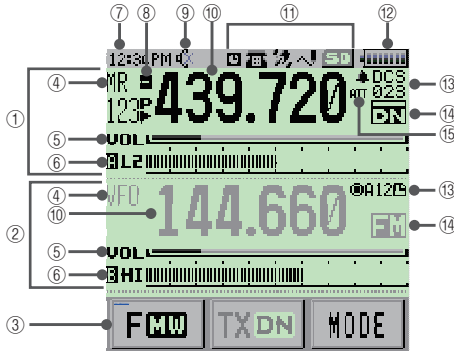


Names and Functions of Controls

Touch Screen Display



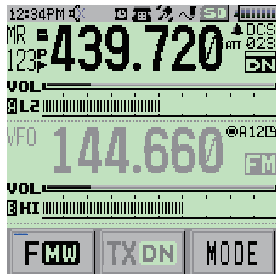
- ① This is the A-band display area.
- ② This is the B-band display area.
- ③ Displays touch keys.
- ④ Displays mode.
In VFO mode, "VFO" is displayed.
In Memory mode, "MR" and the channel number are displayed.
- ⑤ Gauge displays the sound volume level.
- ⑥ Displays the icon of the transmission output, the S meter and the PO meter.
S meter: Displays the radio wave strength in 9 steps.
PO meter: Displays the transmission power level in 4 steps.
H I: High power (5W)
L 3: LOW 3 power (2.5W)
L 2: LOW 2 power (1W)
L 1: LOW 1 power (0.1W)
- ⑦ Displays the time.
- ⑧ Displays a shift direction during repeater operation (see page xx).
-: Minus shift
+: Plus shift
⊕: Split operation
- ⑨ lights up when the Mute function is active (see page xx).
- ⑩ Displays the frequency.

- ⑪ Displays icon types.
 : Lights up when the APO function is active (see page xx).
 : Lights up when the DTMF function is enabled (see page xx).
 : Lights up when GPS is acquired (see page xx).
 : Lights up when a microSD memory card is inserted (see page xx).
 : Lights up when using a microSD memory card (see page xx).
- ⑫ The battery condition is displayed in 8 steps.
 : Full battery power
 : Battery is depleted. Charge battery.
 : (When blinking) Charge battery immediately.
- ⑬ Displays squelch type (see page xx)
TN: Lights up when the tone encoder function is enabled.
TSQ: Lights up when the tone squelch function is enabled.
DCS: Lights up when the DCS function is enabled.
RTN: Lights up when the reverse tone function is enabled.
JR: Lights up when the JR idle signal squelch function is enabled.
PR: Lights up when the idle signal squelch function is enabled.
PAG: Lights up when the pager is enabled.
Displays the APRS baud rate (see APRS function Instruction manual).
- ⑭ Displays operation mode.
FM: FM (Analog) mode
FM: Auto mode (automatic switching among Analog AM, Analog FM, and Digital) *The display of the "FM" portion differs according to the selected mode.
DN: Wide digital mode (digital mode using C4FM modulation)
VW: Wide digital mode (high-quality digital communication)
- ⑮ appears when the bell function is active (see page xx).

Names and Functions of Controls

• Dual Band Screen

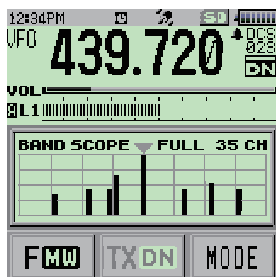
A-band and B-band are displayed in a top-down fashion.



- Touching **[F MW]** displays the function menu screen.
- Touching **[TX DN]** enables for the communication mode to be fixed on the transmission side.
- Touching **[MODE]** switches between Analog and Digital.

• Band Scope Screen

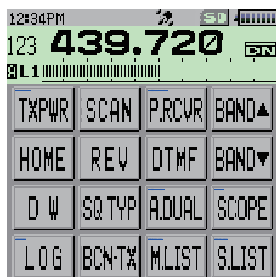
When the band scope operation is enabled, the display is as follows.



Reference You can change the number of band scope channels by selecting **[DISPLAY] → [4 BAND SCOPE]** in Set mode. You can select 17 channels, 35 channels or 71 channels.

• Function Menu Screen

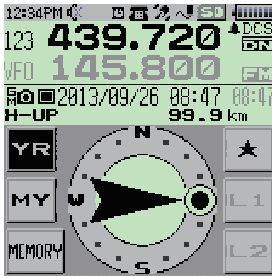
Touching **[F MW]** displays the function menu screen.



Names and Functions of Controls

• BACKTRACK Screen

Pressing the **[DISP]** key displays the BACKTRACK screen.



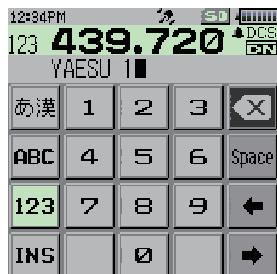
- The compass setting is displayed to the upper left of the compass icon. “H-UP” is displayed when the direction in which you are heading is set to always facing up, whereas “N-UP” is displayed when North is set to always facing up. In the Set mode option **[DISPLAY] → [3 COMPASS]**, you can change the compass setting.
- Upon retrieval of the registered position information, the distance from the current position displays to the upper right of the compass icon.
- Touching **[YR]** displays the position of the received friend station displays on the compass icon (only when the signal carries the position information).
- Touching **[MY]** displays your heading direction on the compass icon.
- Touching **[MEMORY]** switches to the mode for registering the current position information.
- Touching **[★]** displays the position information registered with the “★” tag. When touching while flashing, the position information displayed on the compass icon is stored in the memory with a “★” tag.
- Touching **[L1]** displays the position information registered with the “L1” tag. When touching while flashing, the position information displayed on the compass icon is stored in the memory with an “L1” tag.
- Touching **[L2]** displays the position information registered with the “L2” tag. When touching while flashing, the position information displayed on the compass icon is stored in the memory with an “L2” tag.

Names and Functions of Controls

Entering Letters

The keyboard screen appears for inputting letters such as your call sign or a memory channel tag.

• Number & Symbol Input Screen



- Touch **[ABC]** to display the alphabet input screen.
- Touching **[123]** switches the key to [#&%] and displays the symbol input screen. Touching each time switches between the number input screen and the symbol input screen.
- Touch **[←]** **[→]** to move the cursor to left/right in the text input area.

• Alphabet Input Screen



Attaching the Supplied Accessories

Installing the Antenna

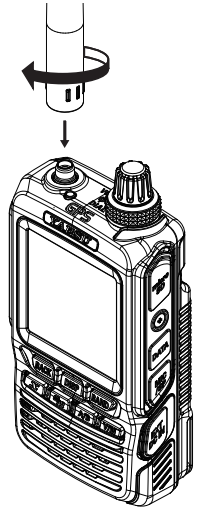
- 1 Align the bottom side of the antenna with the antenna terminal on the transceiver.

Caution Be sure to hold the thick base of the antenna when installing it

- 2 Turn the antenna clockwise until it is secured.

Cautions

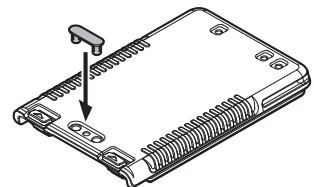
- Do not hold the upper part of the antenna when installing or removing it. To do so, the wire inside the antenna may break.
- Do not transmit without installing the antenna. The transmitter circuit can be damaged.
- When using an antenna other than the supplied one or any other external antenna, ensure that its SWR is adjusted to 1.5 or lower.



Attaching the Accessory Belt Clip/Protective Cap

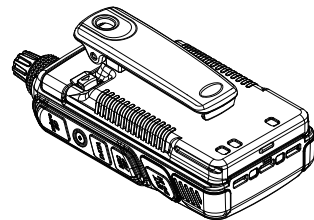
Attaching the Protective Cap

If you do not use the belt clip, attach the protective cap to the belt clip attaching screw holes on the battery pack.



Attaching the Belt Clip

- 1 Turn over the battery pack.
- 2 Attach the belt clip to the battery pack using the supplied screws (two).



Cautions

- Be sure to use the supplied screws when attaching the belt clip. If any other screws are used, the belt clip cannot be secured firmly to the battery pack and the transceiver may drop off together with the battery pack, causing injury, breakage and other troubles.
- Be sure to attach the protective cap when the belt clip is not used.

Attaching the Supplied Accessories

Attaching a Hand Strap

If you attach a hand strap to the transceiver, use its 1 mm diameter string which is inserted in and secured to the strap hole of the transceiver.

* The hand strap is not supplied.

- 1 Remove the battery pack.
- 2 Attach the hand strap.

Caution

Use a hand strap which can withstand the weight of the transceiver. If you use a hand strap which is not strong enough, the hand strap can break and the transceiver may fall down, causing injury, breakage and other troubles.

T.B.D.

Preparing the Battery Pack/External Power Supply

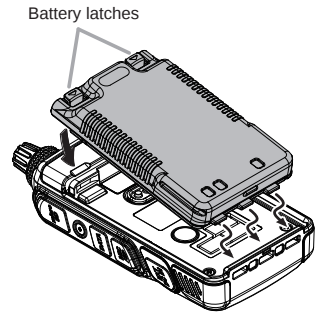
Installing/Removing the Battery Pack

Installing the Battery Pack

- 1 Insert the bottom tabs of the battery pack in the slots on the back side lower part of the transceiver.
- 2 Push the battery in until the battery latches click securely.

Caution

When you use the transceiver for the first time after purchase or you have not used it for a long period, charge the battery pack before use.



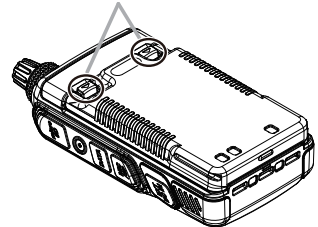
Removing the Battery Pack

- 1 While pressing down the latches, remove the battery pack.
Press down the latches to the direction of arrows as shown in the illustration.

Caution

When releasing the battery latches, be careful not to hurt your fingers and nails.

Press down on the latches
in the direction of the arrow.



Preparation

Charging the Battery Pack

Cautions

- The battery pack is rechargeable about 300 times. However, improper use such as overcharge or over-discharge can shorten its service life.
- The battery pack is a consumable item. Recharging the battery pack repeatedly will gradually shorten the duration of its usage.
- If the transceiver is not used for a long period with the battery pack installed, deterioration of the battery pack can accelerate.
- If you do not use the transceiver for a long period, be sure to store it with the battery pack removed. Even if you do not use the transceiver for a long period, install the battery pack biannually and recharge the battery pack about 50% to prevent it from over-discharging.
- Storing the battery pack in a high-temperature place can deteriorate it faster than usual. Store the battery pack in a place where the ambient temperature is -20°C to $+50^{\circ}\text{C}$ (-4°F to $+122^{\circ}\text{F}$).
- Be careful not to drop or give a strong shock to the battery pack. It can break.

Preparing the Battery Pack/External Power Supply

Tips

- The battery pack contains lithium-ion batteries that can be recharged for repetitive use.
- The transceiver can be used with either of the following battery packs:
 - (1) Supplied battery pack: SBR-14LI (7.2 V, 2,200 mAh)
 - (2) Optional battery pack: FNB-102LI (7.4 V, 1,800 mAh)
- When the battery pack is recharged, its output voltage becomes higher (about 8 V) than the specified value (7.4 V). This is not a malfunction.

T.B.D.

- 1 Install the battery pack.
- 2 Turn off the transceiver.
- 3 Insert the plug of the battery charger (PA-48) in the EXT DC IN jack of the transceiver.

Charging starts.

While the battery is being charged,  lights red and the display indicates "NOW CHARGING".

The charge level is indicated by a bar graph.

It takes about 8 hours to charge the battery pack fully.

When charging is completed, the display will change to indicate "COMPLETE" and the lamp will light green.

T.B.D.

Preparing the Battery Pack/External Power Supply

Supplements

- It takes about 8 hours to charge the FNB-102LI (optional).
- The optional Rapid Charger Cradle (CD-41) requires about 4 hours to charge the supplied battery pack (about 2.5 hours to charge the optional battery pack FNB-102LI).

Place the battery pack on the CD-41 so that the rails of the CD-41 fit into the grooves on the battery pack.

When charging the battery pack using the CD-41, the LED on the CD-41 indicates the state of charging.

During charging: Lights red → Fast blinks → Slowly blinks

Completion of charging: Lights green

4 Remove the plug of the battery charger from the jack of the transceiver.

Cautions

- Neither transmission nor reception can be performed while charging the battery pack using the supplied battery charger.
- Charging may cause noise in the nearby TV or radio.
Charge the battery pack with the battery charger as far away as possible from a TV or radio.
- If "BATTERY NOT INSTALLED" appears on the LCD and the battery pack cannot be charged after lapse of 11 or more hours, stop charging the battery pack immediately.
If the same message appears again, the battery pack is presumably at the end of its service life or defective. In such a case, replace the battery pack with a new one.
- While charging the battery pack, protect the transceiver from water.
- Charge the battery pack in a place where the ambient temperature is +5 °C to +35 °C (+41 °F to +95 °F).
- If the terminal or electrode of the battery case is dirty, this transceiver can malfunction due to poor contact, resulting in overheating or rupture. If the terminal or electrode gets dirty, clean it using a dry cloth or cotton swab.

Tips

- The battery charger may become hot during charging. This is not a malfunction.
- If  starts blinking, the battery pack charge is depleted. Charge it immediately.

Approximate Operating Time and Remaining Charge Level Indication

Approximate time to operate the transceiver with the fully charged battery pack or new AA alkaline batteries is as follows:

Band in Use Digital: OFF		Battery pack FNB-102LI	Battery pack SBR-14LI	Battery FBA-39
Amateur Band	144 MHz band	Approx. 8.0 hours	Approx. 8.0 hours	Approx. 15.5 hours
	430 MHz band	Approx. 7.5 hours	Approx. 7.5 hours	Approx. 15.0 hours
AM Broadcast Band		Approx. 16.0 hours	Approx. 16.0 hours	Approx. 18.0 hours
FM Broadcast Band		Approx. 13.0 hours	Approx. 13.0 hours	Approx. 14.5 hours
Band in Use Digital: ON		Battery pack FNB-102LI	Battery pack SBR-14LI	Battery FBA-39
Amateur Band	144 MHz band	Approx. 6.5 hours	Approx. 6.5 hours	Approx. 11.0 hours
	430 MHz band	Approx. 6.0 hours	Approx. 6.0 hours	Approx. 10.5 hours

Transmission 6 seconds: Reception 6 seconds (VOL Level 16): Stand By 48 seconds (SAVE1:5)

Preparing the Battery Pack/External Power Supply

- Remark** Approximate hours are estimated assuming that the transceiver is operated under the following conditions. The operation time that this transceiver can be actually used varies depending on use conditions, ambient temperature, etc.
- When the GPS function is deactivated.
 - When the transceiver is repeatedly operated by high-power transmission for 6 seconds and reception for 6 seconds, and standby for 48 seconds with an amateur ham radio band selected.

How to Use the Battery Case (FBA-39) Optional

The optional battery case (FBA-39) allows 3 AA Alkaline batteries to be used for the power supply.

Tip

When the battery case (FBA-39) is used, you can select a power output level from:

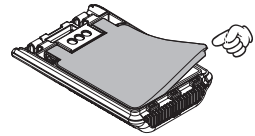
Low Power (L1): 0.1 W

Low Power (L2): Approximately 0.8 W

Note that Low Power (L3) and High Power are not available.

1 Open the cover.

Lift up the lower right corner of the cover as indicated by the hand pointer in the illustration.

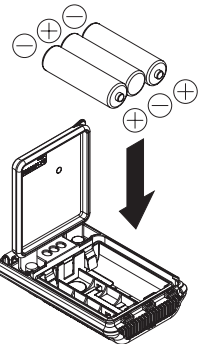


2 Put alkaline batteries in the battery case.

Caution Use 3 alkaline batteries. Pay attention to polarities (+ and -) of the alkaline batteries.

3 Close the cover.

Push the four corners of the cover firmly to close it tightly.



Tip

When the battery charge is low,  lights on the LCD. When the batteries are almost exhausted,  blinks on the LCD.

Cautions

- Manganese batteries cannot be used. Rechargeable AA batteries cannot be used, either.
- Do not mix new and old batteries. The service life of new batteries may decrease.
- If you do not use the transceiver for a long period, remove the batteries from the battery case.
- If the terminal or electrode of the battery case is dirty, the transceiver can malfunction due to poor contact, resulting in overheating or explosion. If the terminal or electrode gets dirty, clean it using a dry cloth or cotton swab.