M10” may be connected to the transceiver.

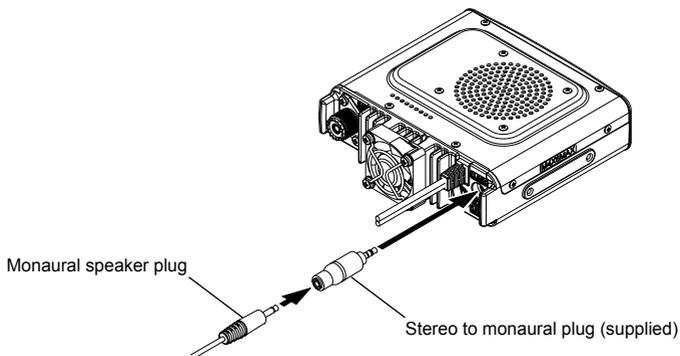
Plug the external speaker into the EXT SP jack on the rear side of the transceiver.

Tip

When an external speaker is connected to the EXT SP jack, the internal speaker does not output audio.

Caution

When connecting an external speaker other than the optional MLS-200-M10 to the EXT SP jack on the rear of the transceiver, use only a stereo type speaker plug. Sound outputs only from the L (left) side. Using a monaural speaker plug may cause a malfunction of the transceiver. When connecting a monaural speaker, use the supplied stereo to monaural adapter plug (refer to the illustration below).



Customizing Menu Settings and User Preferences

From the Setup menu, the various functions of the transceiver may be customized according to your personal preferences. The functions are categorized into: display, transmission/reception, memory, device configuration, etc., in the menu. It is easy to select the item to adjust from each menu list, and then input or select the desired setting.

Setup menu basic operations

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select the desired menu item, then select **DISP SETUP**.
The menu list appears.
- 3 Rotate the DIAL to select the item to be set, then press **DISP SETUP**.
- 4 Rotate the DIAL to change the setting value.

SETUP MENU (MENU)			
1	DISPLAY	5	SCAN
2	TX/RX	6	GM
3	MEMORY	7	WIRES-X
4	SIGNALING	8	CONFIG

SETUP MENU (DISPLAY 1)			
1	SUB DISPLAY SELECT		
2	LCD BRIGHTNESS		
3	LCD CONTRAST		
4	GPS INFORMATION		

SUB DISPLAY SELECT			
1	SUB BAND		
2	TIME		
3	VOLT		

- 5 Press and hold **DISP SETUP** for over one second, or press **[PTT]**.

The selected value is set, and the display returns to the previous operating screen.

- Tips**
- Pressing the **GM** key can also confirm the set value and return the screen to the previously viewed screen.
 - To set other items from the same menu list, press **BACK** to confirm the setting value and return the display to the menu list screen.
 - Pressing **BACK** on each screen returns the display to previously viewed screen.

Tip

When a selected Setup Menu item is displayed, the previously set value will be shown on the screen. A beep sounds when the default value is selected while setting the new setting value.

Setup-menu listing

Menu / Item		Description	Selectable options (Options in bold are the default settings)
1 DISPLAY			
1	SUB DISPLAY SELECT	Sets the sub-display content	SUB BAND / TIME / VOLT
2	LCD BRIGHTNESS	Sets the screen brightness	MIN / 2 / 3 / 4 / 5 / 6 / MAX
3	LCD CONTRAST	Sets the screen contrast	-3 / -2 / -1 / 0 / +1 / +2 / +3
4	GPS INFORMATION	Switches the GPS information	LOCATION / FREQUENCY
2 TX/RX			
1	ANALOG MODE SELECT	Sets analog mode	AUTO / MANUAL (FM) / MANUAL (AM)
2	MIC GAIN	Sets the microphone sensitivity	MIN / LOW / NORMAL / HIGH / MAX
3	AMS TX MODE	Sets the transmission mode	AUTO / TX MANUAL / TX FM FIXED / TX DN FIXED / TX VW FIXED
4	DIGITAL POPUP TIME	Sets the information pop-up time	OFF / 2 sec / 4 sec / 6 sec / 8 sec / 10 sec / 20 sec / 30 sec / 60 sec / CONTINUE
5	LOCATION SERVICE	Sets your location information display in digital mode	ON / OFF For details, refer to the GM Function Instruction Manual.
6	STANDBY BEEP	Activates/deactivates the standby beep	ON / OFF
7	HALF DEVIATION	Activates/deactivates the half deviation	ON / OFF
3 MEMORY			
1	ALPHA TAG SIZE	Sets the memory channel tag display size	SMALL / LARGE
2	MEMORY SCAN TYPE	Sets the memory scan method	ALL MEMORY / SELECT MEMORY
4 SIGNALING			
1	TONE SQL FREQ	Sets the tone frequency	67.0 Hz to 254.1 Hz 100.0 Hz
2	DCS CODE	Sets the DCS code	023 to 754
3	AUTO DIALER	Activates/deactivates the DTMF code automatic transmission	ON / OFF
4	SQL TYPE	Sets the squelch type	OFF / TONE ENC / TONE SQL / REV TONE / DCS / PR FREQ / PAGER / DCS ENC* / TONE DCS* / DCS TSQL* *Displays only when [4 SIGNALING] → [9 SQL EXPANSION] is set to "ON".
5	DTMF MEMORY	Registers the DTMF code	1 to 9, 16 characters for each
6	PAGER CODE	Sets the individual pager code	RX CODE 1: 01 to 50 05 RX CODE 2: 01 to 50 47 TX CODE 1: 01 to 50 05 TX CODE 2: 01 to 50 47
7	PRG REV TONE	Set the idle line squelch	300 Hz to 3000 Hz 1500 Hz
8	BELL RINGER	Sets the number of successive bell rings	OFF / 1 time / 3 times / 5 times / 8 times / CONTINUOUS

Setup-menu listing

Menu / Item		Description	Selectable options (Options in bold are the default settings)
9	SQL EXPANSION	Sets the squelch type separately for transmission and reception	ON / OFF
10	WX ALERT (USA Version Only)	Weather alert operation setting	ON / OFF
5 SCAN			
1	DUAL WATCH STOP	Sets the signal reception method	AUTO / HOLD
2	SCAN DIRECTION	Sets the scanning direction when scanning starts	UP / DOWN
3	SCAN RESUME	Sets the operation when scanning stops	BUSY / HOLD / 1 sec / 3 sec / 5 sec
4	DUAL WATCH MODE	Sets the reception time while processing the dual reception function	0.3 sec to 10 sec 5.0 sec
6 GM			
1	DP-ID LIST	Displays the DP-ID List screen	-
2	RANGE RINGER	Activates/deactivates the alert sound when detecting stations within communication range	OFF / ON
3	MESSAGE POPUP	Activates/deactivates the pop-up message display	OFF / ON
4	RADIO ID	Displays the transceiver IDs	- (uneditable)
* For details of the functions, refer to the GM Function Instruction Manual.			
7 WIRES-X			
1	RPT/WIRES FREQ	Sets the operating frequencies for repeater and WIRES-X operations. Registers the preset frequency	MANUAL / PRESET
	FREQ		Depends on the transceiver version
2	DG-ID	Sets the DG-ID number for WIRES-X	AUTO / 01 to 99
* For details of the functions, refer to the WIRES-X Instruction Manual.			
8 CONFIG			
1	DATE & TIME ADJUST	Sets the date and time using the internal clock	month/day/year, hour : minute
2	TIME FORMAT	Sets the time display format	24 hour / 12 hour
3	TIME ZONE	Sets the time zone	UTC ±14h (0.5 h interval) UTC ±0:00
4	AUTO REPEATER SHIFT	Activates/deactivates the automatic repeater shift function	OFF / ON
5	REPEATER SHIFT	Sets the repeater shift direction	SIMPLEX / - REPEATER / + REPEATER (Differs depending on frequency)

Setup-menu listing

Menu / Item		Description	Selectable options (Options in bold are the default settings)
6	REPEATER SHIFT FREQ	Sets the repeater shift width	0.000 to 99.950MHz (Differs depending on frequency)
7	FM AM STEP	Sets the channel step	AUTO / 5.00 KHz / 6.25 KHz / (8.33 KHz) / 10.00 KHz / 12.50 KHz / 15.00 KHz / 20.00 KHz / 25.00 KHz / 50.00 KHz / 100.00 KHz
8	BEEP	Sets the beep function	OFF / LOW / HIGH
9	CLOCK TYPE	Sets the clock shift	A / B
10	MIC PROGRAM KEY	Sets the microphone P buttons	OFF / SQL TYPE / SCAN / HOME / DCS CODE / TONE FREQ / RPT SHIFT / REVERSE / TX POWER / SQL OFF / T-CALL / VOICE* / D_X / WX / S-LIST / MSG / REPLY / M-EDIT *Displays when the optional FVS-2 is attached. P1KEY: SQL OFF (T-CALL: European version) P2KEY: HOME P3KEY: D_X P4KEY: TX POWER
11	RX COVERAGE	Sets the reception range expansion setting to on/off	NORMAL / WIDE
12	UNIT	Sets the unit used for the display	METRIC / INCH (Depends on the transceiver version)
13	APO	Sets the APO action time	OFF / 0.5 hour to 12.0 hour
14	TOT	Sets the time-out timer	OFF / 1 min / 2 min / 3 min / 5 min / 10 min / 20 min / 30 min
15	Bluetooth PAIRING	Sets the PIN code and starts pairing	0000 to 9999 6111
16	GPS DATUM	Selects the GPS function positioning	WGS-84 / TOKYO MEAN
17	GPS LOG	Sets the time interval to log the GPS location information	OFF / 1 sec / 2 sec / 5sec / 10 sec / 30 sec / 60 sec
9 DATA			
1	COM PORT SETTING	Sets the COM port	COM SPEED: 4800bps / 9600bps / 19200bps / 38400bps / 57600bps COM OUTPUT: OFF / GPS OUT / PACKET / WAYPOINT WP FORMAT: NMEA6 / NMEA7 / NMEA8 / NMEA9 WP FILTER: ALL / MOBILE / FREQUENCY / OBJECT/ITEM / DIGIPEATER / VoIP / WEATHER / YAESU / CALL RINGER / RNG RINGER
2	DATA SPEED	Sets the APRS/DATA communication baud rate	APRS: 1200 bps / 9600 bps DATA: 1200 bps / 9600 bps

Setup-menu listing

Menu / Item		Description	Selectable options (Options in bold are the default settings)
	3	DATA SQUELCH	Sets the squelch detection to on/off TX: ON / TX: OFF
10 APRS			
	1	APRS COMPASS	Sets the APRS compass display NORTH UP / HEADING UP
	2	APRS DISTINATION	Displays the model code APY*** (cannot edit)
	3	APRS FILTER	Sets the filter function Mic-E: ON / OFF POSITION: ON / OFF WEATHER: ON / OFF OBJECT: ON / OFF ITEM: ON / OFF STATUS: ON / OFF OTHER: ON / OFF RANGE LIMIT: 1 to 3000 / OFF ALT.NET: ON / OFF
	4	APRS MESSAGE TEXT	Inputs the predetermined routine message 1 to 8 ch
	5	APRS MODEM	Activates/deactivates the APRS function OFF / ON
	6	APRS MUTE	Activates/deactivates the AF mute function when using the APRS function OFF / ON
	7	APRS POP-UP	Sets the duration time for displaying the pop-up beacons and messages BEACON: OFF / 3 sec / 5 sec / 10 sec / HOLD MESSAGE: OFF / 3 sec / 5 sec / 10 sec / HOLD MYPACKET: OFF / ON
	8	APRS RINGER	Sets the audio alert when receiving beacons TX BEACON: ON / OFF TX MESSAGE: ON / OFF RX BEACON: ON / OFF RX MESSAGE: ON / OFF MY PACKET: ON / OFF CALL RINGER: ON / OFF RANGE RINGER: 1 to 100 / OFF MSG VOICE: ON / OFF
	9	APRS RINGER (CALL)	Sets the call sign for CALL RINGER 1 to 8 stations (*****)
	10	APRS TX DELAY	Sets the data transmission delay time 100 ms / 150 ms / 200 ms / 250 ms / 300 ms / 400 ms / 500 ms / 750 ms / 1000 ms
	11	APRS UNITS	Sets the unit used for the APRS display POSITION: dd°mm'mm" / dd°mm.mm' DISTANCE: km / mile SPEED: km/h / mph / knot ALTITUDE: m / ft BARO: hPa / mb / mmHg / inHg TEMP: °C / ° F RAIN: mm / inch WIND: m/s / mph / knot

Setup-menu listing

Menu / Item	Description	Selectable options (Options in bold are the default settings)
12 BEACON INFO SELECT	Sets the beacon information to transmit	AMBIGUITY: OFF / 1 to 4 digit SPEED/COURSE: ON / OFF ALTITUDE: ON / OFF
13 BEACON STATUS TEXT	Sets the status text input	SELECT: TEXT 1 to 5 / OFF TX RATE: 1/1 to 1/8 / 1/2 (FREQ) to 1/8 (FREQ) TEXT 1 to 5: NONE / FREQUENCY / FREQ & SQL & SHIFT
14 BEACON TX	Switches the beacon transmission between automatic transmission and manual transmission	AUTO: OFF / ON / SMART INTERVAL: 30sec to 60min 5min PROPORTIONAL: ON / OFF DECAY: ON / OFF LOW SPEED: 1 to 99 3 RATE LIMIT: 5sec to 180sec 30sec
15 DIGI PATH SELECT	Sets the digital repeater route	OFF / WIDE1-1 / WIDE1-1,WIDE2-1
16 MY CALLSIGN (APRS)	Sets your call sign	*****-**
17 MESSAGE GROUP	Sets the group filter for received messages	GROUP 1: ALL***** GROUP 2: CQ***** GROUP 3: QST***** GROUP 4: YAESU**** GROUP 5: - GROUP 6: - BULLETIN 1: BLN?***** BULLETIN 2: BLN? BULLETIN 3: BLN?
18 MESSAGE REPLY	Sets the automatic response for received messages	REPLY: OFF / ON CALLSIGN: *****-** REPLY TEXT: -
19 MY POSITION SET	Sets your location	GPS / MANUAL
20 MY POSITION	Sets your location manually	LAT:[N *°**.'**' (**'**)] LON:[E *°**.'**' (**'**)]
21 MY SYMBOL	Sets your station symbol	ICON 1: [/>] Car ICON2: [/R] REC.Vehicle ICON3: [/-] House QTH (VHF) USER: [YY] Yaesu Radios
22 POSITION COMMENT	Sets the location comments	Off Duty / En Route / In Service / Returning / Committed / Special / Priority / Custom 0 to 6 / Emergency!
23 SmartBeaconing	Sets the smart beaconing	STATUS: OFF / TYPE1 / TYPE2 / TYPE3 LOW SPEED: 2 to 30 5 HIGH SPEED: 3 to 90 70 SLOW RATE: 1 to 100min 30min FAST RATE: 10 to 180sec 120sec TURN ANGLE: 5 to 90° 28° TURN SLOPE: 1 to 255 26 TURN TIME: 5 to 180sec 30sec

Setup-menu listing

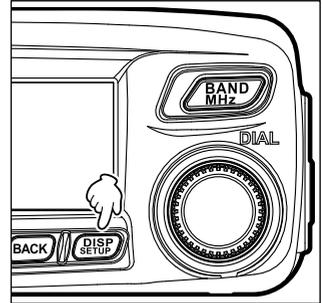
Menu / Item		Description	Selectable options (Options in bold are the default settings)
24	SORT FILTER	Sets the sort and filter functions	SORT: TIME / CALLSIGN / DISTANCE FILTER: ALL / MOBILE / FREQUENCY / OBJECT/ITEM / DIGIPEATER / VoIP / WEATHER / YAESU / OTHER PACKET / CALL RINGER / RANGE RINGER / 1200 bps / 9600 bps
25	VOICE ALERT	Sets the voice alert function	V ALERT: NORMAL / TONE SQL / DCS / RX-TSQL / RX-DCS TONE SQL: 67.0Hz to 254.1Hz 100.0Hz DCS: 023 to 754 023
* For details of the functions, refer to the APRS Instruction Manual.			
11 SD			
1	BACKUP	Copies information to/ from the micro-SD memory card	Write to SD / Read from SD
2	FORMAT	Initializes the micro-SD memory card	-
12 OPTION			
1	Bluetooth	Sets the Bluetooth headset	AUDIO: AUTO / FIX BATTERY: NORMAL / SAVE PTT MODE: MOMENTARY / TOGGLE VOX: ON / OFF GAIN: HIGH / LOW
2	VOICE MEMORY	Sets the voice memory function	PLAY/REC: FREE 5min / LAST 30sec ANNOUNCE: AUTO / MANUAL LANGUAGE: JAPANESE / ENGLISH VOLUME: HIGH / MID / LOW
13 RST/CLONE			
1	FACTORY RESET	Restores all settings to the default state	-
2	PRESET	Presets the desired setting value	-
3	RECALL PRESET	Recalls the preset information	-
4	MEMORY CH RESET	Clears the information registered to the memory channels	-
5	MEMORY CH SORT	Sorts the memory channels you use	-
6	APRS RESET	Restores all the APRS settings to the default state	-
7	CLONE	Copies all the saved data	This radio → other / Other → This radio
8	SOFTWARE VERSION	Displays the transceiver software version	MAIN CPU Ver: *.* / PANEL CPU Ver: *.* / DSP CPU Ver: *.*
14 CALLSIGN			
1	MY CALLSIGN (DIGITAL)	Sets your station call sign	*****

Setup menu operations: 1 DISPLAY

Setting up the screen display (1 SUB DISPLAY SELECT)

Choose the information to be shown on the sub-display.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[1 DISPLAY]**, then press **DISP SETUP**.
- 3 Rotate the DIAL to select **[1 SUB DISPLAY SELECT]**, then press **DISP SETUP**.
The sub-display setting screen appears.



- 4 Rotate the DIAL to select the information to display on the sub-display.



- 1 SUB BAND: Displays the sub-band operating information.
- 2 TIME: Displays the time.
- 3 VDD: Displays the voltage.



Tip The default setting: 1 SUB BAND

- 5 Press and hold **DISP SETUP** for over one second.

Sets the information displayed on the sub-display and returns the display to the previous operating screen.

Setting the display brightness (2 LCD BRIGHTNESS)

You can adjust the display brightness.

For details, see "Adjusting the display brightness" on page 6.

Setting the display contrast (3 LCD CONTRAST)

You can adjust the display contrast.

For details, see "Adjusting the display brightness" on page 6.

Switching the GPS information (4 GPS INFORMATION)

You can set the information to display on the GPS INFO screen.

- 1 Press and hold  for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select [1 DISPLAY], then press .

SETUP MENU		1/2/3/	
1	DISPLAY	5	SCAN
2	TX/RX	6	GM
3	MEMORY	7	WIRES-X
4	SIGNALING	8	CONFIG

- 3 Rotate the DIAL to select [4 GPS INFORMATION], then press .

SETUP MENU DISPLAY		1
1	SUB DISPLAY SELECT	
2	LCD BRIGHTNESS	
3	LCD CONTRAST	
4	GPS INFORMATION	

- 4 Rotate the DIAL to select the GPS information to be displayed.

1 LOCATION: Displays your location information.

2 FREQUENCY: Displays the frequency.

Tip The default setting: 1 LOCATION

GPS INFORMATION	
1	LOCATION
2	FREQUENCY

- 5 Press and hold  for over one second.

Sets the display information and returns the display to the previously viewed screen.

Setup menu operations: 2 TX/RX

Setting the modulation mode (1 ANALOG MODE SELECT)

You can select the modulation mode in analog mode.
For details, refer to the FTM-100DR/DE Operating Manual.

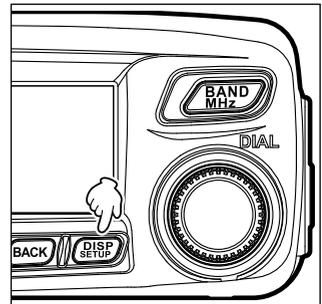
Setting the microphone sensitivity (2 MIC GAIN)

You can set the microphone sensitivity (microphone gain).
For details, see “Adjusting the microphone sensitivity” on page 4.

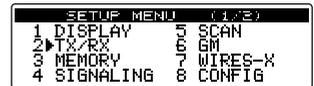
Setting the transmission mode when using the AMS function (3 AMS TX MODE)

You can select the transmission mode when using the AMS function.

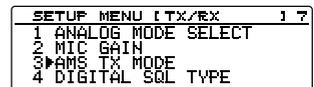
- 1 Press and hold  for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select [2 TX/RX], then press .



- 3 Rotate the DIAL to select [3 AMS TX MODE], then press .



- 4 Rotate the DIAL to select the desired transmission mode.



Setup menu operations: 2 TX/RX

1 AUTO:

Automatically selects one of the 4 communication modes according to the received signal.

2 TX MANUAL:

Automatically selects one of the 4 communication modes according to the received signal. Briefly pressing [PTT] on the microphone switches between digital mode and analog mode.

3 TX FM FIXED:

Automatically selects one of the 4 communication modes according to the received signal. Always switches to FM mode for transmission.

4 TX DN FIXED:

Automatically selects one of the 4 communication modes according to the received signal. Always switches to DN mode for transmission.

5 TX VW FIXED:

Automatically selects one of the 4 communication modes according to the received signal. Always switches to VW mode for transmission.

Tips • The default setting: 2 TX MANUAL

- When "■" blinks: 2 TX MANUAL
 - When "○○" blinks: 3 TX FM FIXED / 4 TX DN FIXED / 5 TX VW FIXED
 - When "○○" lights up: 1 AUTO
- *The "○○" part differs depending on the received signal.

5 Press and hold for over one second.

Sets the transmission mode when using the AMS function and returns the display to the previously viewed screen.

Setting the time to display the partner station information in a pop-up window (4 DIGITAL POPUP TIME)

You can set the time to display the partner station information such as the call sign.

1 Press and hold for over one second.

The Setup menu appears.

2 Rotate the DIAL to select [2 TX/RX], then press

.

SETUP MENU [TX/RX]	
1 DISPLAY	3 SCAN
2 TX/RX	4 CH
3 MEMORY	5 WIFES-X
4 SIGNALING	6 CONFIG

3 Rotate the DIAL to select [4 DIGITAL POPUP TIME], then press

.

SETUP MENU [TX/RX]		1 7
4 DIGITAL POPUP TIME		
5 LOCATION SERVICE		
6 STANDBY BEEP		
7 HALF DEVIATION		

Setup menu operations: 2 TX/RX

- 4 Rotate the DIAL to select the time to display the pop-up window.

“1 OFF”, “2 2 sec”, “3 4 sec”, “4 6 sec”, “5 8 sec”,
“6 10 sec”, “7 20 sec”, “8 30 sec”, “9 60 sec”,
“10 CONTINUE”

Tip The default setting: 6 10 sec

DIGITAL POPUP TIME	
5	8 sec
6	10 sec
7	20 sec
8	30 sec

- 5 Press and hold **(DISP SETUP)** for over one second.

Sets the time and returns the display to the previously viewed screen.

Setting your location information display (5 LOCATION SERVICE)

For details of the functions, refer to the GM Function Instruction Manual (download from Yaesu website).

Sounding a beep when a partner station ends a transmission (6 STANDBY BEEP)

In digital communication, the transceiver can inform you that the partner station completes a transmission by emitting a beep.

- 1 Press and hold **(DISP SETUP)** for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select **[2 TX/RX]**, then press

(DISP SETUP).

SETUP MENU		1 7
1	DISPLAY	5 SCAN
2	TX/RX	6 GM
3	MEMORY	7 WIRES-X
4	SIGNALING	8 CONFIG

- 3 Rotate the DIAL to select **[6 STANDBY BEEP]**, then press **(DISP SETUP)**.

SETUP MENU [TX/RX]		1 7
4	DIGITAL POPUP TIME	
5	LOCATION SERVICE	
6	STANDBY BEEP	
7	HALF DEVIATION	

- 4 Rotate the DIAL to switch the setting between ON and OFF.

1 ON: Emits a beep when the partner station completes a transmission.

2 OFF: Does not emit a beep when the partner station completes a transmission.

Tip The default setting: 1 ON

STANDBY BEEP	
1	ON
2	OFF

- 5 Press and hold **(DISP SETUP)** for over one second.

Returns the display to the previously viewed screen.

Setup menu operations: 2 TX/RX

Using the half deviation function (7 HALF DEVIATION)

You can lower the degree of modulation by half.

- 1 Press and hold  for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select [2 TX/RX], then press .
- 3 Rotate the DIAL to select [7 HALF DEVIATION], then press .

SETUP MENU (TX/RX)	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-X
4 SIGNALING	8 CONFIG

SETUP MENU (TX/RX)		1 7
4 DIGITAL POPUP TIME		
5 LOCATION SERVICE		
6 STANDBY BEEP		
7 HALF DEVIATION		

- 4 Rotate the DIAL to select the desired setting.

1 ON: Reduces the FM modulation to half.

2 OFF: Uses the normal FM modulation

Tip The default setting: 2 OFF

HALF DEVIATION	
1 ON	
2 OFF	

- 5 Press and hold  for over one second.
Returns the display to the previously viewed screen.

Setup menu operations: 3 MEMORY

Setting the memory tag display (1 ALPHA TAG SIZE)

You can change the displays of the name and frequency registered to each channel.
For details, refer to the FTM-100DR/DE Operating Manual.

Setting the memory scan method (2 MEMORY SCAN TYPE)

You can scan either all the memory channels or only the specified memory channels.
For details, refer to the FTM-100DR/DE Operating Manual.

Setup menu operations: 4 SIGNALING

Setting the tone frequency (1 TONE SQL FREQ)

The tone frequency may be changed.

For details, see “Selecting the tone frequency” on page 20.

Setting the DCS code (2 DCS CODE)

You can set the DCS code.

For details, see “Selecting the DCS code” on page 23.

Setting the DTMF code transmission method (3 AUTO DIALER)

You can set method (Auto or Manual) to transmit the registered DTMF code.

For details, see “Transmitting the registered DTMF code” on page 31.

Setting the squelch type (4 SQL TYPE)

Select the squelch type.

For details, see “Communicating with specific stations” on page 20.

Registering the DTMF code (5 DTMF MEMORY)

The maximum of 16-digit DTMF codes can be registered for telephone numbers to make a call through the public telephone line from a phone patch.

For details, see “Registering the DTMF code” on page 30.

Calling only the specific stations (6 PAGER CODE)

Using the new pager code permits calls to specific stations only.

For details, see “Using the new pager function” on page 25.

Notification of calls from partner stations (8 BELL RINGER)

The beep may be set to alert you of a call from partner stations.

For details, see “Notification of incoming calls from partner stations using the bell function” on page 28.

Setting the squelch type separately for transmission and reception (9 SQL EXPANSION)

You can set the squelch type separately for transmission and reception.

- 1 Press and hold  for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select [4 SIGNALING], then press

.

SETUP MENU		LINE
1	DISPLAY	5 SCAN
2	TX/RX	6 GM
3	MEMORY	7 WIRES-X
4	SIGNALING	8 CONFIG

Setup menu operations: 4 SIGNALING

- 3 Rotate the DIAL to select **[9 SQL EXPANSION]**, then press **(DISP SETUP)**.

SETUP MENU (SIGNALING) 1 9
6 PAGER CODE
7 PRG REV TONE
8 BELL RINGER
9 SQL EXPANSION

- 4 Rotate the DIAL to select the desired setting.
 - 1 ON: Uses different squelch types for transmission and reception. For details, see “Other squelch functions” on page 29.
 - 2 OFF: Uses the same squelch for transmission and reception.

SQL EXPANSION
1 ON
2 OFF

Tip The default setting: 2 OFF

- 5 Press and hold **(DISP SETUP)** for over one second.
Sets the squelch type for transmission and reception and returns the display to the previously viewed screen.

Setting the weather alert operation (USA Version Only) (10 WX ALERT)

The reception of the weather alert can be disabled.

- 1 Press and hold **(DISP SETUP)** for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select **[4 SIGNALING]**, then press **(DISP SETUP)**.
- 3 Rotate the DIAL to select **[10 WX ALERT]**, then press **(DISP SETUP)**.
- 4 Rotate the DIAL to select the desired setting.
 - 1 ON: The weather alert will be received.
 - 2 OFF: The weather alert will not be received.

Tip The default setting: 2 OFF

- 5 Press and hold **(DISP SETUP)** for over one second.
Sets the weather alert operation and returns the display to the previously viewed screen.

Setup menu operations: 5 SCAN

Setting the signal reception method (1 DUAL WATCH STOP)

While operating in the DW (Dual Watch) mode, the receive operation after detecting signals on the home channel may be changed.

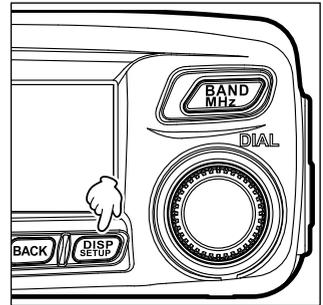
For details, see “Setting the dual receive restart setting” on page 14.

Setting the scanning direction (2 SCAN DIRECTION)

In the Setup menu, from [8 CONFIG] → [10 MIC PROGRAM KEY], assign [SCAN] to one of the [P1] to [P4] keys on the microphone to set whether to scan in the higher direction or lower direction of the frequencies or memory channels when scanning on that key.

For details on how to assign the function to [P1] to [P4], see “Setting the program keys on the microphone (10 MIC PROGRAM KEY)” on page 75.

- 1 Press and hold **DISP SETUP** for over 1 second.
The Setup menu appears.



- 2 Rotate the DIAL to select [5 SCAN], then press **DISP SETUP**.
- 3 Rotate the DIAL to select [2 SCAN DIRECTION], then press **DISP SETUP**.
- 4 Rotate the DIAL to set the desired setting.
 - 1 UP: Scans in the higher direction of the frequencies or memory channels.
 - 2 DOWN: Scans in the lower direction of the frequencies or memory channels.

Tip The default setting: 1 UP

- 5 Press and hold **DISP SETUP** for over 1 second.
Sets the scanning direction and returns the screen to the previously viewed screen.

SETUP MENU (1/2)	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-X
4 SIGNALING	8 CONFIG

SETUP MENU SCAN	
1 DUAL WATCH STOP	1
2 SCAN DIRECTION	
3 SCAN RESUME	
4 DUAL WATCH MODE	

SCAN DIRECTION	
1 UP	
2 DOWN	

Setup menu operations: 5 SCAN

Selecting the receiver operation performed after scanning stops (3 SCAN RESUME)

You can select the receiver operation to be performed after the scanning stops. For details, refer to the FTM-100DR/DE Operating Manual.

Setting the channel signal reception time when using the dual reception function (4 DUAL WATCH MODE)

Set the time to check the HOME channel when using the dual reception function. For details, see “Setting the channel signal reception time when using the dual reception function” on page 14.

Setup menu operations: 6 GM

The GM (group monitor) function enables the transceiver to automatically check whether the members on the same frequency are within communication range.

For details, refer to the separate GM Function Instruction Manual (download from Yaesu website).

Setup menu operations: 7 WIRES-X

The WIRES-X is a communication system to broaden the amateur radio communication linking worldwide using the Internet.

For details, refer to the separate WIRES-X Instruction Manual (download from Yaesu website).

Setup menu operations: 8 CONFIG

Setting the date and time (1 DATE & TIME ADJUST)

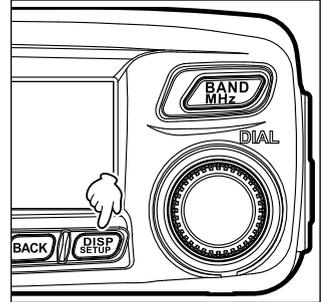
Set the date and time of the internal clock.

For details, refer to the FTM-100DR/DE Operating Manual.

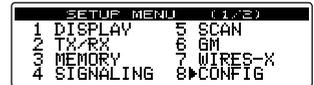
Setting the time display format (2 TIME FORMAT)

Select the internal clock time display: 24 hour display or 12 hour display.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.

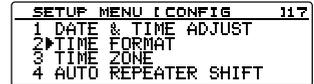


- 2 Rotate the DIAL to select **[8 CONFIG]**, then press **DISP SETUP**.



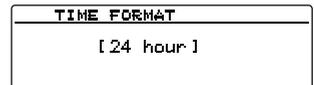
- 3 Rotate the DIAL to select **[2 TIME FORMAT]**, then press **DISP SETUP**.

Displays the time display setting screen.



- 4 Rotate the DIAL to select "24 hour" or "12 hour".

Tip The default setting: 24 hour



- 5 Press and hold **DISP SETUP** for over one second.

Set the time displayed on the screen and returns the display to the previously viewed screen.

Setting the time zone (3 TIME ZONE)

The internal clock can be synchronized with the Coordinated Universal Time via GPS.

The time zone can be set at 0.5 hour increments within the range of ± 14 hours.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.

- 2 Rotate the DIAL to select **[8 CONFIG]**, then press **DISP SETUP**.



Setup menu operations: 8 CONFIG

- 3 Rotate the DIAL to select [3 TIME ZONE], then press .

SETUP MENU (CONFIG) 117	
1	DATE & TIME ADJUST
2	TIME FORMAT
3	TIME ZONE
4	AUTO REPEATER SHIFT

- 4 Rotate the DIAL to select the time zone.
The time zone can be set at 0.5 hour increments within the range of ± 14 hours.

TIME ZONE
[UTC $\pm 0:00$]

Tip The default setting: UTC $\pm 0:00$

- 5 Press and hold  for over one second.
Sets the time zone and returns the display to the previously viewed screen.

Using the auto repeater shift function (4 AUTO REPEATER SHIFT)

When communicating using a repeater channel, the repeater offset frequency may be automatically set just by tuning the VFO to the repeater frequency. The automatic repeater shift function may be changed between ON and OFF.

- 1 Press and hold  for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select [8 CONFIG], then press .

SETUP MENU (CONFIG) 117	
1	DISPLAY 5 SCAN
2	TX/RX 6 GM
3	MEMORY 7 WIRES-X
4	SIGNALING 8 CONFIG

- 3 Rotate the DIAL to select [4 AUTO REPEATER SHIFT], then press .

SETUP MENU (CONFIG) 117	
1	DATE & TIME ADJUST
2	TIME FORMAT
3	TIME ZONE
4	AUTO REPEATER SHIFT

- 4 Rotate the DIAL to select the desired setting.
 - 1 ON: Activates the auto repeater shift function.
 - 2 OFF: Deactivates the auto repeater shift function.

AUTO REPEATER SHIFT	
1	ON
2	OFF

Tip The default setting: 1 ON

- 5 Press and hold  for over one second.
Applies the auto repeater shift function setting and returns the display to the previously viewed screen.

Setting the repeater shift direction (5 REPEATER SHIFT)

You can set the repeater shift direction.

- 1 Press and hold  for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select [8 CONFIG], then press .

SETUP MENU (CONFIG) 117	
1	DISPLAY 5 SCAN
2	TX/RX 6 GM
3	MEMORY 7 WIRES-X
4	SIGNALING 8 CONFIG

Setup menu operations: 8 CONFIG

- 3 Rotate the DIAL to select **[5 REPEATER SHIFT]**, then press **(DISP SETUP)**.

```
SETUP MENU [CONFIG 11.7
5 REPEATER SHIFT
6 REPEATER SHIFT FREQ
7 FM AM STEP
8 BEEP
```

- 4 Rotate the DIAL to select the shift direction.
 - 1 SIMPLEX: Does not shift.
 - 2 - REPEATER: Shifts in the lower frequency direction.
 - 3 + REPEATER: Shifts in the higher frequency direction.

```
REPEATER SHIFT
1 SIMPLEX
2 - REPEATER
3 + REPEATER
```

Tip The default setting: Differs depending on frequency

- 5 Press and hold **(DISP SETUP)** for over one second.
Sets the repeater shift direction and returns the display to the previously viewed screen.

Setting the repeater shift width (6 REPEATER SHIFT FREQ)

You can set the repeater shift width.

- 1 Press and hold **(DISP SETUP)** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select **[8 CONFIG]**, then press **(DISP SETUP)**.
- 3 Rotate the DIAL to select **[6 REPEATER SHIFT FREQ]**, then press **(DISP SETUP)**.

```
SETUP MENU [CONFIG 11.7
1 DISPLAY 5 SCAN
2 TX/RX 6 GM
3 MEMORY 7 WIRESS-X
4 SIGNALING 8 CONFIG
```

```
SETUP MENU [CONFIG 11.7
6 REPEATER SHIFT FREQ
7 FM AM STEP
8 BEEP
9 CLOCK TYPE
```

- 4 Rotate the DIAL to select the desired shift width.
The shift width can be set at 0.05MHz increments from 0.000MHz to 99.950MHz.

```
REPEATER SHIFT FREQ MHz
[ 0.000MHz ]
```

Tip The default setting: Differs depending on frequency

- 5 Press and hold **(DISP SETUP)** for over one second.
Sets the repeater shift width and returns the display to the previously viewed screen.

Setting the frequency step (7 FM AM STEP)

Using the knobs (DIAL/VOL) and keys, you can change the frequency step. For details, refer to the FTM-100DR/DE Operating Manual.

Setting the beep volume (8 BEEP)

You can change the volume of the operation beep sound. For details, see “Changing the beep volume” on page 5.

Setting the microcomputer clock shift (9 CLOCK TYPE)

You can set the transceiver microcomputer clock shift to change an internal spurious signal that may be interfering with a particular receiver frequency. Select "A" for the normal operation.

- 1 Press and hold  for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select [8 CONFIG], then press .

SETUP MENU (1:2)	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-X
4 SIGNALING	8▶CONFIG

- 3 Rotate the DIAL to select [9 CLOCK TYPE], then press .

SETUP MENU (CONFIG 1:7)	
9▶CLOCK TYPE	
10 MIC PROGRAM KEY	
11 RX COVERAGE	
12 UNIT	

- 4 Rotate the DIAL to select [1 A] or [2 B].

1 A: Automatically switches the clock shift operation between ON and OFF.

2 B: Always activates the clock shift operation.

CLOCK TYPE	
1▶A	
2 B	

Tip The default setting: 1 A

- 5 Press and hold  for over one second.

Sets the clock shift type and returns the display to the previously viewed screen.

Setting the program keys on the microphone (10 MIC PROGRAM KEY)

Assign functions to each program key ([P1] to [P4]) on the supplied microphone (MH-48).

- 1 Press and hold  for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select [8 CONFIG], then press .

SETUP MENU (1:2)	
1 DISPLAY	5 SCAN
2 TX/RX	6 GM
3 MEMORY	7 WIRES-X
4 SIGNALING	8▶CONFIG

- 3 Rotate the DIAL to select [10 MIC PROGRAM KEY], then press .

The microphone program key setting screen appears.

SETUP MENU (CONFIG 1:7)	
10▶MIC PROGRAM KEY	
11 RX COVERAGE	
12 UNIT	
13 APO	

- 4 Rotate the DIAL to select the program key ([P1] to [P4]) to which you want to assign a function, then press .

MIC PROGRAM KEY	
▶P1KEY [SQL OFF]	
P2KEY [HOME]	
P3KEY [D X]	
P4KEY [TX POWER]	

- 5 Rotate the DIAL to select the function you want to assign to the key, then press .

Setup menu operations: 8 CONFIG

- 6 Repeat the assigning operation for other keys.
Repeat the steps 4 to 5 to assign functions to other keys.

Function	Description
OFF	Deactivates the program key function
SQL TYPE	Changes the squelch type
SCAN	Starts/stops scanning (available while performing PMS)
HOME	Recalls the home channel
DCS CODE	Selects the DCS code
TONE FREQ	Selects the tone frequency
RPT SHIFT	Activates the repeater shift function
REVERSE	Reverse function
TX POWER	Sets the transmission power level
SQL OFF	Deactivates the squelch function
T-CALL	T-CALL function
VOICE	Announces the current frequency (available when the optional FVS-2 is attached)
D_X	Functions of the  key on the front panel
WX	Switches operation to the Weather Channel Bank
S-LIST	Displays the station list
MSG	Displays the message list
REPLY	Enters APRS reply message writing mode
M-EDIT	Enters APRS message writing mode

- 7 Press and hold  for over one second.

Assigns the selected function to the program key and returns the display to the previously viewed screen.

Tip The default setting: P1: SQL OFF (T.CALL: European version)
P2: HOME
P3: D_X
P4: TX POWER

Expanding the reception range (11 RX COVERAGE)

You can expand the reception range to receive the aircraft band frequencies (108 to 137 MHz) and the information band frequencies (174 to 400 MHz, 480 to 999.99 MHz) as well.

- 1 Press and hold  for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select [8 CONFIG], then press

.

SETUP MENU		LINE
1	DISPLAY	5 SCAN
2	TX/RX	6 GM
3	MEMORY	7 WIRES-X
4	SIGNALING	8 CONFIG

Setup menu operations: 8 CONFIG

- 3 Rotate the DIAL to select **[11 RX COVERAGE]**, then press **(DISP SETUP)**.

```
SETUP MENU [ CONFIG 11.7
11 RX COVERAGE
12 UNIT
13 APO
14 TOT
```

- 4 Rotate the DIAL to select the reception range.
1 NORMAL: Receives only 144 MHz and 430 MHz bands.
2 WIDE: Receives the aircraft band and information band as well.

```
RX COVERAGE
1 NORMAL
2 WIDE
```

Tip The default setting: 1 NORMAL

- 5 Press and hold **(DISP SETUP)** for over one second.
Sets the reception range and returns the display to the previously viewed screen.

Setting the unit displayed on the screen (12 UNIT)

You can change the unit used for displaying the altitude, distance and speed.

- 1 Press and hold **(DISP SETUP)** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select **[8 CONFIG]**, then press **(DISP SETUP)**.

```
SETUP MENU [ 11.2/
1 DISPLAY 5 SCAN
2 TX/RX 6 GM
3 MEMORY 7 WIRES-X
4 SIGNALING 8 CONFIG
```

- 3 Rotate the DIAL to select **[12 UNIT]**, then press **(DISP SETUP)**.

```
SETUP MENU [ CONFIG 11.7
12 UNIT
13 APO
14 TOT
15 Bluetooth PAIRING
```

- 4 Rotate the DIAL to select the desired unit.
1 METRIC: Uses the metric system.
2 INCH: Uses the imperial system (US).

```
UNIT
1 METRIC
2 INCH
```

Tip The default setting: Depends on the transceiver version

- 5 Press and hold **(DISP SETUP)** for over one second.
Sets the unit and returns the display to the previously viewed screen.

Turning off the transceiver automatically (13 APO)

You can set the transceiver so that it automatically turns off if you do not perform any operation for the designated time.

For details, see "Using the APO function" on page 33.

Limiting the continuous transmission time (14 TOT)

You can set the transceiver so that it automatically returns to receive mode after continuously transmitting for the designated time. (TOT...Time-Out-Timer)

For details, see "Using the TOT function" on page 34.

Setting the PIN code for the Bluetooth headset (15 Bluetooth PAIRING)

When a Bluetooth unit is installed in the transceiver, it may identify and be paired with the Bluetooth headset in use.

See “Identifying the Bluetooth headset” on page 91.

Setting the geodetic reference system (16 GPS DATUM)

You can set the geodetic reference system used for the GPS function positioning reference.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select **[8 CONFIG]**, then press **DISP SETUP**.
- 3 Rotate the DIAL to select **[16 GPS DATUM]**, then press **DISP SETUP**.
- 4 Rotate the DIAL to select the desired geodetic reference system.

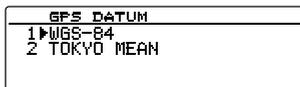
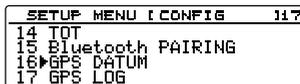
- 1 WGS-84: To use the global geodetic reference system for positioning. This is the standard used all around the world.
- 2 TOKYO MEAN: To use the Japanese geodetic reference system for positioning. Reduces the chance of inaccuracies while positioning in Japan (Tokyo).

Tip The default setting: 1 WGS-84

- 5 Press and hold **DISP SETUP** for over one second.
Sets the GPS function geodetic reference system and returns the display to the previously viewed screen.

Tip

Select “1 WGS-84” for the normal operation.



Setting the interval for saving the GPS location information (17 GPS LOG)

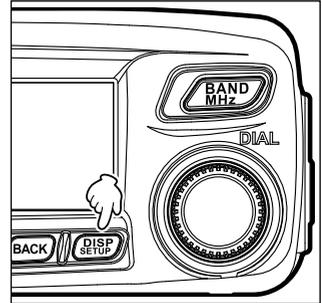
Set the interval for saving your location information onto the micro-SD memory card. For details, see “Saving location information (GPS Log Function)” on page 17.

Setup menu operations: 9 DATA

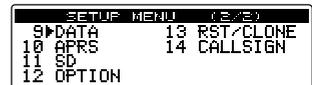
Setting the COM port (1 COM PORT SETTING)

Set the communication speed and functions when using the DATA jack on the rear panel of the transceiver as the COM port.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[9 DATA]**, then press **DISP SETUP**.



- 3 Rotate the DIAL to select **[1 COM PORT SETTING]**, then press **DISP SETUP**.

The detail settings screen appears.



- 4 Rotate the DIAL to select **[COM SPEED]**, then press **DISP SETUP**.



- 5 Rotate the DIAL to select the desired communication speed, then press **DISP SETUP**.

The setting switches as follows:

“4800 bps” → “9600 bps” → “19200 bps” → “38400 bps” → “57600 bps”

Tip The default setting: 9600 bps

- 6 Rotate the DIAL to select **[COM OUTPUT]**, then press **DISP SETUP**.



- 7 Rotate the DIAL to select the information you want to output.

“OFF” → “GPS OUT” → “PACKET” → “WAYPOINT”

OFF: Does not use the COM port output function (deactivate the function).

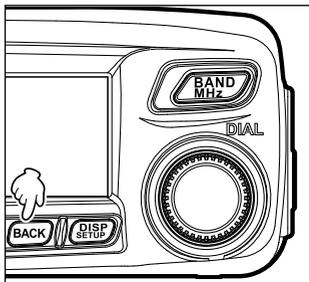
GPS OUT: Outputs the GPS data that the transceiver acquired.

PACKET: Outputs the AX.25 packet communication data received using the internal modem function.

WAYPOINT: Outputs the beacon location information of other stations you can acquire from the received APRS packet as WAYPOINT data.

Tip The default setting: OFF

8 Press **BACK**.



9 Rotate the DIAL to select **[WP FORMAT]**, then press

DISP SETUP.



10 Rotate the DIAL to select the number of digits of the APRS beacon station call sign information which is added to each data.

This setting is required when “WAYPOINT” is selected in step 8. The data is output in the NMEA-0183 \$GPWPL format.

The setting switches as follows:

“NMEA 9” → “NMEA 8” → “NMEA 7” → “NMEA 6”

NMEA 9: Displays the last 9 digits of the call sign (Example: JQ1YBG-14 is output as “JQ1YBG-14”).

NMEA 8: Displays the last 8 digits of the call sign (Example: JQ1YBG-14 is shortened to “Q1YBG-14”).

NMEA 7: Displays the last 7 digits of the call sign (Example: JQ1YBG-14 is shortened to “1YBG-14”).

NMEA 6: Displays the last 6 digits of the call sign (Example: JQ1YBG-14 is shortened to “YBG-14”).

Tip The default setting: NMEA 9

11 Press **BACK**.

12 Rotate the DIAL to select **[WP FILTER]**, then press

DISP SETUP.



13 Rotate the DIAL to select the beacon type you want to output.

This setting is required when “WAYPOINT” is selected in step 7.

The setting switches as follows:

“ALL” → “MOBILE” → “FREQUENCY” → “OBJECT/ITEM” → “DIGIPEATER” → “VoIP” → “WEATHER” → “YAESU” → “CALL RINGER” → “RNG RINGER”

ALL: Outputs all the received beacons.

MOBILE: Outputs only mobile station beacons.

FREQUENCY: Outputs only the beacons of stations with frequency information.

Setup menu operations: 9 DATA

OBJECT/ITEM: Outputs only the beacons of object stations or item stations.

DIGIPEATER: Outputs only the beacons of digital repeater stations.

VoIP: Outputs only beacons of VoIP stations such as WIRES.

WEATHER: Outputs only beacons of the weather station.

YAESU: Outputs only beacons of stations which are using Yaesu transceivers.

CALL RINGER: Outputs only the information of call sign ringer stations which are set from **[9 APRS RINGER (CALL)]** in the APRS Setup menu.

RNG RINGER: Outputs only the information of stations recognized as an approaching station by the **[8 APRS RINGER]** range ringer function in the APRS Setup menu.

Tip The default setting: ALL

- 1 Press and hold **(DISP SETUP)** for over one second.

Sets the COM port and returns the display to the previous operating screen.

Setting the APRS and data communication speed (2 DATA SPEED)

Set the communication speed of the APRS (internal modem) and data communications (when using the DATA jack on the rear panel of the transceiver).

- 1 Press and hold **(DISP SETUP)** for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select **[9 DATA]**, then press **(DISP SETUP)**.

SETUP MENU (NEXT)	
9 DATA	13 RST/CLONE
10 APRS	14 CALLSIGN
11 SD	
12 OPTION	

- 3 Rotate the DIAL to select **[2 DATA SPEED]**, then press **(DISP SETUP)**.

The detail settings screen appears.

SETUP MENU [DATA]	
1 COM PORT SETTING	
2 DATA SPEED	
3 DATA SQUELCH	

- 4 Rotate the DIAL to select **[APRS]**, then press **(DISP SETUP)**.

DATA SPEED	
▶APRS:[1200 bps]	
DATA:[1200 bps]	

- 5 Rotating the DIAL changes the speed between “1200 bps” and “9600 bps”.

1200 bps: Sets the speed to AFSK1200bps packet.

9600 bps: Sets the speed to GMSK9600bps packet.

Tip The default setting: 1200 bps

- 6 Press **(BACK)**.

- 7 Rotate the DIAL to select **[DATA]**, then press **(DISP SETUP)**.

Repeat step 5 to set the data communication speed.

Tip The default setting: 1200 bps

- 8 Press and hold **(DISP SETUP)** for over one second.

Sets the communication speed of APRS and data communication and returns the display to the previously viewed screen.

Setup menu operations: 9 DATA

Squelch detection and squelch jack output settings (3 DATA SQUELCH)

Set the squelch detection condition for APRS (internal modem) operations and squelch jack output condition for data communications (when using the DATA jack on the rear panel of the transceiver). See “Setting the packet communication operation” on page 51.

Setup menu operations: 10 APRS

The transceiver is equipped with the APRS function which enables receiving and transmitting GPS location data, information and messages in the APRS format. For details, refer to the APRS Instruction Manual (download from Yaesu website).

Setup menu operations: 11 SD

Copying the transceiver settings to a micro-SD memory card (1 BACKUP)

Using a micro-SD memory card, the information registered to the memory channels, and the Setup menu settings may be recorded and transferred to other FTM-100DR/DE transceivers.

The settings saved on a micro-SD memory card may be imported to your transceiver. For details, see “Copying the radio data to another transceiver” on page 43.

Initializing a micro-SD memory card (2 FORMAT)

When using a new micro-SD memory card, initialize the memory card. For details, see “Initializing micro-SD memory cards” on page 3.

Setup menu operations: 12 OPTION

Setting the Bluetooth headset operations (1 Bluetooth)

You can wirelessly receive and transmit voice messages using the Bluetooth headset by installing the Bluetooth unit onto the transceiver.

For details, see “Setting the Bluetooth headset operations” on page 89.

Setting the voice memory operations (2 VOICE MEMORY)

By installing the voice guide unit onto the transceiver, you can record and play received audio, and also record and play audio from the microphone.

For details, see “Using the voice memory” on page 96.

Setup menu operations: 13 RST/CLONE

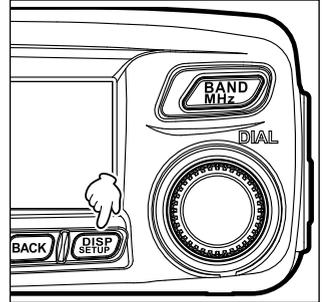
Resetting the transceiver settings (1 FACTORY RESET)

You can restore the transceiver configuration and memory registration settings to the default state. For details, refer to the FTM-100DR/DE Operating Manual.

Presetting (2 PRESET)

You can preset one desired setting value such as a frequency or memory channel.

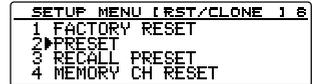
- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[13 RST/CLONE]**, then press **DISP SETUP**.



- 3 Rotate the DIAL to select **[2 PRESET]**, then press **DISP SETUP**.
The preset confirmation screen appears.



- 4 Rotate the DIAL to select **[OK?]**, then press **DISP SETUP**.
Presets the desired setting value.
To cancel the preset operation, select **[Cancel]**, then press **DISP SETUP**.



- 5 Press and hold **DISP SETUP** for over one second.
Returns the display to the previous operating screen.

Recalling the preset setting (3 RECALL PRESET)

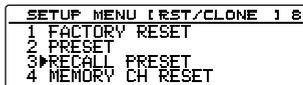
You can recall the preset setting from the Setup menu.

- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select **[13 RST/CLONE]**, then press **DISP SETUP**.



- 3 Rotate the DIAL to select **[3 RECALL PRESET]**, then press **(DISP SETUP)**.

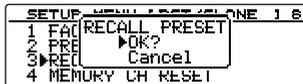
The confirmation screen appears.



- 4 Rotate the DIAL to select **[OK?]**, and then press **(DISP SETUP)**.

Recalls the preset setting and returns the display to the previously viewed screen.

To cancel the Setup menu without any change, select **[Cancel]**, then press **(DISP SETUP)**.



- 5 Press and hold **(DISP SETUP)** for over one second.

Returns the display to the previously viewed screen.

Deleting the registered data from the memory channels (4 MEMORY CH RESET)

Deletes the registered data from the memory channels.

- 1 Press and hold **(DISP SETUP)** for over one second.

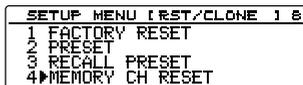
The Setup menu appears.

- 2 Rotate the DIAL to select **[13 RST/CLONE]**, then press **(DISP SETUP)**.

The menu list appears.



- 3 Rotate the DIAL to select **[4 MEMORY CH RESET]**, then press **(DISP SETUP)**.



- 4 Rotate the DIAL to select **[OK?]**, and then press **(DISP SETUP)**.

Tip To cancel resetting, select **[Cancel]**.



Deletes the registered data from the memory channels and returns the screen to the previously viewed screen.

Sorting the memory channels (5 MEMORY CH SORT)

Sort the memory channels where data registered.

- 1 Press and hold **(DISP SETUP)** for over one second.

The Setup menu appears.

- 2 Rotate the DIAL to select **[13 RST/CLONE]**, then press **(DISP SETUP)**.

The menu list appears.



- 3 Rotate the DIAL to select **[5 MEMORY CH SORT]**, then press **(DISP SETUP)**.



- 4 Rotate the DIAL to select [OK?], and then press



Tip To cancel sorting, select [Cancel].



Sorts the memory channels in ascending order of frequency.
The transceiver restarts.

Resetting the APRS setting (6 APRS RESET)

Reset the APRS setting.

- 1 Press and hold for over one second.
The Setup menu appears.
- 2 Rotate the DIAL to select [13 RST/CLONE], then press .
The menu list appears.
- 3 Rotate the DIAL to select [6 APRS RESET], then press .



- 4 Rotate the DIAL to select [OK?], and then press



Tip To cancel resetting, select [Cancel].



Resets the APRS setting and returns the screen to the previously viewed screen.

Copying the saved data (7 CLONE)

All the data saved on the transceiver directory may be copied (Cloned) to other FTM-100DR/DE transceivers.

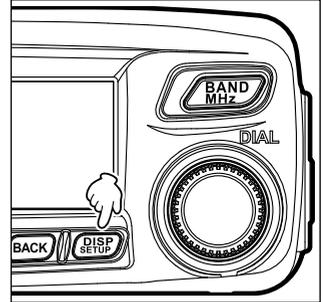
For details, see “Using the clone function” on page 45.

Setup menu operations: 14 CALLSIGN

Changing the call sign (1 MY CALLSIGN (DIGITAL))

The call sign ID registered to the transceiver may be changed using the set menu.

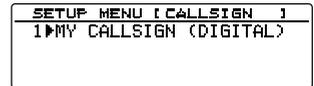
- 1 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.



- 2 Rotate the DIAL to select **[14 CALLSIGN]**, then press **DISP SETUP**.



- 3 Press **DISP SETUP**.
The currently registered call sign ID is shown.



- 4 Press **DISP SETUP**.
The first letter of the call sign ID blinks.



- 5 Rotate the DIAL to select the desired letter, then press **GM** (**→** appears on the upper row).

The cursor moves to the right.

- Tips**
- Up to 10 alphanumeric characters including hyphen and slash may be input.
 - To switch the input screen (uppercase letters, lowercase letters, symbols and numbers), press **TXPO** (**A/E** appears on the upper side).
 - To delete the letter you have just input, press **V/M MW** (**CLR** appears on the upper side).
 - To move the cursor to the left, press **←** (**←** appears on the upper side).
 - To delete the letter you have just entered and move the cursor to the left, press **SOL VOICE** (**←X** appears on the upper row).

- 6 Repeat step 5 to complete to input the new call sign.

- 7 Press **DISP SETUP**.

Displays the new call sign.

- 8 Press and hold **DISP SETUP** for over one second.

Sets the call sign and returns the display to the previously viewed operating screen.

Using the Bluetooth headset

You can operate receive and transmit using the optional wireless Bluetooth unit “BU-2” and Bluetooth headset “BH-2A”.

Activating the VOX (Voice Operated Xmit) function enables hands-free communications

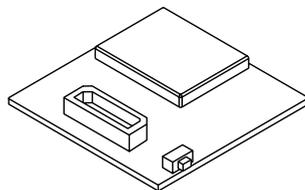
Tip

Bluetooth headsets other than the optional Yaesu headset may also be used, however not all the functions are guaranteed to work properly.

Mounting the Bluetooth unit “BU-2”

● What to prepare

- Bluetooth unit “BU-2” (optional)
- Phillips-head screwdriver

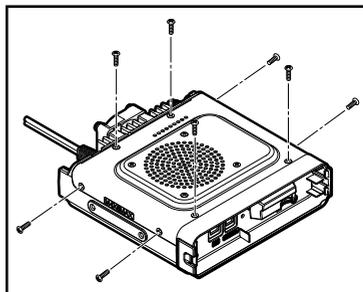


● Mounting procedure

Cautions

- Avoid touching the IC components with your hands as the semiconductors may be damaged by static electricity.
- Note that installation of optional items may incur additional labor charges.

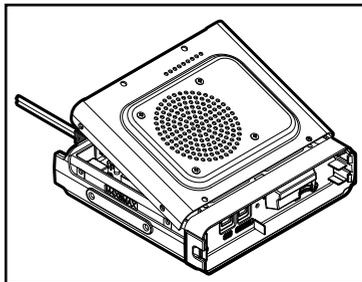
- 1 Turn off the transceiver.
- 2 Turn off the external device.
- 3 Disconnect the control cable, microphone cable and DC power cable.
- 4 Remove the 8 screws in total from the transceiver (4 screws from the top panel and 2 screws from the right and left sides).



Using the Bluetooth headset

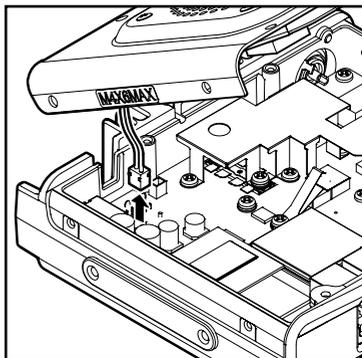
- 5 Gently lift up the top cover of the transceiver from the rear side.

Caution Do not abruptly open the top cover. Doing so may break the cable connecting the internal speaker to the main board.

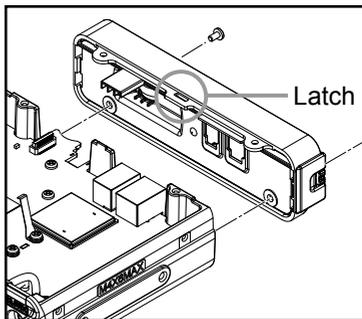


- 6 Unplug the speaker cable from the socket on the main board to completely remove the top cover from the transceiver.

Caution When unplugging the speaker cable, do not pull the cable. Be sure to hold the connector part.

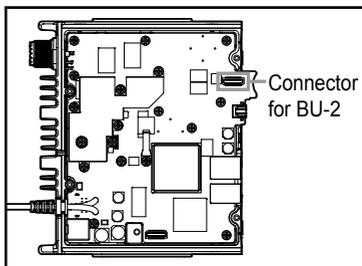


- 7 Remove the 2 screws from the front panel.
8 Release the latch at the center of the cover to remove the front cover.



- 9 Refer to the illustration on the right to plug BU-2 to the connector.

Caution Check the direction of the connector and plug BU-2 all the way into the connector.



- 10 Attach the front cover using the 2 screws.

Using the Bluetooth headset

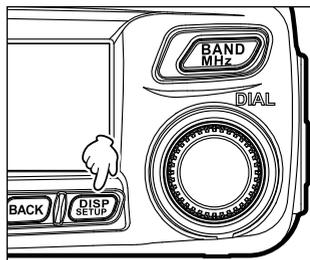
- 11 Reconnect the speaker cable extending from the top cover to the socket on the main board.
- 12 Attach covers using the 8 screws.

Setting the Bluetooth headset operations

The following settings may be changed for convenient wireless headset operation according to your personnel preferences.

- Listening to receive audio using the headset only, or listening with both the headset and the transceiver speaker
- Saving the headset battery power
- Switching between transmit and receive with [PTT], or automatically switching to transmit when you begin speaking [**VOX**]
- The [**VOX**] gain may be set to automatically switch to transmit upon detecting voices including low volume sounds

- 1 Turn on the transceiver
- 2 Press and hold  for over one second.
The Setup menu appears.



- 3 Rotate the DIAL to select [**12 OPTION**], then press .



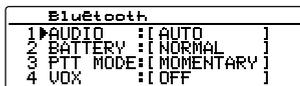
- 4 Rotate the DIAL to select [**1 Bluetooth**], then press .



Tip This option can be selected only when BU-2 is installed into the transceiver.

The settings screen appears.

- 5 Rotate the DIAL to select [**1 AUDIO**], then press .



- 6 Rotate the DIAL to select "AUTO" or "FIX".

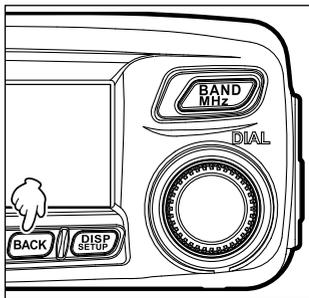
"AUTO": When a Bluetooth headset is connected, the audio from the radio speaker is muted and sound is heard only from the headset.

"FIX": Audio can be heard from both the Bluetooth headset and the speaker of the transceiver.

Tip The default setting: AUTO

Using the Bluetooth headset

- 7 Press **BACK**.



- 8 Rotate the DIAL to select **[2 BATTERY]**, then press **DISP SETUP**.

```
Bluetooth
1 AUDIO  : [ AUTO ]
2 BATTERY: [ NORMAL ]
3 PTT MODE: [ MOMENTARY ]
4 VOX    : [ OFF ]
```

- 9 Rotate the DIAL to select “NORMAL” or “SAVE”.

“NORMAL”: Deactivates the battery saving function for the Bluetooth headset.

“SAVE”: Activates the battery saving function for the Bluetooth headset.

Tip The default setting: NORMAL

- 10 Press **BACK**.

- 11 Rotate the DIAL to select **[3 PTT MODE]**, then press **DISP SETUP**.

```
Bluetooth
1 AUDIO  : [ AUTO ]
2 BATTERY: [ NORMAL ]
3 PTT MODE: [ MOMENTARY ]
4 VOX    : [ OFF ]
```

- 12 Rotate the DIAL to select “MOMENTARY” or “TOGGLE”.

“MOMENTARY”: Remains in transmit mode while pressing and holding [PTT] on the headset.

“TOGGLE”: Pressing [PTT] on the headset each time switches between transmit and receive.

Tip The default setting: MOMENTARY

- 13 Press **BACK**.

- 14 Rotate the DIAL to select **[4 VOX]**, then press **DISP SETUP**.

```
Bluetooth
1 AUDIO  : [ AUTO ]
2 BATTERY: [ NORMAL ]
3 PTT MODE: [ MOMENTARY ]
4 VOX    : [ OFF ]
```

- 15 Rotate the DIAL to select “OFF” or “ON”.

“OFF”: Transmit and receive can be switched by pressing [PTT].

“ON”: Transmit and receive are switched when audio is detected.

Tip The default setting: OFF

- 16 Press **BACK**.

When **[VOX]** is set to “ON”, the **[5 GAIN]** setting will be shown.

- 17 Rotate the DIAL to select **[GAIN]**, then press **DISP SETUP**.
Displays the setting options.

```
Bluetooth
2 BATTERY: [ NORMAL ]
3 PTT MODE: [ MOMENTARY ]
4 VOX     : [ ON ]
5 GAIN    : [ HIGH ]
```

Using the Bluetooth headset

18 Rotate the DIAL to select “HIGH” or “LOW”.

“HIGH”: Increases the Bluetooth headset VOX sensitivity to detect low volume sounds.

“LOW”: Decrease the Bluetooth headset VOX sensitivity so that low volume sounds are not detected.

19 Press **BACK**.

20 Press and hold **DISP SETUP** for over one second.

Sets the Bluetooth headset operation and returns the display to the previously viewed screen.

Identifying the Bluetooth headset

An individual identification code known as a “PIN code” is assigned to Bluetooth devices such as a headset. When connecting Bluetooth devices for the first time, registration is required. This process is called pairing. The PIN codes are used for registering each other. Through pairing, interference and improper interception can be prevented. When using the Bluetooth headset together with the transceiver for the first time, pairing is also required.

Tip

The PIN code for the Yaesu Bluetooth headset BH-2A is “6111”. When using a Bluetooth headset manufactured by other companies, check the PIN code in the operating manual of the product.

Example: When pairing with the optional Bluetooth headset BH-2A

Tip

For details on how to pair with a headset other than BH-2A, refer to the operation manual of the connection product.

1 Turn off BH-2A.

2 Press and hold **DISP SETUP** on the transceiver for over one second.

The Setup menu appears

3 Rotate the DIAL to select **[8 CONFIG]**, then press

DISP SETUP.

The menu list screen appears.

SETUP MENU		11.7
1	DISPLAY	5 SCAM
2	TX/RX	6 GM
3	MEMORY	7 WIRES-X
4	SIGNALING	8 CONFIG

4 Rotate the DIAL to select **[15 Bluetooth PAIRING]**,

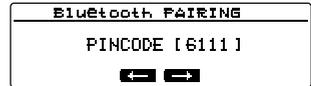
then press **DISP SETUP**.

SETUP MENU [CONFIG		11.7
12	UNIT	
13	APD	
14	TOT	
15	Bluetooth PAIRING	

Using the Bluetooth headset

The PIN code input screen appears.

- Tips**
- In the default setting, "6111" appears.
 - When using a headset other than BH-2A, input the device's 4-digit PIN code here. Rotate the DIAL to move the cursor to overwrite letters.
 - Press the  key to move the cursor to the left ( appears on the upper side).
 - Press the  key to move the cursor to the right ( appears on the upper side).



- 5** Press and hold the BH-2A power switch for over 5 seconds.
The indicator on BH-2A blinks alternately between red and blue.

- 6** Press .

"Pairing..." appears.

When pairing successfully completes, "Completed" appears and the display returns to the menu list screen.

The indicator on BH-2A blinks blue.

Caution If "ERROR" appears, repeat the operation from the beginning.

- 7** Press and hold  for over one second.

Returns the display to the previous screen.

Displays the  icon at the top right of the screen.

Tips

- BU-2 can be paired with up to 8 other devices. When using 2 or more headsets such as a spare one or a personal one, set up the respective PIN codes and pair with each device in advance. However, 2 headsets cannot be used at the same time.
- When pairing is conducted successfully with the 9th device, the oldest device pairing information will be deleted.

Using the Bluetooth headset

Once paired, the headset can be used simply by turning on the power.

Tips

- The communication distance between the headset and the transceiver is about 10 m or less.
- The  icon does not appear when the headset is too far from the transceiver and outside the sphere of communication.

(1) When not using the VOX function

- 1 Turn on the headset.
The receive audio will be heard from the headset speaker.
- 2 Briefly press [PTT] on the headset.
The transceiver goes into transmit mode.
- 3 Briefly press [PTT] on the headset again.
The transceiver goes into receive mode.

(2) When using the VOX function

- 1 Turn on the headset.
The receive audio will be heard from the headset speaker.
- 2 Speak into the headset microphone.
The transceiver goes into transmit mode.
Tip When you stop talking, the transceiver automatically returns to receive mode.

Recording and listening to received audio

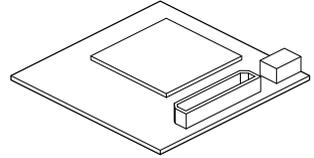
You can record and playback the receiver audio using the optional voice guide unit “FVS-2”.

By activating the announcement function, you can also hear the synthesized voice announcing the frequency of the operating band.

Mounting the voice guide unit “FVS-2”

● What to prepare

- Voice guide unit “FVS-2” (optional)
- Phillips-head screwdriver

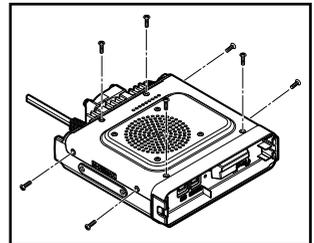


● Mounting procedure

Cautions

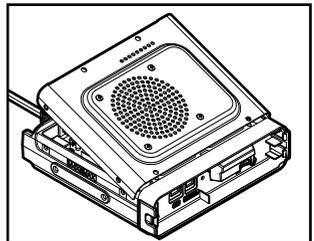
- Avoid touching the IC components with your hands as the semiconductors may be damaged by static electricity.
- Note that installation of optional items may incur additional labor charges.

- 1 Turn off the transceiver.
- 2 Turn off the external device.
- 3 Disconnect the control cable, microphone cable and DC power cable.
- 4 Remove the 8 screws in total from the transceiver (4 screws from the top panel and 2 screws from the right and left sides).



- 5 Gently lift up the top cover of the transceiver from the rear edge.

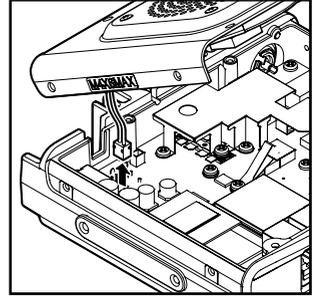
Caution Do not abruptly open the top cover. Doing so may break the cable connecting the internal speaker to the main board.



Recording and listening to received audio

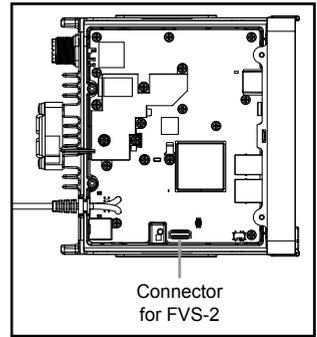
- 6** Unplug the speaker cable from the socket on the main board to completely remove the top cover from the transceiver.

Caution When unplugging the speaker cable, do not pull the cable. Be sure to hold the connector part.



- 7** Refer to the illustration on the right and carefully plug the FVS-2 into the connector.

Caution Check the direction of the connector and press the FVS-2 all the way into the connector.



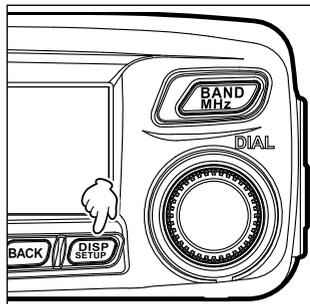
- 8** Reconnect the speaker cable plug extending between from the top cover to the socket on the main board.
- 9** Attach the covers using the 8 screws.

Using the voice memory

The voice memory is a function for recording the received audio. The audio is saved onto the FVS-2 module that is mounted to the transceiver. The saved audio can be replayed and erased later on the transceiver.

Setting the voice memory operation

- 1 Turn on the transceiver.
- 2 Press and hold **DISP SETUP** for over one second.
The Setup menu appears.
- 3 Rotate the DIAL to select **[12 OPTION]**, then press **DISP SETUP**.
- 4 Rotate the DIAL to select **[2 VOICE MEMORY]**, then press **DISP SETUP**.
The detail settings screen appears.
- 5 Rotate the DIAL to select **[1 PLAY/REC]**, then press **DISP SETUP**.
- 6 Rotate the DIAL to select the recording time.
“FREE 5min”: Records 8 sections for 5 minutes in total.
“LAST 30sec”: Records the last 30 seconds.
Tip The default setting: FREE 5min
- 7 Press and hold **DISP SETUP** for over one second.
Returns the display to the previously viewed screen.



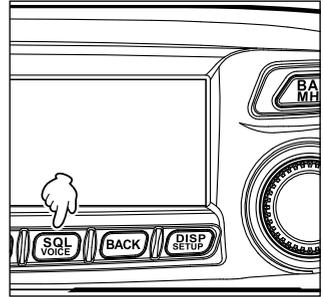
SETUP MENU (V.2.3)	
9 DATA	13 EXT/CLONE
10 APRS	14 CALLSIGN
11 SD	
12 OPTION	

SETUP MENU [OPTION]	
1 Bluetooth	
2 VOICE MEMORY	

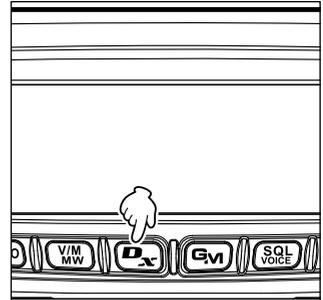
VOICE MEMORY	
1 PLAY/REC: [FREE 5min]	
2 ANNOUNCE: [AUTO]	
3 LANGUAGE: [JAPANESE]	
4 VOLUME : [HIGH]	

Recording the received audio

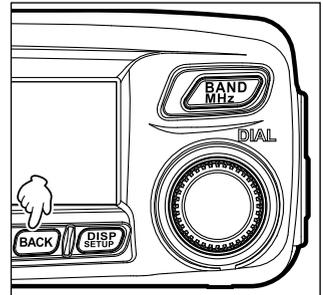
- 1 Press and hold  for over one second.
The menu appears in the bottom area of the screen.



- 2 Press  ( appears on the display).
Recording begins.
Tip The recording time you set from [12 OPTION] → [2 VOICE MEMORY] in the Setup menu appears below [REC].



- 3 Press  ( appears on the display).
Recording stops.
Also [TRACK], and the track number of the recording are shown on the display.

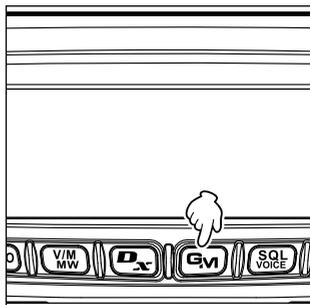


- 4 Press and hold  for over one second.
Returns the display to the previously viewed screen.

Playing the recorded audio

- 1 Press and hold **(SQL VOICE)** for over one second.
The menu appears in the bottom area of the screen.
- 2 Press **(GM)** (**(TRK)** appears on the display) to select the desired track number.

- Tips**
- If there are two or more recordings, pressing each time switches the track number: "ALL", "1", "2", ...
 - If "ALL" is selected, all of the recorded tracks will be played back in order.



- 3 Press and hold **(SQL VOICE)** for over one second (**(PLY)** appears on the display).

Playback begins

After playing to the end of the selected track, playback stops automatically.

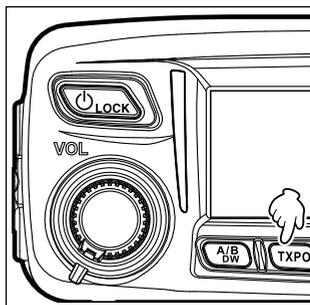
To stop playback midway, press **(BACK)** (**(STOP)** appears on the display).



- 4 Press and hold **(SQL VOICE)** for over one second.
Returns the display to the previously viewed screen.

Erasing the recorded audio

- 1 Press and hold **(SQL VOICE)** for over one second.
The menu appears at the bottom area of the screen.
- 2 Press **(TXPO)** (**(E)** appears on the display).
The confirmation screen appears.



- 3 Rotate the DIAL to select **[OK?]**, then press .
The recordings are erased.



Caution This operation erases all the recorded audio. Even when there are 2 or more tracks, individual tracks cannot be erased.

After erasing completes, “ALL” appears for **[TRCK]**.

- 4 Press and hold  for over one second.
Returns the display to the previously viewed screen.

Activating the frequency voice announcement

Setting the announcement function operation

The following settings may be customized:

- Setting how an announcement is initiated.
- Selecting the language
- Setting the announcement volume level
- Muting the receive audio while announcements are being made

- 1 Press and hold  for over one second.
The Setup menu appears.

- 2 Rotate the DIAL to select **[12 OPTION]**, then press .



- 3 Rotate the DIAL to select **[2 VOICE MEMORY]**, then press .



The detail setting screen appears.

- 4 Rotate the DIAL to select **[2 ANNOUNCE]**, then press .



- 5 Rotate the DIAL to select the desired setting.

“AUTO”: Makes announcements when pressing and holding  for over one second or when changing the band.

“OFF”: Deactivate the announcement function.

“MANUAL”: Makes announcements when pressing and holding  for over one second.

Tip The default setting: AUTO

- 6 Press .

- 7 Rotate the DIAL to select **[3 LANGUAGE]**, then press .



- 8 Rotate the DIAL to select the desired language.

Rotating the DIAL each time switches the language between “JAPANESE” and “ENGLISH”.

Tip The default setting: ENGLISH

- 9 Press **BACK**.

- 10 Rotate the DIAL to select **[4 VOLUME]**, then press

DISP
SETUP.

VOICE MEMORY	
1	PLAY/REC:[FREE 5min]
2	ANNOUNCE:[AUTO]
3	LANGUAGE:[JAPANESE]
4	VOLUME : [HIGH]

- 11 Rotate the DIAL to select the desired announcement volume level.

Rotating the DIAL each time changes the setting in the following order: “HIGH” → “MID” → “LOW”.

Tip The default setting: HIGH

- 12 Rotate the DIAL to select **[5 RX MUTE]**, then press

DISP
SETUP.

VOICE MEMORY	
2	ANNOUNCE:[AUTO]
3	LANGUAGE:[JAPANESE]
4	VOLUME : [HIGH]
5	RX MUTE : [ON]

- 13 Rotate the DIAL to select the desired mute function setting.

Rotating the DIAL each time switches the setting between on and off.

“ON”: Mutes the reception sound when speaking or playing recorded voice.

“OFF”: Does not mute the reception sound even when speaking or playing recorded voice.

- 14 Press and hold **DISP**
SETUP for over one second.

Sets the announcement function operation and returns the display to the previously viewed screen

Activating to the frequency announcement

(1) When the function operation is set to “AUTO”

Automatically makes an announcement in the following situations:

- When switching the mode between memory mode and VFO mode
- When changing the operating band

Tip

You can also adjust the volume level by rotating the DIAL.

(2) When the function operation is set to “MANUAL”

- 1 Press and hold **SQL**
VOICE for over one second.

Announces the operating band frequency.

Tip

You can also adjust the volume level by rotating the DIAL.

Maintenance

Care and maintenance

Turn the power OFF before wiping away any dust and stains on the transceiver with a dry soft cloth. For stubborn stains, slightly moisten a soft cloth and wring it out before using it to wipe away the stains.

Caution Never use washing detergents and organic solvents (thinner, benzene, etc.). Doing so may result in paint flaking or damage to the transceiver finish.

Replacing the fuse

When the fuse of the DC power supply cable blows and the transceiver becomes inoperable, correct the cause of the problem, and then replace the fuse with a new one of the correct (15 Amp) rating.

Caution When replacing the fuse, be sure to disconnect the power supply cable from the transceiver and from the external DC power supply.

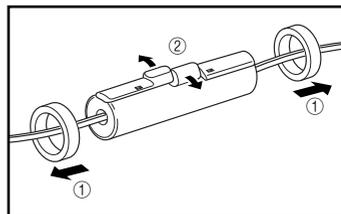
● Replacing the fuse of the DC power supply cable

- 1 Prepare a new fuse.

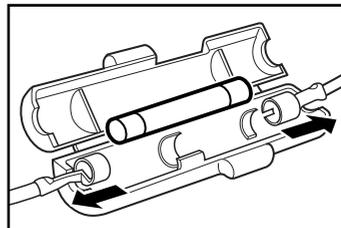
Use a fuse with a rating of 15A.

Caution Never attempt to use a fuse that is not of the specified rating

- 2 Open the fuse holder as shown in the diagram on the right.

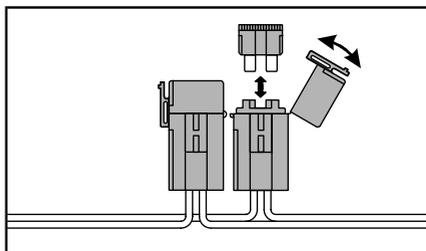


- 3 Remove the blown fuse.



- 4 Attach the new fuse.

- 5 Close the fuse holder.



European version

Troubleshooting

Caution

Check the following before requesting repair services.

There is no power

- Is the external power supply connected correctly?
Connect the black wire to the negative (-) terminal and the red wire to the positive (+) terminal.
- Is the voltage and current capacity of the external power supply sufficient?
Check the voltage and current capacity of the external power supply.
Voltage: 13.8 V
Current capacity: 20 A or higher
- Is the fuse blown?
Replace the fuse.

There is no sound

- Is the squelch level or setting too high?
Adjust the squelch level when receiving weak signals.
- Is the volume low?
Increase the volume by turning the VOL knob in the clockwise direction.
- Is the tone squelch or DCS set to on?
When the tone squelch or DCS is turned on, no sound will be heard until signals containing the set tone frequency or DCS code corresponding to the set code are received.
- Is the external speaker connected?
Properly connect a speaker with an impedance of 4 to 16 Ω .
- Is the Bluetooth headset in use?
Disable the use of the headset or use the Setup menu to allow sound to come from both the headset and the internal speaker.

There is no transmission

- Is the PTT button pressed properly?
- Is the microphone connected correctly?
Plug the connector all the way into the MIC jack.
- Is the transmit frequency set to the amateur band?
Transmission outside the amateur band is not possible.
- Is the antenna or co-axial cable broken?
Replace the antenna or co-axial cable.
- Is the voltage of the external power supply normal?
When the voltage of the power supply drops during transmission, the transceiver may not run at full performance.
Use a stable DC power supply with a direct current of 13.8 V and a current capacity of 20 A.

The keys or knobs do not operate

- Is the lock function activated?
Cancel the lock by briefly pressing the Power/LOCK key.

About internal spurious signals

Certain frequency combinations of signals received simultaneously, may have an effect such as internal beats due to the high frequency of the internal oscillator. However, this is not a malfunction (refer to the calculation formulas below: n is any integer). Depending on the combination of the frequencies received simultaneously, there may also be fluctuations in the receiver sensitivity.

- Reception frequency = 12.288 MHz x n times
- Reception frequency = 2.4576 MHz x n times
- Reception frequency = 11.1 MHz x n times
- Reception frequency = 15.6 MHz x n times
- Reception frequency = 6.1444 MHz x n times
- Reception frequency = 18.432 MHz x n times



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