

FM/AM PLL Synthesized Radio

Operating Instructions

ICF-M88B



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<http://www.sony.net/>

OWNER'S RECORD

The model number is located on the left side of the front panel, and the serial number is inside the battery compartment. Record the serial number in the space provide below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. ICF-M88B

Serial No. _____

For customers who purchased this product in the USA

Please register this product on line at

<http://www.sony.com/productregistration>

Proper registration will enable us to send you periodic mailings about new products, services, and other important announcements. Registering your product will also allow us to contact you in the unlikely event that the product needs adjustment or modification. Thank you.

Features

- FM/AM PLL(phase locked loop) synthesized radio with built in cycle-computer
- New ergonomic design
- Water-resistant for all-weather use
- 15 station memory presets (10FM/5AM)
- Easy Jog lever operation
- Easy to see backlit LCD
- Easy to install mounting kit included
- FM SENS DX(Distance)/LOCAL switch

Precautions

- Operate the unit only on 3 V DC with two size AA (R6) batteries.
- Avoid exposure to temperature extremes, direct sunlight, moisture, sand, dust or mechanical shock. Never leave in a car parked under the sun.
- Avoid continuous exposure to direct sunlight or extremely high temperatures to prevent possible damage to the display. The display will function normally again in normal operating temperature.
- Display switching may become slower in cold climates.
- Should any solid object or liquid fall into the unit, remove the batteries and have the unit checked by a qualified personnel before operating it any further.
- To clean the casing, use a soft cloth dampened with a mild detergent solution.
- Since a strong magnet is used for the speaker. Keep away personal credit cards using magnetic cording or spring-wound watches from the unit to prevent possible damage from the magnet.

Cautions on Water-resistance

This unit is designed so that it can be used with slight exposure to rain, snow and other forms of moisture, but there are several points on which caution should be observed.

- Do not allow it to come into contact with large amounts of water.
- Do not immerse it in water.
- If water should get on it or if it should fall into water, take it out immediately and wipe it off with a dry cloth. To prevent the battery from corroding, wipe out the interior of the battery compartment as follows:
 - Open or close the battery compartment with dry hands in a place without exposure to any water.
 - Wipe off the battery and the inside of the battery compartment. Give special attention to the contacts so that no water remains on them.

Notes on the cycle-computer radio

- The user must obey all traffic laws when using the device.
- To check whether the local laws allow the use of the device.
- In order to prevent dangerous condition, do not operate the device when running the bicycle.
- In order to prevent theft, take your device with you at all times.
- In order to prevent dangerous condition, install the sensor cord properly so that it will not get tangle by the tire.

If you have any questions or problems concerning your unit, please consult your nearest Sony dealer.

The preset stations may be initialized, if a maintenance service is performed. Please keep a copy of your settings in case you want to preset them again.

Specifications

Time display: 12-hour system

Frequency range:

Band	Range	Channel step
FM	87.5 - 108 MHz	0.1 MHz
AM	530 - 1 710 kHz	10 kHz
	531 - 1 710 kHz	9 kHz

Speaker: Approx. 50 mm (2 inches) dia, 8Ω

Power output: 80 mW (at 10% harmonic distortion)

Power requirements: 3V DC, two size AA (R6) batteries

Dimensions :

Approx. 166.8 × 70 × 95 mm (w/h/d) (6 5/8 × 2 7/8 × 3 3/4 inches) incl. projecting parts and control.

Mass: Approx. 281.4 g (9.93 oz) incl. batteries / excl. accessories

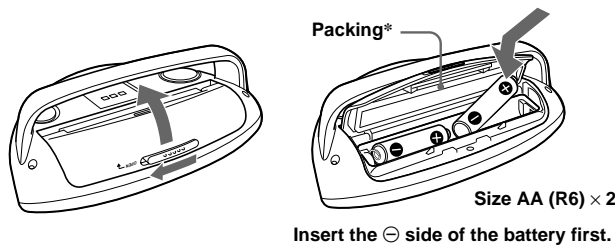
Supplied accessories:

- Mount with wheel sensor (1), Thick/Thin rubber pads (2 each), Wheel magnet (1), Zip ties (5), Double-sided tape (1), Screws (2)

Design and specifications are subject to change without notice.

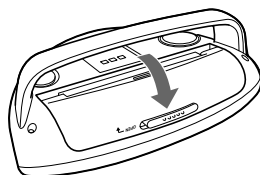
Installing the Batteries

- 1 Slide OPEN to open the battery compartment lid and install two size AA (R6) batteries (not supplied) with correct polarity. When the batteries are first installed, "AM 12:00" flashes in the display. Once the current time is set, the flashing stops. (See "Setting the Clock.")



* Packing inside of the lid is used to ensure water-resistance for the battery compartment. Therefore, make sure to close the battery compartment lid securely.

- 2 Close the lid.



Battery Life (Approx. hours)	(JEITA*)	
When using	FM	AM
Sony alkaline size AA (LR6)	66	84
Sony size AA (R6)	23	31

* Measured by JEITA (Japan Electronics and Information Technology Industries Association) standards.

The actual battery life may vary depending on circumstances of use.

Replace the batteries

When the batteries become weak, the sound may become weak or distorted, and "⊖" will flash in the display. After that, when the batteries are used up, "⊖" will light up and clock time display appears. And then the cycle-computer function will be stopped so that any button functions will not work. The Radio function will be also turned off if it is on. If this happens, replace the batteries with new ones.

After the batteries are replaced, press **RADIO POWER, RESET**, or install the unit on the Mount. ("⊖" turn off in the display.)

Note on replacing the batteries

Do not take more than 5 minutes to replace the batteries, otherwise, the clock setting will be initialized. Should that happen, reset the functions.

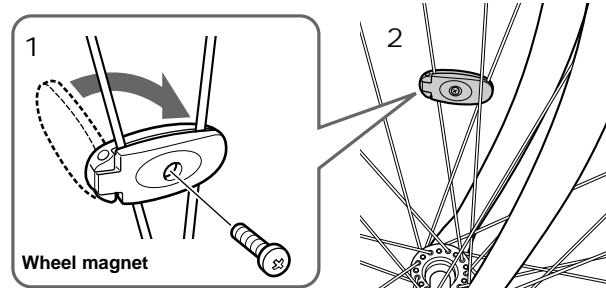
Notes on batteries

- Do not charge the dry batteries.
- Do not carry the dry batteries together with coins or other metallic objects. It can generate heat if the positive and negative terminals of the batteries accidentally come into contact with metallic objects.
- When you are not going to use the unit for a long time, remove the batteries to avoid damage from battery leakage and corrosion.
- Do not use different types of batteries at the same time.
- When you replace the batteries, replace all with new ones.

Installing the unit on the bicycle

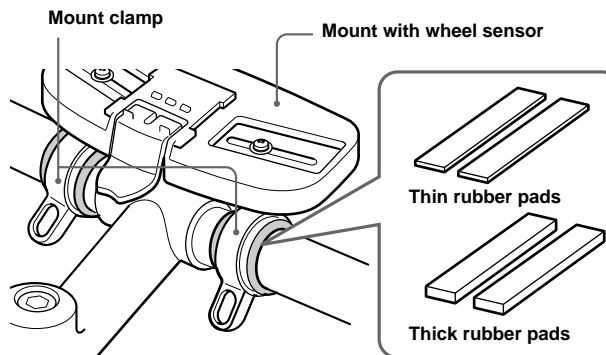
Install the Wheel Magnet

- 1 Remove the screw of the wheel magnet and open.
- 2 Attach the magnet between two spokes of the front wheel with the head of the screw facing inward, and tighten the screw.



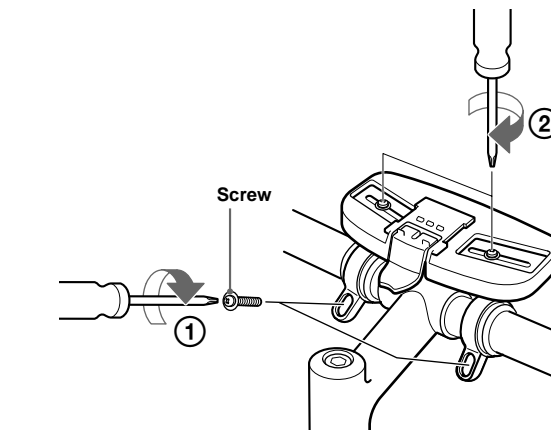
Install the Mount

- 1 Choose the appropriate rubber pads according to the diameter of the handlebar and attach them. Use one or two rubber pads depending on the diameter of the handlebar. You can attach the Mount clamps without the rubber pads if not required.

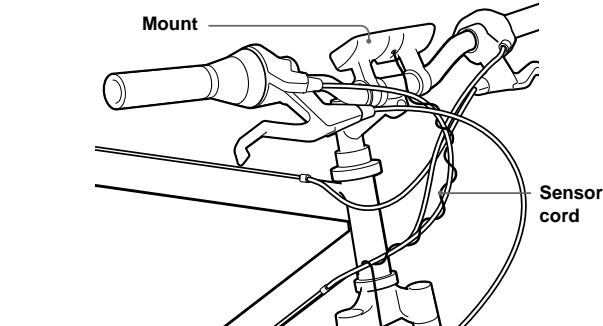


The Mount clamps are adjustable. You can adjust the width of the clamps to fit your handlebar.

- 2 Install the Mount on the rubber pads and secure with the 4 screws.



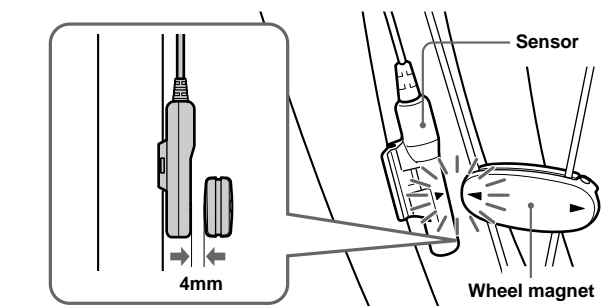
- 3 Wind the sensor cord around the break cable.



Note

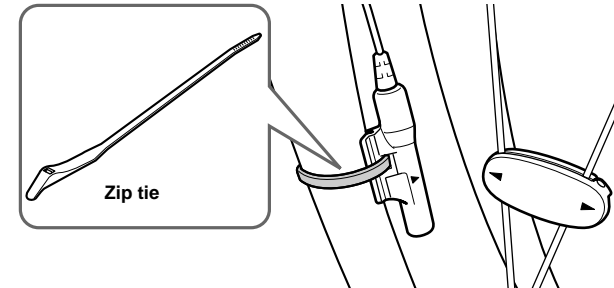
Be sure to allow enough cord slack to ensure full movement and unhindered operation of the handlebar, and not to wind it too loosely as this may interfere with the unit's operation.

- 4 Temporarily attach the Sensor to a fork using the attached Double-sided tape.



- When attaching, align the center of the sensor and that of the magnet (triangle mark).
- Ensure a clearance not exceeding 4mm (except Sensor and Magnet touching) between the Sensor and the Wheel magnet (when aligned).
- Attach the unit on the Mount, and then check the reaction of the sensor by revolving the wheel (See fig. "Install the unit").

- 5 After determining the position of the Sensor, secure it with the zip tie to front fork and cut any surplus. Install the Sensor cord with zip ties such that it does not become tangled with the wheel.

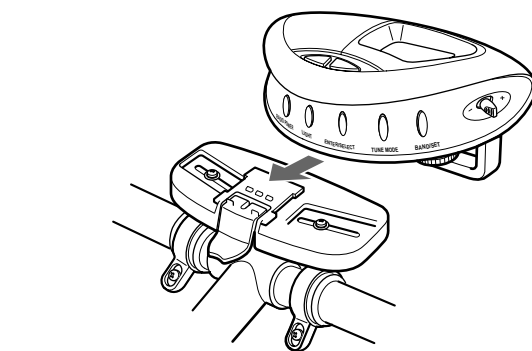


Note

Be careful that the position of the Sensor does not shift when tightening the zip tie.

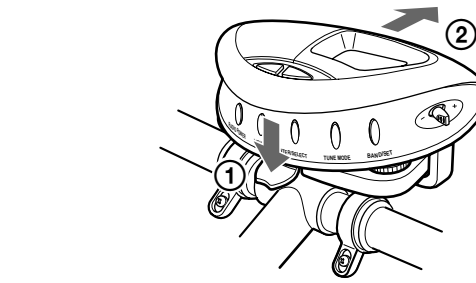
Install the unit

Install the unit on the Mount, sliding from the front until it clicks into position.



Remove the unit

Pull the unit forward while pushing down the lever.



Note

Ensure that the contact points between the Mount and the unit are clean for proper operation.

Caution

For safe and proper use of the cycle-computer, check whether the Mount, the sensor and its cord and the wheel magnet are set properly before riding.

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Portable Audio

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Sony Electronics Inc. ("Sony") warrants this Product (including any accessories) against defects in material or workmanship as follows:

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2. **PARTS:** In addition, Sony will supply, at no charge, new or rebuilt replacements in exchange for defective parts for a period of one (1) year. After the warranty period, you must pay for all parts costs.

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To obtain warranty service, you must take the Product, or deliver the Product freight prepaid, in either its original packaging or packaging affording an equal degree of protection, to any authorized Sony service facility.

This warranty does not cover customer instruction, installation, set up adjustments or signal reception problems.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of, or to any part of the Product, including the antenna. This warranty does not cover damage due to improper operation or maintenance, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by Sony to service the Product. This warranty does not cover Products sold AS IS or WITH ALL FAULTS, or consumables (such as fuses or batteries). This warranty is valid only in the United States.

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or visit the Sony Web Site:
www.sony.com

For an accessory or part not available from your authorized dealer, call:

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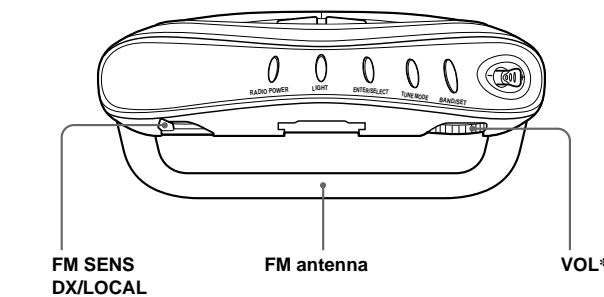
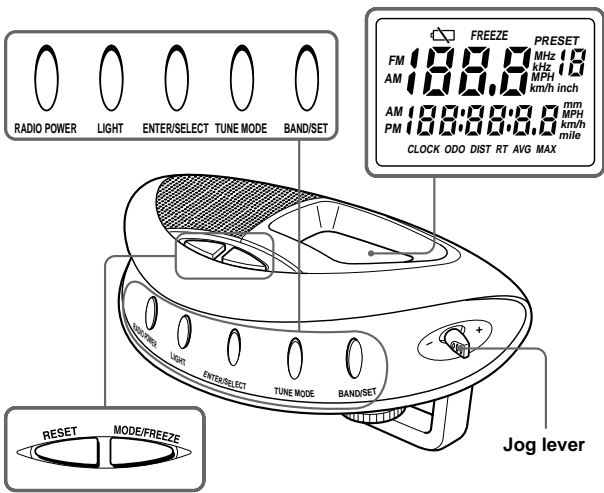
WARNING

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.



* There is a tactile dot beside VOL to show the direction to turn up the volume.

For the initial setting (with the radio off)

The cycle-computer needs initial set up before using. If the wheel size you set into the cycle-computer is not suitable for using actual wheel size, it is not possible to measure speed and distance correctly.

- Press and hold BAND/SET for a few seconds to select “mile” or “km”.

“mile” flashes in the display.



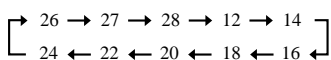
Each press of the **ENTER/SELECT** toggles between “mile” and “km”. The unit of speed is “MPH” for miles, and “km/h” for kilometers. Select and show the desired unit.

- Press BAND/SET to set a wheel size.

The wheel size flashes.



Press **ENTER/SELECT** repeatedly to select your wheel size (inches). Each press changes the display as follows.



Note
The “mm” values shown on the display are approximate. Adjust the accurate size of the wheel using Jog lever + or - after measuring diameter of your wheel. It is recommend to set the wheel size in “mm” because the cycle-computer calculates in “mm”. If you set the wheel size in “mm”, the range is from 300 to 750 mm.

Push and hold Jog lever to change the value rapidly.

- Press BAND/SET.
“ODO” appears in the display, and the last digit of the total distance (odometer) flashes.

If you do not change the odometer, jump to step 4.

To change the total distance

You can change the default setting of the total distance (odometer) using Jog lever + or - (to increase or decrease) and **ENTER/SELECT** (to select another digit).

- Press BAND/SET again.
The initial setting is completed.

- Tips**
- When you choose the “mile”, the range is from 0.0 to 99 999.9 miles.
 - When you choose the “km”, the range is from 0.0 to 159 999.9 kilometers. And the maximum digit range is from 0 to 15.

- Notes**
- If you do not make any selections, for within about 65 seconds, or do press **TUNE/MODE** button during the initial setting mode, the setting mode will be canceled and the unit returns to the previous mode.
 - If you press the **LIGHT** button for within about 65 seconds during the initial setting mode, the setting mode will be extended.
 - If you cancel during initial setting mode, the value of the unit, wheel size and total distance entered will be erased. The unit will revert to the previous setting.
 - The cycle-computer will not activate during the initial setting mode.
 - If you press **RADIO POWER** to turn on the unit during the initial setting mode, the mode is canceled and the radio will activate.
 - If you change the unit in the initial setting mode, the values showed in the total distance (odometer) setting mode will be automatically converted into the new setting unit. However, when you convert the unit from miles to kilometers, any value over 159 999.9km is shown as 159 999.9km.

Displaying data

While cycling, current speed is always displayed and updated every second.



The highest speed that can be displayed is 124.2 MPH (199.9 km/h) and remains displayed beyond that speed. Below 2.5 MPH (4.0 km/h), 0.0 is displayed.

Displaying the odometer

Press **MODE/FREEZE** repeatedly until “ODO” appears. The current total distance is displayed.



Note
If 99 999.9 miles (160 934.3 km) is exceeded, the odometer returns to zero.

Displaying trip distance

Press **MODE/FREEZE** repeatedly until “DIST” appears. At the point you want to start calculating the distance, perform the zero reset operation. For details on how to perform the zero reset operation, refer to “Performing the zero reset.”



Note
If 9 999.9 miles (16 093.3 km) is exceeded, the trip distance returns to zero.

Displaying riding time

Press **MODE/FREEZE** repeatedly until “RT” appears. The “Hour: Minute: Second” is indicated in the display. At the point you want to start calculating riding time, perform the zero reset operation. For details on how to perform the zero reset operation, refer to “Performing the zero reset.”



Riding time is updated every second. When one wheel revolution takes over a second, riding time is updated when the magnet passes the sensor. If the interval at which the magnet passes the sensor is more than 1 minute, the calculation is canceled.

Note
If the displayed “99:59:59” is exceeded, riding time returns to zero.

Displaying average speed

Press **MODE/FREEZE** repeatedly until “AVG” appears. Average speed is calculated according to trip distance and riding time.



Displaying maximum speed

Press **MODE/FREEZE** repeatedly until “MAX” appears. The maximum speed recorded to date is displayed.



Note
If either trip distance or riding time returns to zero, trip distance, riding time and average speed simultaneously return to zero.

Performing the zero reset

The zero reset operation of trip distance, riding time and average speed are performed simultaneously and cannot reset individually.

- Press MODE/FREEZE to display either “DIST,” “RT” or “AVG.”

- Press and hold RESET for a few seconds.
“DIST,” “RT” and “AVG” flash.



- Press RESET again.
The zero reset operation is completed, and “DIST,” “RT” and “AVG” are set to zero.

You can reset maximum speed only. Select “MAX” in step 1, followed by step 2 and 3.

Setting Freeze mode

You can deactivate odometer calculation, trip distance, riding time, average time, and maximum speed (except for current speed) with the Freeze mode.

- Press and hold MODE/FREEZE for a few seconds.
“FREEZE” lights up, and the cycle-computer enters Freeze mode.

To cancel Freeze mode, press and hold **MODE/FREEZE** for a few seconds. (“FREEZE” is no longer displayed.)

Standby mode

When your bicycle is stopped with the radio off, and no button is pressed for more than 10 minutes, the cycle-computer enters Standby mode, and only the current time is displayed.

To cancel Standby mode

When the unit is attached to the Mount

At the point where you start and the magnet passes the sensor, or you press any active button, Standby mode is canceled. (The display returns to the previous one before entering Standby mode.)

When the unit is not attached to the Mount

When you attach the unit to the Mount or press any active button, Standby mode is canceled.

Note

If the cycle-computer enters Standby mode with Freeze mode activated, Freeze mode is not canceled.

Using the Backlight

Press **LIGHT**.

The backlight will light for 10 seconds. If any buttons are pressed while the backlight is on, the backlight will turn off 10 seconds after pressing the button.

Setting the Clock

The clock time display of this unit is a 12-hour system. When the batteries are first installed, “AM 12:00” flashes and “CLOCK” turns on in the display.

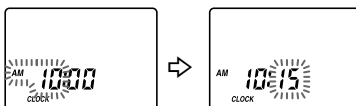
- Press RADIO POWER to turn off the power.
- Press MODE/FREEZE repeatedly until “CLOCK” appears.
- Hold down ENTER/SELECT for more than 2 seconds until “AM 12” starts flashing.



- Push the Jog lever towards + or – to adjust the hour, then press ENTER/SELECT.

The beep sounds and the minute setting starts to flash.

If you hold down the Jog lever towards + or –, the digit changes rapidly. Midnight is indicated as “AM 12:00” and Noon is indicated by “PM 12:00.”



- Repeat step 4 above to adjust the minutes.

“:” starts flashing and the clock starts operating.

To set the current time exactly to the second, adjust the minute setting and then press **ENTER/SELECT** to synchronize it with a time signal (such as the telephone time signal).

Note

If you do not push the Jog lever towards + or –, or **ENTER/SELECT** within about 65 seconds, the clock setting mode will be canceled.

Changing AM Channel Step

The AM channel step differs depending on area. The channel step of this unit is factory-set to 10 kHz. Change the settings as shown below to be able to listen to the radio.

Area	Channel step
North and South American countries	10 kHz
Other countries/regions	9 kHz

Note

When the AM channel step is changed, only the preset stations on the AM band will be initialized.

- Press RADIO POWER to turn off the power.
- While holding down ENTER/SELECT, keep pressing RADIO POWER for more than 5 seconds.
Two short beeps sound, and the AM channel step will change and “9” kHz (or “10” kHz) will light up for about 2 seconds in the display. If you proceed to step 2 again, the channel step changes again.

Playing the Radio

— Manual Tuning

- Press RADIO POWER to turn on the power.
- If “PRESET” is displayed, press TUNE MODE so that “PRESET” disappears.



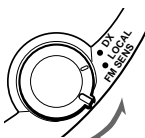
Pressing **TUNE MODE** will switch over between manual tuning mode and preset tuning mode.

- Press BAND/SET to select the band.
Each press changes the band.
- Push the Jog lever towards + or – to select the desired frequency.
If you hold down the Jog lever towards + or –, the frequency changes rapidly.
When the frequency matches the broadcast frequency, the broadcast will be received.
- Adjust the volume using VOL.
To turn off the radio, press **RADIO POWER**.

Improving Radio Reception

FM: Set **FM SENS** to **LOCAL** if interference is prevalent when radio wave intensity is dramatically stronger.

Under normal conditions, set to **DX**.



Presetting your Favorite Stations

— Preset Tuning

You can preset up to 5 AM stations, and 10 FM stations. You can also delete a preset station, whether factory-set or preset yourself.

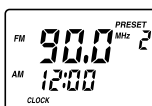
Presetting a Station

- Follow steps 1 to 5 in “Playing the Radio” and manually tune in to the station you wish to preset.
- Hold down ENTER/SELECT until the preset number flashes.
A preset number with no station will flash.
When all preset numbers have assigned stations (factory-set), “1” flashes and “PRESET” appears.



- Push the Jog lever towards + or – to select the number you wish to preset, then press ENTER/SELECT.
If a preset number you select with the Jog lever has an assigned preset station, “PRESET” appears; if no station is assigned, only the number flashes. When you press **ENTER/SELECT**, the selected preset number lights up in the display.

Example: Preset number 2, FM 90.0 MHz



To preset another station, repeat the above steps.

To change a preset station, preset a new station. The previous station will be canceled.

Note

If you do not perform a preset operation for about 65 seconds, presetting mode will be canceled.

Tuning in to a Preset Station

- Press RADIO POWER to turn on the power.
- Press BAND/SET to select the band.
- Press TUNE/MODE so that “PRESET” and preset number appear.
- Push the Jog lever towards + or – to select the desired preset number.
- Adjust the volume using VOL.
To turn off the radio, press **RADIO POWER**.

Note

If you hold down **TUNE/MODE** for more than 2 seconds, the unit enters the preset station deleting mode. Press **TUNE/MODE** again to return to the previous mode.

Deleting a Preset Station

- Follow steps 1 and 3 in “Tuning in to a Preset Station”.
- Push the Jog lever towards + or – to select the preset number to be deleted.
- Hold down TUNE/MODE for more than 2 seconds until “PRESET”, “DEL” and the preset number flash.



preset number to be deleted

- While the letters and the preset number are flashing, press ENTER/SELECT.
The station set to the preset number just before the deleted station will be displayed.
To delete other stations, repeat steps 2 to 4.
If all the preset stations are deleted, “PRESET -” appears in the display.

To cancel deleting, press **TUNE/MODE** while “PRESET”, “DEL” and the preset number are flashing.

Playing the Radio on the Mount

When the current speed is displayed (for example, after having installed the unit on the Mount), pressing a button or the Jog lever (to perform a radio operation) only displays the station frequency and/or current preset number. From this display, press the **BAND/SET**, **TUNE/MODE** or Jog lever + or - to perform the desired radio operation.

Holding down Jog lever + or -, **ENTER/SELECT** or **TUNE/MODE** while the current speed is displayed

- Jog lever + or - :
- Pushing the Jog lever displays the current frequency. Pushing and holding the Jog lever changes the frequency or preset number.
- ENTER/SELECT** :
- Pressing this button displays the current frequency. Pressing and holding selects the Station-presetting mode.
- TUNE/MODE** :
- Pressing this button displays the current frequency. Pressing and holding selects preset station deleting mode in preset tuning mode. In manual tuning mode, holding down has no effect.

Notes

- If you perform a radio operation once in the current speed display and do not operate the radio again within 5 seconds, the display automatically returns to the current speed indication.
- When the radio is turned off, the current speed display appears. When the radio is turned on, the current frequency is displayed. If you do not perform any operation within 5 seconds, the display returns to the current speed.
- While presetting mode or deleting mode, the current speed display will not appear. After completing or canceling the presetting/deleting mode, the current speed display appears after 5 seconds.