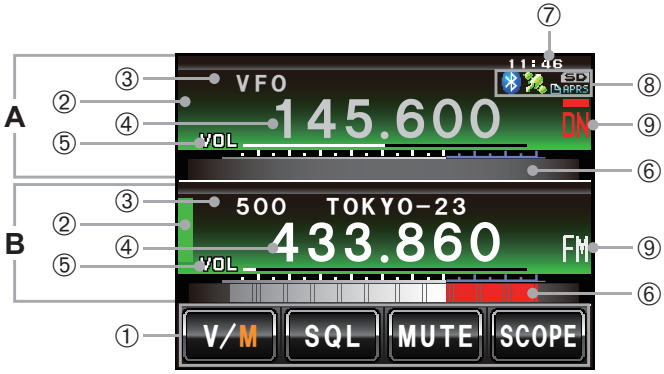
Explanation of the screen



A Band A display area

B Band B display area
The characters of the name tag and frequency are displayed in white for the operating band, and gray for the sub-band.

① Touch key display area
Functions to be displayed in the function menu screen can be assigned to the touch keys. Refer to “Changing the touch key functions” (☞P.121) for details.

② Status display area
A green bar is displayed during receive and when signals are detected.
The bar will not be displayed when the squelch is turned on.
A red bar is displayed when transmitting.

③ Tag display area
“VFO” is displayed in the VFO mode.
The memory channel number and the tag are displayed in the memory mode.

④ Frequency display area
In the memory mode, pressing DIAL for one second or longer will display the memory channel tag.

⑤ VOL/SQL level display area

⑥ S-meter/transmit power level display, and also partner station information display

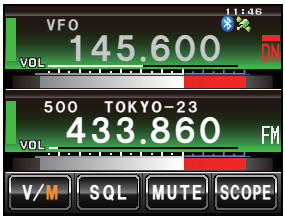
⑦ Clock/Voltage display area

⑧ Icon display area
Bluetooth, APRS, micro-SD card and GPS icons are displayed when each function is in use.

⑨ Communication mode display area
The analog and digital modes are indicated using symbols.
A red bar will be displayed above the symbol in the AMS (auto mode). The AMS automatically matches the communication mode of the received signal.
* Digital communications can operate in Band A only.

● Dual band screen

Band A and Band B will be displayed at the top and bottom.



[V/M] The VFO channel and memory channel will be switched by touching this symbol. The “V” is displayed in orange in the VFO mode while the “M” is displayed in orange in the memory mode.

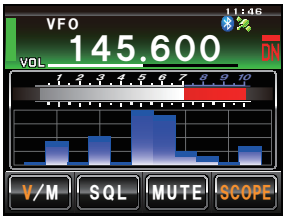
[SQL] The squelch level can be set after touching this symbol. The characters are displayed in orange for 5 seconds during the time that the squelch level can be set.

[MUTE] The receive audio can be muted by touching this. The characters are displayed in orange when the sound has been muted.

[SCOPE] The band scope operation toggles on or off each time this symbol is touched. The characters are displayed in orange during the band scope operation.

● Band scope screen

The screen appears as shown, when the band scope is turned on.



Tip The width of the band scope can be set to either “WIDE” or “NARROW” under **[DISPLAY]→[4 BAND SCOPE]** in the set-up menu.

● Function menu screen

When [F] is pressed, the function menu is displayed on the screen under the operating band.

[BACK][FWD]

The menu changes each time these symbols are touched.

Tip The functions displayed in the menu can be assigned to the touch keys at the bottom of the display. Refer to Page 121 for details.

Change the display mode

The display mode will switch in the sequence each time [DISP SETUP] is pressed.

Frequency display screen→Compass/Lat&Lon display screen→Altitude display screen*→Timer/Clock screen*→GPS screen*

*This screen will be displayed when **[DISPLAY]→[1 DISPLAY SELECT]** is set to "ON" in the set-up menu.

● Compass screen

The direction of travel of your own station and direction coordinate of the received station are displayed in the compass screen.

COMPASS Displays the compass settings. There are two settings, "Heading Up" where the direction of travel is on top, and "North Up" where North is always on top.
Refer to "Change the Compass Settings" (☞ P.94) for details.

DISTANCE When a saved position information is recalled, the distance from the current position is displayed.

[YR] When this symbol is touched, the position of the partner station that is received is displayed in the compass (when the position information is included in the signal), and the symbol is shown in orange.

[MY] When this symbol is touched, the direction of travel of your own station is displayed in the compass, and this symbol is displayed in orange.

[MEMORY] When this symbol is touched, the position information being displayed is saved in the memory.

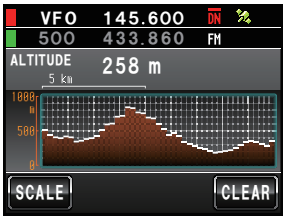
[★] When this symbol is touched while the display is green, the position information saved in the memory under the tag "★" is displayed.
When this symbol is touched while the display is blinking, the position information displayed in the compass will be saved in the memory under the tag "★".

[L1] When this symbol is touched while the display is green, the position information saved in the memory under the tag "L1" is displayed.
When this symbol is touched while the display is blinking, the position information displayed in the compass will be saved in the memory under the tag "L1".

[L2] When this symbol is touched while the display is green, the position information saved in the memory under the tag "L2" is displayed.
When this symbol is touched while the display is blinking, the position information displayed in the compass will be saved in the memory under the tag "L2".

● Altitude display screen

The altitude of the current location is shown in the bar graph display.



ALTITUDE Displays the current altitude.

Vertical axis Represents the altitude.

Horizontal axis
Represents the distance.

[SCALE] When this symbol is touched, the scale of the distance changes.

[CLEAR] When this symbol is touched, the graph display will be cleared (erased).

● Timer/Clock screen

The current time is shown in analog and digital formats. The date is also shown.

[MODE] The mode switches between the lap timer mode and the countdown timer mode each time this symbol is touched.

Name and Function of Each Component

● Lap timer screen

[START] The count starts when this symbol is touched.

[LAP] The lap time is then saved in the memory (a maximum of 99 lap times can be saved) and displayed in the upper lap display window when this symbol is touched.
The lap time (of the new interval) being measured will be displayed in the lower lap display window.

[STOP] The count stops when this symbol is touched.

[RECALL] When this symbol is touched, the lap time saved in the memory is shown in the upper lap display window while the split time is shown below. When there are multiple lap times, touch **[▲][▼]** to move between the lap times.
Touch **[RECALL]** again to return to the measurement screen.

[RESET] The counter is reset when this symbol is touched.

● Count down timer screen

[START] The count starts when this symbol is touched.

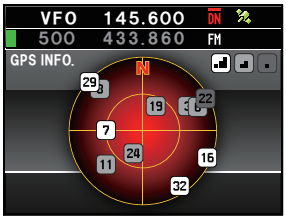
[STOP] The count stops when this symbol is touched.

[RESET] The counter is reset when this symbol is touched.

[SETUP] The count time can be changed (from 1 minute to 99 hours and 59 minutes) when this symbol is touched. Each time this symbol is touched, the setting will switch from “Hours” to “Minutes” to “Confirm”. The time can be changed by touching **[-]** and **[+]** or turning DIAL.

● GPS screen

The GPS satellite statuses are shown with numbered icons.



1, 2, etc.	Received satellite number
1	Signal strength High
1	Signal strength Medium
1	Signal strength Low

Input the character

The keyboard screen is displayed when entering a memory channel tag or the call sign of your own station.

● Numbers and symbols input screen

[ABC]	The screen changes to the alphabet input screen when this symbol is touched.
[123#%^]	The screen changes to the input screen for numbers and symbols each time this symbol is touched.
[←][→]	The cursor in the input field moves left and right when these symbols are touched.
[ENT]	The entered characters are confirmed and the display returns to the previous screen when this symbol is touched.
[BACK]	The display returns to the previous screen when this symbol is touched.
[⌫]	One character to the left of the cursor is erased when this symbol is touched.

● Alphabet input screen

[Caps]	The input switches between small and capital letters input each time this symbol is touched.

Installing the Radio

Precautions during installation

Note the following when installing this radio.

- ❍ Do not install the radio in a place where there is extreme vibration, where there is a lot of dust, excessive humidity or high temperature, or where it is exposed to direct sunlight.
- ❍ Install the radio in a well ventilated position, so heat release is not obstructed because the heat sink gets hot when transmitting for a long periods of time.
- ❍ Do not place any objects on top of the main body.
- ❍ Do not lift up or hold the controller by holding the knob or control cable.
- ❍ A regulated, negative ground 13.8 V DC power supply is required for this radio. Check that the car battery is a negative ground 12 V system when using this radio in a mobile unit. Never connect this radio to the 24 V battery of a large vehicle.
- ❍ Never connect this radio to a 120 V AC power source.
- ❍ Note that there is a risk that hum and noise may be introduced, depending on the installation condition and the external power source used.
- ❍ Install the device as far away as possible from the TV and radio to avoid TV and radio interference (TVI, BCI).
  In particular, do not install this radio near indoor antenna elements.

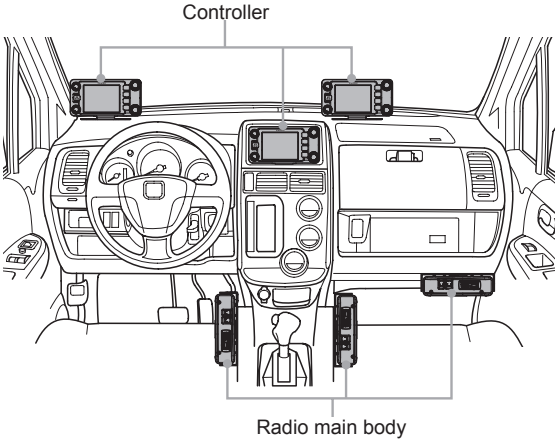
Installation location when used in a mobile unit

● Controller

It is recommended that the controller be installed on top of the car dash board or in front of the center console. Refer to Page 28 on how to install the controller.

● Main body

It is recommended that the main body be installed below the car dash board or to the side of the center console. Refer to Page 27 on how to install the main body.



About the antenna

A good antenna installation is extremely important for transmission and reception purposes. Note the following, as the type and characteristics of the antenna largely determines whether the performance of the radio can be fully realized.

- Use an antenna that suits the installation conditions and application objective.
- Use an antenna that suits the operating frequency band.
- Use an antenna and a co-axial cable with a characteristic impedance of 50Ω.
- Adjust the VSWR (standing wave ratio) until it is 1.5 or less for an antenna with an adjusted impedance of 50Ω.
- Keep the co-axial cable routing length as short as possible.

Install the antenna

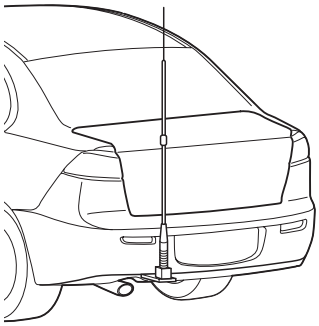
● Antenna installation in a mobile unit

Mount the antenna base at the rear of the car (rear bumper, trunk, rear gate, etc.) and then attach the antenna to the base.

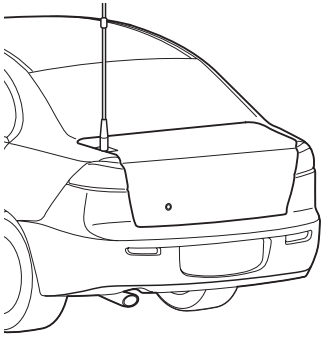
Cautions

- Ensure that the antenna base is securely grounded to the car body.
- Avoid routing the co-axial cable enclosed with a commercial car antenna cable.
- Do not allow rain water or moisture to penetrate the cable or connectors when laying the co-axial cable inside the car.

Bumper type



Trunk type



● Antenna installation in a fixed station

There are omni-directional, and directed array antennas for use in an outdoor setting.

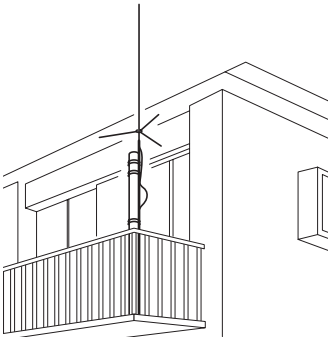
- Omni-directional antennas such as the GP (Ground Plane) antenna are suitable for communications between a local station and mobile stations in all direction.
- Directional antennas such as the Yagi antenna are suitable for communications between a base station and a remote station in a specific direction.

Installing the Radio

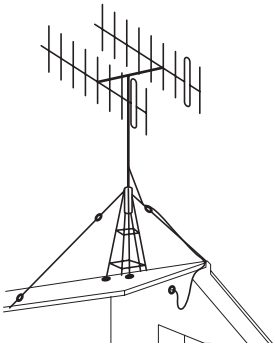
Cautions

- Create a loop (slack) in the co-axial cable directly underneath the antenna and fasten it so that the weight of the cable does not pull on the antenna or connector itself.
- Install the antenna taking into consideration the securing supports and how the guying wires are positioned, so that the antenna does not fall over or get blown away in strong winds.

GP antenna
<Veranda Mounted Example>



Yagi antenna
<Roof Mounted Example>



Installing the main body

Install the main body using the provided MMB-36 bracket.

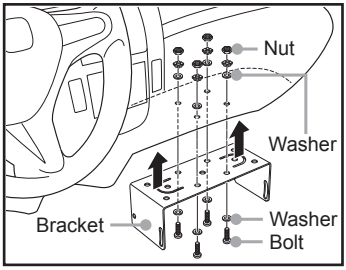
1 Select the installation location

Caution Select a location where the antenna coax and power cable can be securely attached.

Tip Also refer to “Installation location when used in a mobile unit” (☞P.24).

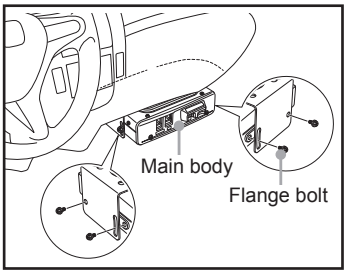
2 Drill four 6 mm diameter holes in the location where the bracket is to be mounted, matching the positions of the bolting holes of the bracket

3 Attach the bracket using the provided bolts, nuts and washers



4 Fasten the main body to the bracket, using the provided flange bolts, as shown in the drawing

Tip The mounting angle can be changed depending on the securing position of the flange bolts.



Installing the controller

Install the controller using the provided bracket.

Caution

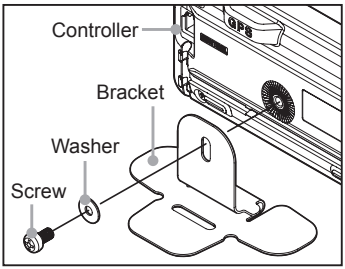
The bracket can be bent by hand to match the location where the controller is going to be installed. Take due care not to injure yourself when bending the bracket.

1 Select the installation location

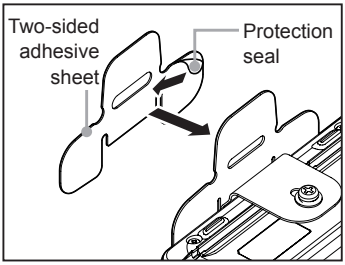
Caution Select a stable, flat location with as few dents and protrusions as possible.

Tip Also refer to "Installation location when used in a mobile unit" (☞P.24).

2 Fix the bracket to the controller using the provided screws and washers, as shown in the drawing



3 Peel off the protective seal from one side of the provided two-sided adhesive sheet, and paste it onto the bottom of the bracket



4 Peel off the other protection seal from the underside of the two-sided adhesive sheet pasted onto the bracket, and then stick the bracket to the installation location

Caution Remove all dirt and dust from the installation location before affixing the bracket.