

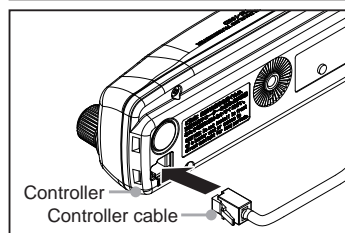
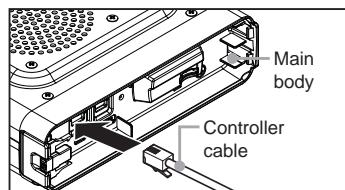
## Connecting the Radio

### Connecting the controller to the main body

#### Caution

Make sure the power supply is switched OFF before connecting the cable between the controller and the main body.

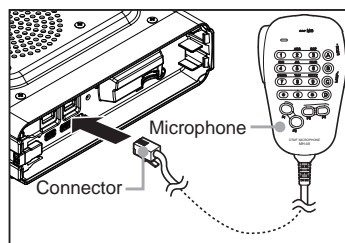
- 1 Plug the connector of the controller cable into the [CONTROL] jack at the front of the main body until a click sound is heard
- 2 Plug the other connector of the controller cable into the [CONTROL] jack at the back of the controller until a click sound is heard



### Connecting the microphone

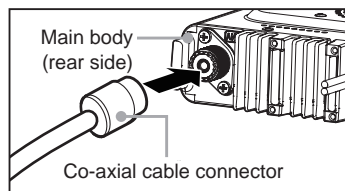
- 1 Plug the microphone connector into the [MIC] jack at the front of the main body until a click sound is heard

- Tips**
- To remove the microphone, pull the connector out while pressing the latch.
  - Using the optional microphone extension kit "MEK-2", a microphone with a 8-pin connector can be used. A microphone extension cable (about 3 m long) is also included in MEK-2. Use it to install the microphone in locations which cannot be reached by the attached microphone cable.



### Connecting the antenna

- 1 Attach the antenna co-axial cable to the [ANT] terminal at the back of the main body and tighten the connector



## Connecting the Radio

### Connecting the external power supply equipment

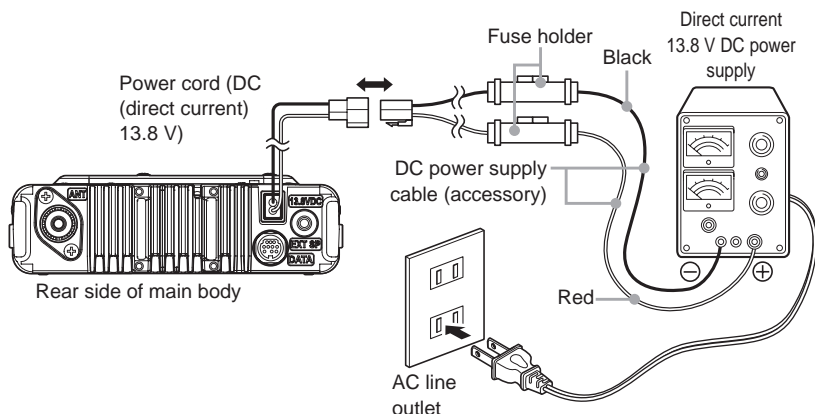
When using this radio as a fixed station, use an external 12 V DC power source.

#### Cautions

- Use an external power source capable of supplying DC 13.8 V, a current capacity of 20 A or more (FTM-100DR).
- Make sure to switch OFF the power of the external power source before connecting.

- 1 Connect the red wire (+) of the provided DC power supply cable to the positive (+) terminal of the external power source, and the black wire (-) to the negative (-) terminal of the external power source
- 2 Connect the DC power supply cable to the connector of the power cord of the main body

Press the plug into the connector until a click sound is heard.



## Setting Up the micro-SD Card

The following operations can be carried out by using a micro-SD card in this radio.

- Backing up the information and settings of the radio
- Saving the information in the memory channels
- Saving the settings in the set-up mode
- Saving the GPS log data
- Saving data that has been downloaded using the GM function and WIRES-X function
- Exchanging the saved data among multiple radios

### Micro-SD cards that can be used

2 GB, 4 GB, 8 GB, 16 GB and 32 GB micro-SDHC cards can be used in this radio.

#### 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.

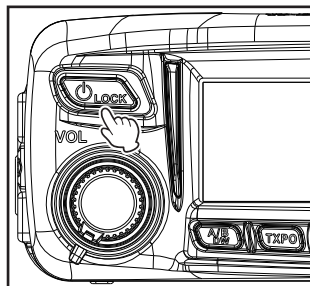
### Things to note when using micro-SD cards

- Do not bend the micro-SD card or place heavy objects on top of it.
- Do not touch the terminal face of the micro-SD card with your bare hands.
- Micro-SD cards that are initialized in other devices may not record normally when used in this device. Re-initialize the micro-SD card in this radio when using a card that has been initialized in another device. (Refer to Page xx on how to initialize the memory card)
- Do not pull the micro-SD card out, or switch the power to the radio OFF when reading or writing data to the card.
- Do not insert anything other than a micro-SD card into the micro-SD card slot of the radio.
- Do not pull out or insert the micro-SD card with unreasonable force.
- When a single micro-SD card is used for a long period of time, writing and deletion of data may become disabled. Use a new micro-SD 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 card.

## Setting Up the micro-SD Card

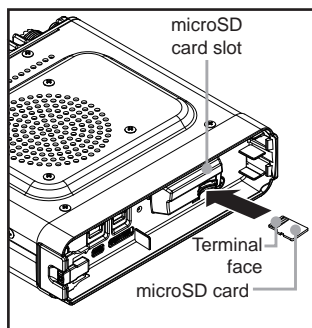
### Installing the micro-SD card


- 1 Press  for 2 seconds or longer to switch off the power to the main body



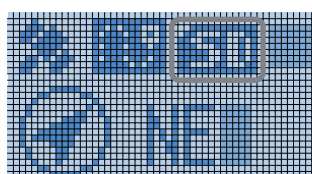
- 2 Insert the micro-SD card into the micro-SD card slot, with the terminal face on top, until a click sound is heard

- Cautions**
- Insert the micro-SD card in the correct direction.
  - Do not touch the terminal of the micro-SD card with your hands.




After the power is switched on, the “” icon will be displayed at the top right of the display.

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



### Removing the micro-SD card

- 1 Press  for 2 seconds or longer to switch off the power to the main body
- 2 Push in on the microSD card  
A click sound will be heard and the micro-SD card will be pushed outward.
- 3 Pull the micro-SD card from the micro-SD card slot

## Setting Up the micro-SD Card

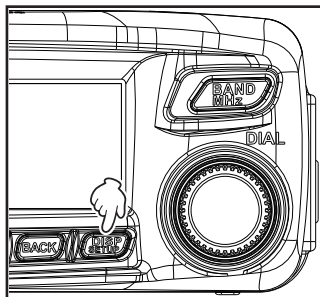
### Initializing the micro-SD card

When using a new micro-SD card, initialize the micro-SD card according to the following procedure.

#### Caution

Upon initialization, all the data recorded in the micro-SD card will be erased. Check the contents of the micro-SD card before initialization.

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



- 2 Turn the DIAL to select **[11 SD]**, then press **DISP/SETUP**  
The menu list will be displayed.



- 3 Turn the DIAL to select **[4 FORMAT]**, then press **DISP/SETUP**  
The format confirmation screen will be displayed.



- 4 Turn the DIAL to select **[OK?]**, then press **DISP/SETUP**  
The micro-SD card will be initialized.


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

"Completed" will be displayed when initialization is completed and the screen will then return to the menu list.

Before Using

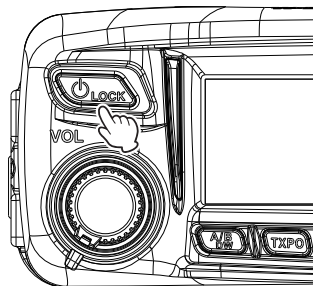
## Receiving

### Turning the power on


- 1 Press  for 2 seconds or longer

The power will be switched on, and the display will appear on the screen.

- Tips**
- When switching the power on for the first time after purchasing, or after resetting, a screen requesting the call sign of your own station be entered, will be displayed.
  - From the second time onwards, the call sign of your own station entered the first time will be displayed.



### Switching the power off


- 1 Press  for 2 seconds or longer

The screen display will disappear, and the power will be switched off.

### Inputting the call sign

When switching the power on for the first time after purchasing, or after resetting the device, a screen requesting the call sign of your own station be entered will be displayed.

The call sign is used to identify the transmitting station when communicating in the digital mode.

- 1 Turn the DIAL to select the desired characters, then press 

- Tips**
- Up to 10 characters (letters, numbers, and a hyphen ) can be entered.
  - Refer to Page xx on how to operate the character input screen.

- 2 Press 

The screen will change.

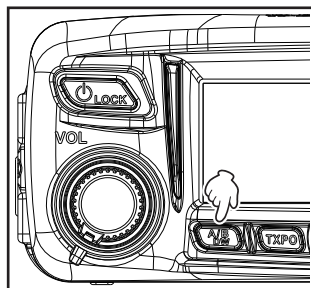
Thereafter, the entered call sign is displayed at the bottom of the power on screen, and the display will switch to the frequency display screen (dual band screen).

## Switching the operating band

The two bands are displayed at the top and bottom of the dual band screen. You can change the frequency and type of radio wave only for “operating band” which is displayed at the lower part of the screen. The other band is called “sub-band” which is displayed at the top part of the screen.

- 1 Press 

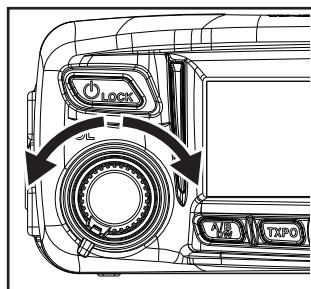
Pressing each time switches the operating band between Band A and Band B.



## Adjusting the volume

- 1 Turn VOL

Turning clockwise increases the volume whereas turning counterclockwise decreases the volume.



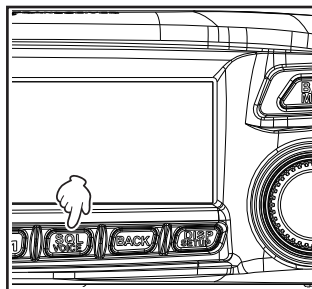
## Receiving

### Adjusting the squelch level

Annoying noises can be muted when a signal cannot be detected. Band A and Band B squelch levels can be individually adjusted. Noise can be canceled more easily when the squelch level is increased but it may become more difficult to pick up weak signals. Adjust the squelch level as required.

#### 1 Press [SQL]

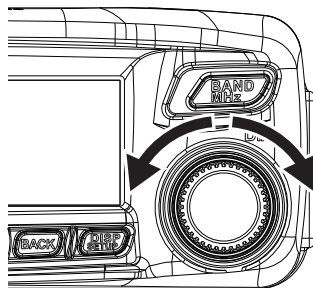
The sub-band will be displayed, and the current squelch level will be displayed on the SQL meter.



#### 2 Turn the DIAL to adjust the squelch level

The squelch level displayed on the sub-band display and the level displayed on the SQL meter will be changed.

**Tip** If you do not perform any operation for 3 seconds after changing the meter display or turning the DIAL, the screen will return to the normal screen.



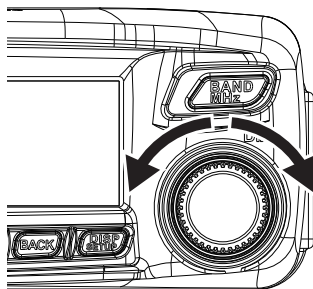


## Tuning the radio

### ● Using the knobs

#### 1 Turn the DIAL

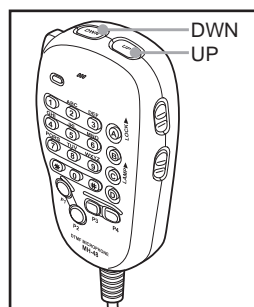
The frequency will increase when the knob is turned in a clockwise direction and decrease when turned in a counter-clockwise direction.



### ● Using the microphone keys

#### 1 Press [UP] or [DWN]

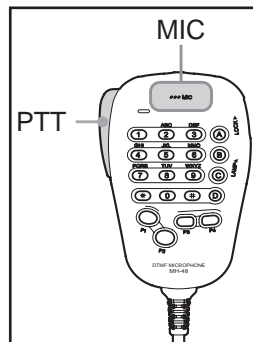
The frequency increases when [UP] is pressed, and decreases when [DWN] is pressed.



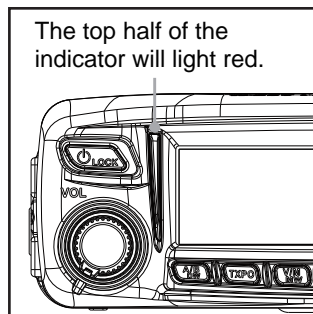
## Communicating

### Transmitting

- 1 Press and hold the microphone **[PTT]**  
The top half of the indicator will light red.
- 2 Talk directly into the microphone **[MIC]**  
**Tip** Keep the microphone at a distance of about 1 inch away from the mouth when talking.



The top half of the indicator will light red.



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

#### Tips

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

## Communicating

### Adjusting the transmit power

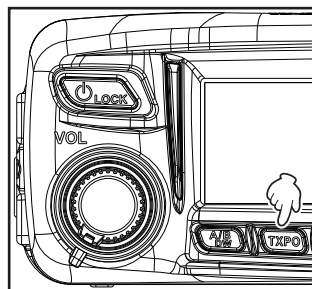
When communicating with a nearby station, the transmit power can be reduced to save on energy consumption.

- 1 Press **TXPO**

Pressing **TXPO** each time switches the transmission power in the following order.

“HI” → “LO” → “MD”

Model	HI	MD	LO
FTM-100DR	10W	20W	5W

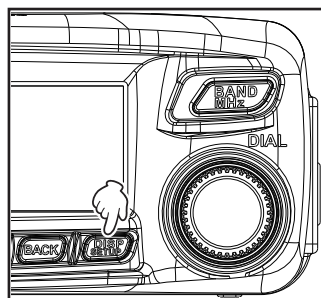


### Adjusting the sensitivity of the microphone

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

- 1 Press **DISP** for one second or longer

The set-up menu will be displayed.



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

The menu list will be displayed.

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

The microphone gain setting value will be displayed.

- 4 Turn the DIAL to select the desired microphone gain

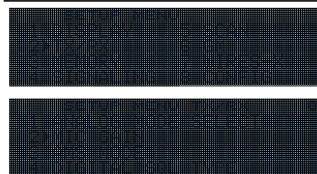
“1 MIN” → “2 LOW” → “3 NORMAL” → “4 HIGH”

**Tip** Factory default value: NORMAL

- 5 Press **DISP** for one second or longer

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

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



## Communicating

### Communicating in the FM mode

- 1 Choose the operating band
- 2 Select “MANUAL (FM)” as the modulation mode
- 3 Turn the DIAL to tune in to the frequency
- 4 Press and hold the microphone **[PTT]** to talk

#### Tip

You can also use the half deviation. From **[2 TX/RX]** → **[8 HALF DEVIATION]** in the set-up menu, select “ON”.

## Specification

### ● General

Frequency range	: TX 144 - 146 MHz or 144 - 148 MHz 430 - 440 MHz or 430 - 450 MHz
	: RX 108 - 137 MHz (Air Band) 137 - 174 MHz (144 MHz HAM) 174 - 400 MHz (GEN1) 400 - 480 MHz (430 MHz HAM) 480 - 999.99 MHz (GEN2)
Channel steps	: 5/6.25/8.33/10/12.5/15/20/25/50/100 kHz (8.33 kHz : only for Air band)
Emission Type	: F1D, F2D, F3E, F7W
Frequency stability	: $\pm 2.5$ ppm $-4^{\circ}\text{F}$ to $+140^{\circ}\text{F}$ ( $-20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ )
Antenna impedance	: 50 $\Omega$
Supply Voltage	: Nominal 13.8 V DC, negative ground
Current consumption	: 0.5 A (receive) 11 A (50 W TX, 144 MHz) 12 A (50 W TX, 430 MHz)
Operating temperature	: $-4^{\circ}\text{F}$ to $+140^{\circ}\text{F}$ ( $-20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ )
Case size	: Radio unit: 5.5" (W) $\times$ 1.6" (H) $\times$ 4.9" (D) (140 $\times$ 40 $\times$ 125 mm) w/o fan Controller: 5.5" (W) $\times$ 2.8" (H) $\times$ 0.8" (D) (140 $\times$ 72 $\times$ 20 mm)
Weight (approx.)	: 2.64 lbs (1.2 kg) with radio unit, controller, control cable

### ● Transmitter

RF power output	: 50/20/5 W
Modulation type	: F1D, F2D, F3E : Variable Reactance Modulation F7W : 4FSK (C4FM)
Spurious emission	: At least 60 dB below
Microphone impedance	: About 2 k $\Omega$
DATA terminal input impedance:	About 10 k $\Omega$

## Specification

### ● Receiver

<b>Circuit type</b>	: Double conversion super-heterodyne	
<b>Intermediate frequencies</b>	: A band: 1st : 47.25 MHz, 2nd :450 kHz B band: 1st : 44.85 MHz, 2nd : 450 kHz	
<b>Receiver Sensitivity</b>	: 108 - 137 MHz (AM) 137 - 140 MHz (FM) 140 - 150MHz (FM) 150 - 174 MHz (FM) 174 - 222 MHz (FM) 222 - 300 MHz (FM) SINAD 300 - 336 MHz (AM) 336 - 420 MHz (FM) 420 - 470 MHz (FM) 470 - 520 MHz (FM) 800 - 900 MHz (FM) 900 - 999.99 MHz (FM)  Digital mode 140 - 150 MHz (Digital) 420 - 470 MHz (Digital)	0.8μV typ for 10 dB SN 0.2μV for 12 dB SINAD 0.2μV for 12 dB SINAD 0.25μV for 12 dB SINAD 0.3μV typ for 12 dB SINAD 0.25μV typ for 12 dB  0.8μV typ for 10 dB SINAD 0.25μV for 12 dB SINAD 0.2μV typ for 12 dB SINAD 0.2μV for 12 dB SINAD 0.4μV typ for 12 dB SINAD 0.8μV typ for 12 dB SINAD Cellular blocked (USA only)  0.19μV typ for BER 1% 0.19μV typ for BER 1%
<b>Squelch sensitivity</b>	: 0.16μV (144/430 MHz)	
<b>Selectivity</b>	: AM, FM 12 kHz/35 kHz (−6 dB/−60 dB)	
<b>AF output</b>	: 3 W (8 Ω, THD10%, 13.8 V) internal speaker 8 W (4 Ω, THD10%, 13.8 V) Optional MLS-200-M10	
<b>AF output impedance</b>	: 4 - 16 Ω	
<b>Strength of secondary radio waves</b>	: 4 nW and below	

### Cautions

- Rated values are at normal temperature and pressure.
- Ratings and specifications are subject to change without notice.

## Specification

1. Changes or modifications to this device not expressly approved by YAESU MUSEN could void the user's authorization to operate this device.
2. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference including received, interference that may cause undesired operation.
3. The scanning receiver in this equipment is incapable of tuning, or readily being altered, by the User to operate within the frequency bands allocated to the Domestic public Cellular Telecommunications Service in Part 22.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### DECLARATION BY MANUFACTURER

The Scanner receiver is not a digital scanner and is incapable of being converted or modified to a digital scanner receiver by any user.

**WARNING:** MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

# ***YAESU***

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***The radio***

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