

UMS-RT-2500
Third Edition
March 2007

Summary Operating Manual for ***Model RT-2500***

Fixed Type VHF Marine with DSC,
Submersible & 15 Key Microphone



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Jmc RT-2500

The Jmc **RT-2500** VHF marine radio has been designed to give you a rugged, reliable instrument that will provide you with years of trouble-free service.

With proper care and maintenance, your marine radio could outlast your present vessel and serve you well on-board. The full features and flexibility designed into this quality transceiver will prevent it from becoming obsolete regardless of changes in craft or geographic locations.

The **RT-2500** is of all solid-state design with conservatively rated, rugged components and materials compatible with the marine environment. The transceiver utilizes a number of gaskets, sealing rings, waterproof membranes, and other sealants to effect a waterproof housing for protection of the electronics. It meets the most stringent IPX7 waterproof specification. The unit may be mounted in any number of convenient locations on your vessel by utilizing the optional flash mount bracket (Black - FMB322B).

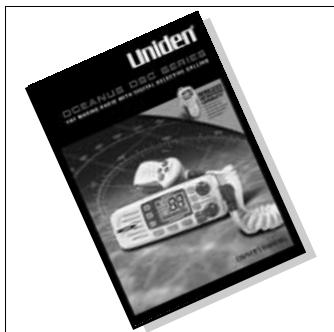
You are encouraged to thoroughly read the rest of this Operating Guide to acquaint yourself with the characteristics and operation of your transceiver so that you can contribute to the longevity of your investment.

Keep your receipt as proof-of-purchase in case warranty service is required.

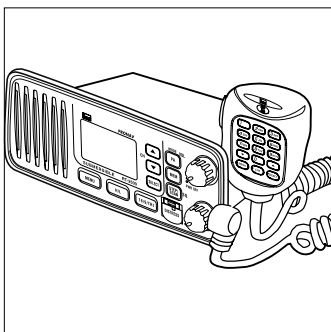
Features, specifications, and availability of optional accessories are all subject to change without notice.

Note: **RT-2500** meets IPX7 requirements.

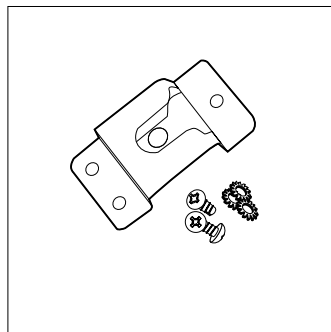
Included with your RT-2500



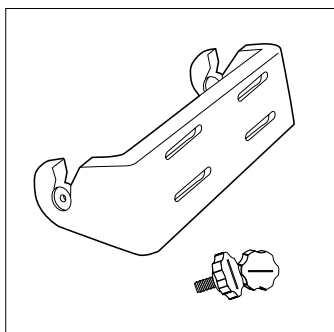
RT-2500
Owner's Manual



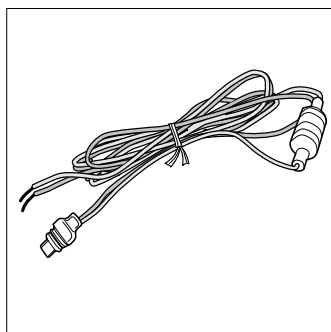
RT-2500 Radio



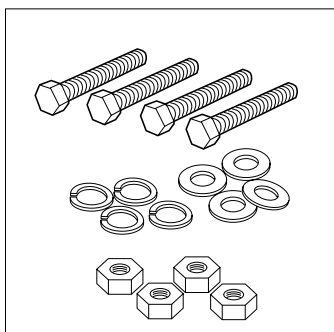
Microphone Hanger
and Screws



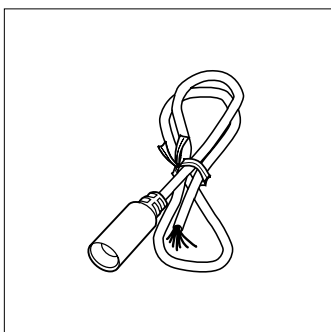
Mounting Bracket
and Knobs



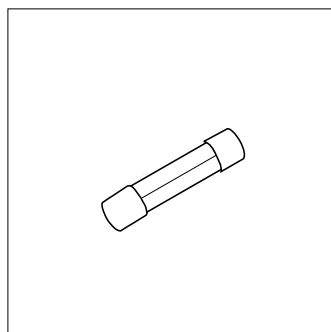
DC Cord



Mounting Hardware



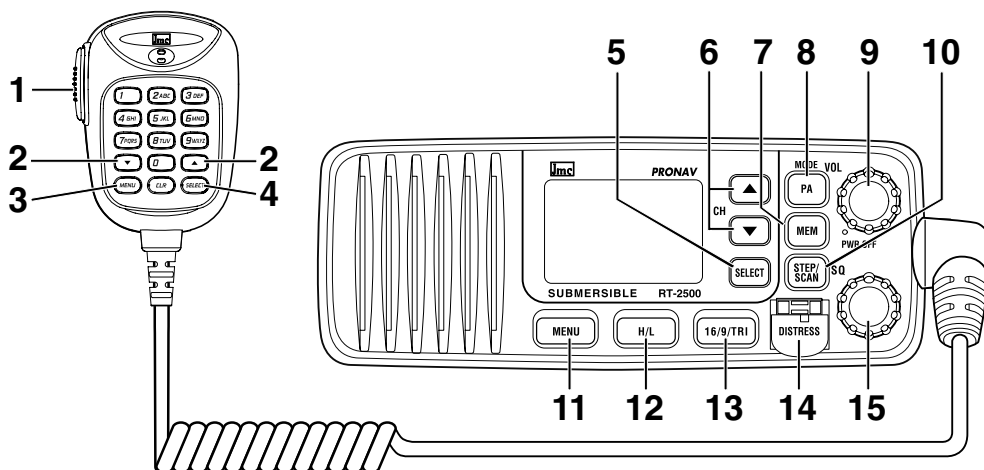
Accessory Cable



Spare Fuse
250V 6A

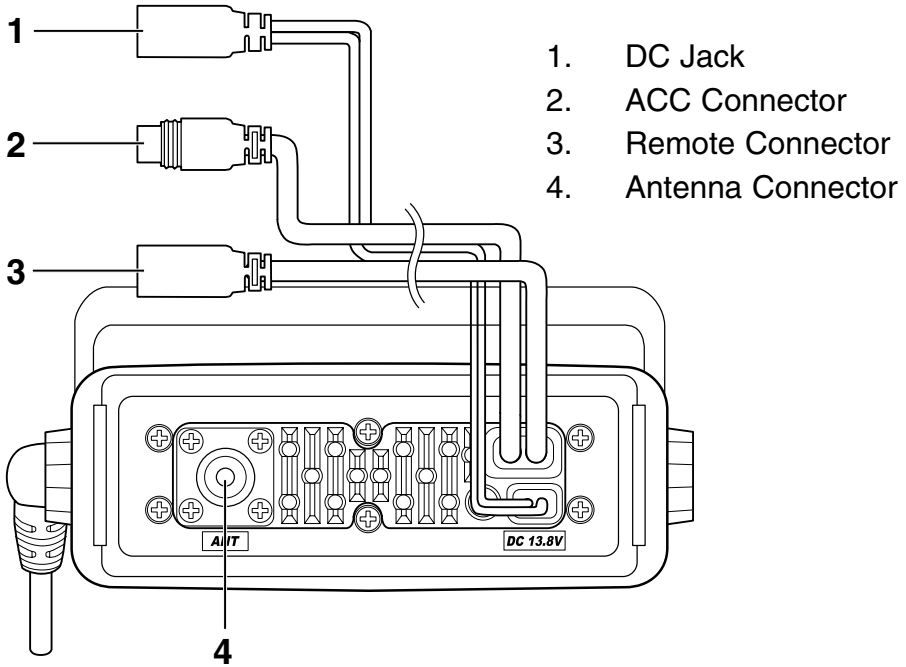
Controls and Indicators

Front panel/Microphone

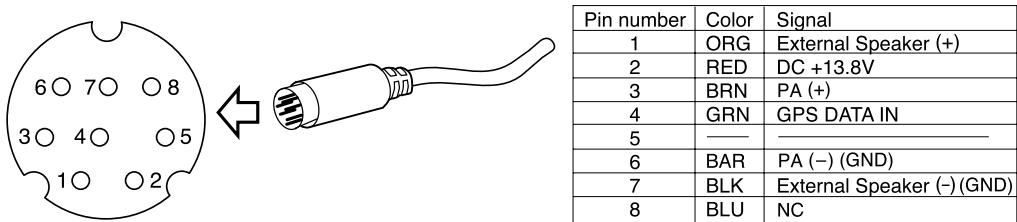


1. **PTT Switch** - Press to transmit and release to receive.
- 2.6. **CHANNEL/▲/▼**- These keys are used to change the channel number up/down. These buttons are also used to move the cursor in Menu mode.
- 3.11. **MENU** - Press this key to enter the Menu mode.
- 4.5. **SELECT** - In the Menu mode this is used to select the menu options.
10. **STEP/SCAN** - Press this key to activate the step operation. Every time this key is pushed, the radio will step to the next channel that has placed into Memory. Pressing and holding this key for 2 seconds will activate the channel scan feature.
7. **MEM** - Pressing will place the currently selected channel into Memory.
8. **PA/MODE** - Press this key to enable the PA (Public Address) feature. Pressing and holding this key will switch between Inland Waterway Mode and Seagoing mode.
9. **PWR/VOL (On/Off/Volume)** - Turns the unit On or Off and adjusts the speaker volume.
12. **HI/LO** - Press this key to change the transmit power to either High or Low.
13. **16/9/TRI** - Press this key instantly change to Channel 16, Channel 9 or current channel. Pressing and holding this key for 2 seconds will activate the triple Watch Feature.
14. **DISTRESS** - Press this key to send a signal of distress in case of emergency.
15. **SQ** - Rotate this knob eliminate background noise when a signal is not being received.

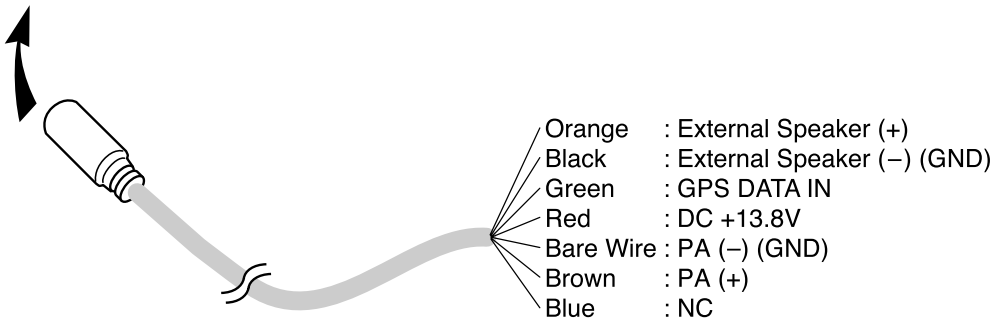
Rear Panel Connectors



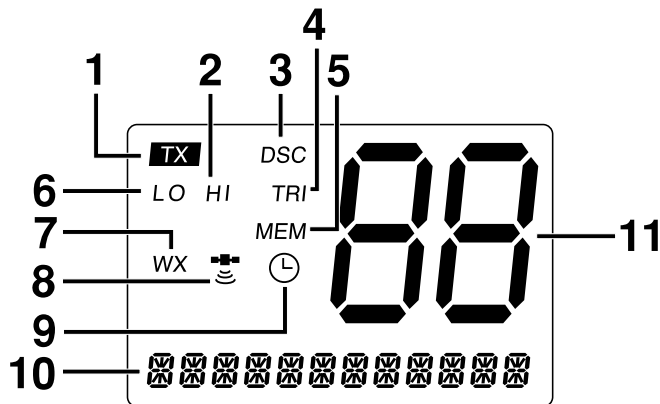
ACC Connector



To RT-2500

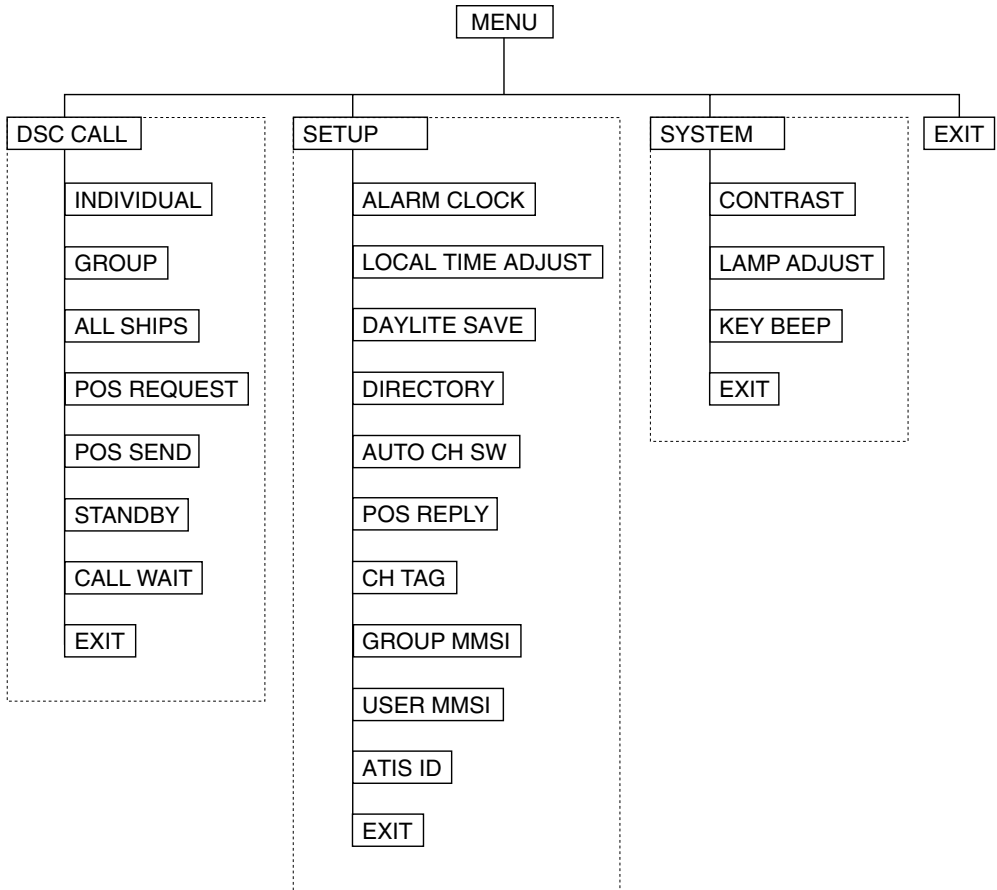


Note: DC13.8V and GND are for GPS ANT.



1. **TX** (Transmit) - Indicates transmitting.
2. **HI** (High) - Indicates transmit output is 25 Watts.
3. **DSC** - Indicates the radio is in the DSC mode.
4. **TRI** (Triple Watch) - Indicates Triple Watch Mode is in effect.
5. **MEM** (Memory) - Indicates Memory Scan Mode status for each channel selected.
6. **LO** (Low) - Indicates transmit output is 1 Watt.
7. **WX** - It blinks when the radio in the Inland Waterway mode.
8. **GPS Icon** - Indicates the following GPS receiving statuses;
 - Blinking: No GPS receiver is connected at power-up or no valid position fix is available for more then 4 hours continuously.
 - Animating: GPS receiver is receiving valid position data.
 - Stationary: GPS receiver is waiting for a Valid position fix.
 - None: GPS receiver stops receiving data.
9. **Alarm Icon** - It appears when the alarm clock is set.
10. **CH TAG** - This area is used for Channel Tag, Menu, and message of DSC, GPS. These messages will continually scroll from right to the left.
11. **Channel Display** - Indicates Channel Number in use.

Flow Chart for Menu Operation



NOTES: "POS SEND", "LOCAL TIME ADJUST", "DAYLITE SAVE", and "ALARM CLOCK" are not displayed in Menu when GPS module is not connected.

When the radio is in one of the following modes: Channel 16/9 mode, Scan Mode, or Triple Watch mode, and the user presses the Menu key, all of these modes are cancelled.

The Menu mode will be cancelled if the radio receives a DSC call or "EXIT" is selected.

Installation

Caution: *The RT-2500 will only operate with a nominal 12 volt negative ground battery system.*

It is important to carefully determine the most suitable location for your radio on your vessel. Electrical, mechanical, and environmental considerations must all be taken into account. You should select the optimum relationship among these considerations.

Keep in mind the flexibility designed into the **RT-2500** so that you can most conveniently use it. Features which should be considered are:

1. The universal mounting bracket may be installed on either the top or bottom of a shelf, on a bulkhead, or for overhead mounting.
2. The REMOTE speaker wires can be used with an auxiliary speaker.
3. All connections are "plug-in" type for easy removal of the radio.
4. Front fire internal speaker allows convenient in-dash mounting using the optional bracket (Black - FMB322B).

Choosing a Location

Some important factors to consider in selecting the location for your **RT-2500**.

1. Select a location that is free from spray and splash.
2. Keep the battery leads as short as possible. Direct connection to the battery is most desirable. If direct connection can not be made with the supplied power lead, any extension should be made with #10 AWG wire. Long extensions should use larger gauge wire.
3. Keep the antenna lead as short as possible. Long antenna leads can cause substantial loss of performance for both receiving and transmitting.
4. Locate your antenna as high as possible and clear from metal objects. The reliable range of coverage is a direct function of the antenna height.
5. Select a location that allows free air flow around the heat sink on the rear of the radio.
6. Select a location well away from the ship's compass. Auxiliary speakers also should be located away from the compass.

Engine Noise Suppression

Interference from the noise generated by the electrical systems of engines is sometimes a problem with radios. The **RT-2500** has been designed to be essentially impervious to ignition noise and alternator noise. However, in some installations it may be necessary to take measures to further reduce the effect of noise interference. All DC battery wires, antenna lead, and accessory cables should be routed away from the engine and engine compartment, and from power cabling carrying high currents.

In severe cases of noise interference, it may be necessary to install a noise suppression kit. Contact your Dealer for more information.

Antenna Considerations

A variety of antennas are available from a number of quality suppliers. It is recommended you draw upon the advice of your dealer in determining a suitable antenna for your vessel and range requirements.

In general, communication range is increased by using a high-gain antenna placed as high as possible above the water line. Antennas should be located away from metal objects. Antennas should not have excessively long coaxial feed cables.

Antenna Selection and Installation

RT-2500 has been designed to accommodate all of the popular marine VHF antennas. However, the selection and the installation of the antenna is the responsibility of the user or installer.

The antenna used with this radio should be installed using the following guidelines to insure a suitable distance between the antenna and persons close by.

Small whip antennas (3 dB) or smaller should be installed keeping at least three feet separation distance between the radiating element and people.

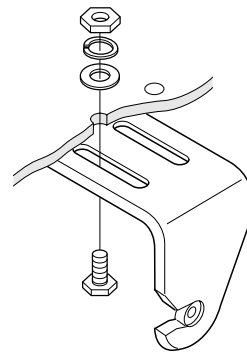
Larger antennas (6 dB or 9 dB) should be installed keeping at least a six foot separation distance.

No person should touch the antenna or come into the separation distance when the radio is transmitting.

Installing the RT-2500

After you have carefully considered the various factors affecting your choice of location, position the radio (with the bracket, microphone, power cord, antenna and any auxiliary cables installed) into the selected location to assure there is no interference with the surrounding items. Mark the location of the mounting bracket. Remove the bracket from the radio and use it as a template to mark the holes to be drilled for the mounting hardware. Drill the holes and mount the bracket with hardware compatible with the material of the mounting surface.

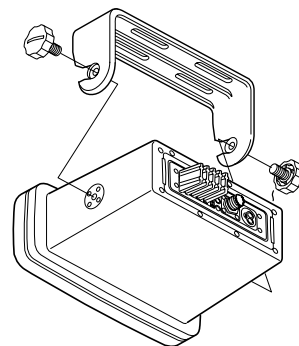
Note: *This HEXAGON HEAD BOLT is only for mounting the bracket with hardware. Do not use it for installing the radio in the mounting bracket.*



Connect the red wire of the supplied power cord to the positive (+) battery supply. Connect the black wire of the power cord to the negative (-) battery supply. The power cord is equipped with a fuse to protect the radio. Use only a six (6) ampere fast blow fuse for replacement. Connect the power cord to the keyed connector on the power "pigtail".

Connect the antenna and all other auxiliary cables and accessories. Install the radio in the mounting bracket and connect all cables and accessories to the appropriate jacks and connectors.

Note: *Do not use any other mounting knobs than the ones enclosed. Do not insert the knobs without attaching the bracket.*

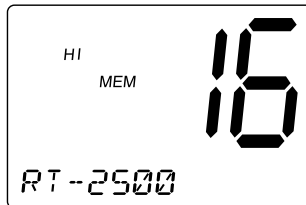
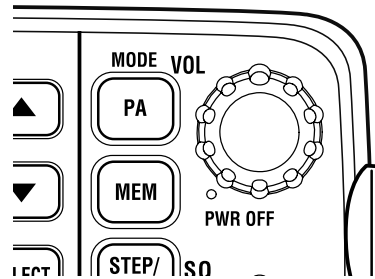


Operation

POWER On/Off

Turn the unit On by rotating the **PWR/VOL** control clockwise.
Adjust the volume to a comfortable level.

When you turn the unit On, you will hear a beep, and the greeting message below appears on the LCD for 3 seconds.



Note: When you turn On the radio for the first time after purchase, the channel 16 will appear on the LCD.

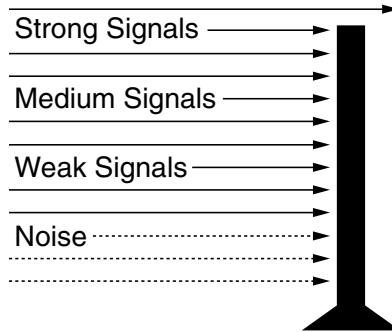
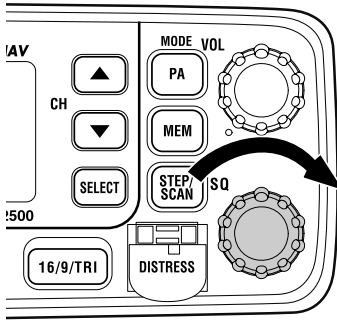
Last Channel Memory

The **RT-2500** memorizes the last channel selected before you turn Off the radio. For example, if you turn Off the radio on CH 12, it will be on that channel when turned back On.

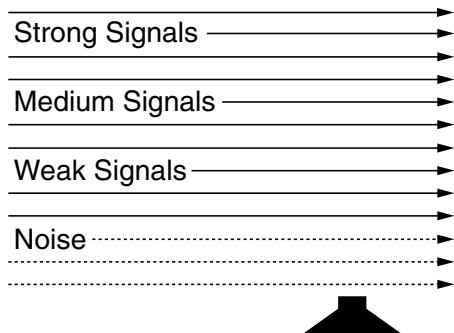
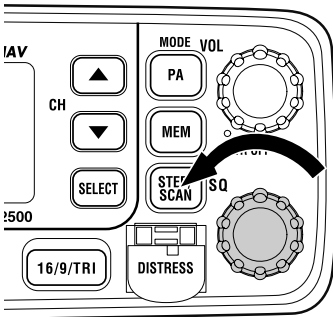
Note: In order for the last channel to be memorized, you must have the radio on that channel for 3 seconds.

SQUELCH

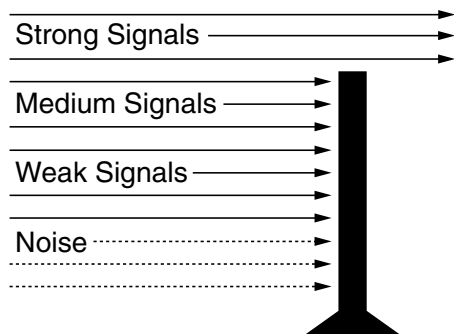
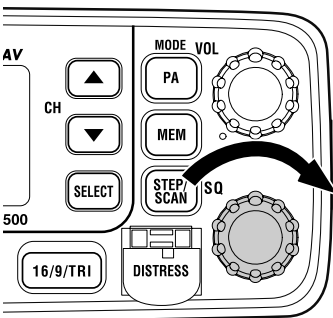
Turn **SQ** fully clockwise. This raises the “Squelch Gate” so high that only very strong signals can get through.



Turn **SQ** fully counterclockwise until you hear a hiss. This lowers the “Squelch Gate” so that everything gets through - noise, weak signals, and strong signals.



Turn **SQ** back clockwise until the hiss stops. Now the “Squelch Gate” allows only strong signals through.



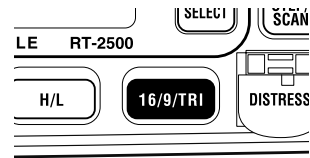
COAST GUARD CHANNEL 16/CHANNEL 9 COMMUNICATIONS

To access Coast Guard Channel 16 or Channel 9 communications, press **16/9/TRI**. You can access Coast Guard 16 CH instantly while tuned to another channel. Press **16/9/TRI** again for Channel 9 Calling communications. Press **16/9/TRI** a third time to return to the channel selected prior to accessing Coast Guard Channel 16/Channel 9 communications.

The display will indicate the selected channel.

To cancel Coast Guard Channel 16/Channel 9 communications:

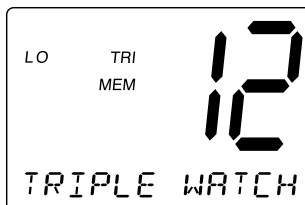
- Press **16/9/TRI** until the previous channel setting appears.
- or--
- Press **CH ▲, ▼** or **STEP/SCAN**.



TRIPLE WATCH

Triple Watch monitors Channel 16, Channel 9, and the current Marine Channel or Weather Channel.

To activate Triple Watch, press and hold **16/9/TRI** for 2 seconds. **TRI** appears on the LCD, indicating Triple Watch mode is in effect. If a signal is received on either Channel 16 or Channel 9, the radio remains on that channel until the signal ends.



Press and hold **16/9/TRI** for 2 seconds to cancel the Triple Watch mode.

Note: While in Triple Watch mode, you can change the currently selected channel using **CH ▲** and **▼**. A momentary press of the **16/9/TRI** button interrupts Triple Watch mode and remains on channel 16, or on channel 9 if you press **16/9/TRI** once more. To return to the Triple Watch mode, simply press the button again.

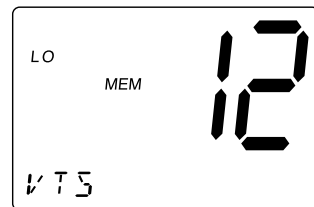
MANUAL TUNING

To manually select a channel, press **CH ▲** or **▼**. Communication channels are located on channel 01-28 and 60-88.

MEM (Entering channel numbers into Memory Scan)

You can enter channels into Memory Scan for instant scanning at any time. When a channel is selected for Memory Scan, **MEM** appears on the LCD display.

To enter a channel into Memory Scan, select the channel you want to store by using **CH ▲** and **▼**, and then press **MEM**. The channel is stored in Memory Scan and **MEM** appears on the LCD display.



To cancel the channel in Memory, press **MEM**.

Triple Watch Scan

To turn Triple Watch Scan On, press and hold **STEP/SCAN** for 2 seconds. While the current channel is scanned, Channel 16 and Channel 9 are also scanned every 2 seconds. Then **TRI** appears.

Normal Scan

Normal Scan is performed only when the memory CH is registered.

To turn Normal Scan On, press and hold **16/9/TRI** for 2 seconds in Triple watch Scan mode. Although Memory CH is scanned, Channel 16 and Channel 9 are not.

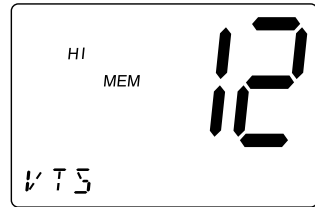
TRANSMITTING

Note: Channel 70 is DSC only. All the available marine channel are located on page 49.

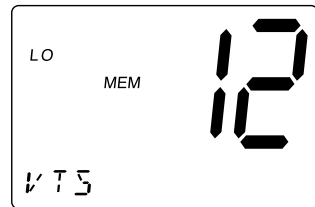
SETTING TX OUTPUT

Caution: It is important to remember to use the LO position in port or for short range communications.

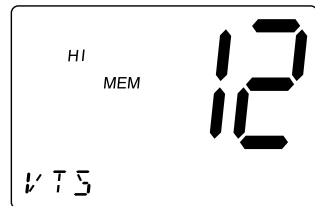
1. When you turn the radio On for the first time, the unit is automatically set to transmit at 25 watts (HI).



2. Press **HI/LO** to change the transmitter output to 1 watt (LO).



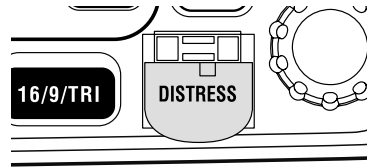
3. Press **HI/LO** again to change back to 25 watts (HI).



Note: Each time the **HI/LO** is pressed a short tone sounds. When the channel is set as LO power channel, you can transmit at 25 watts (HI) by pressing and holding **HI/LO** during the call (except for CH75 and CH76).

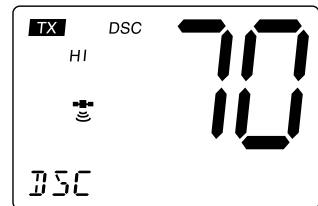
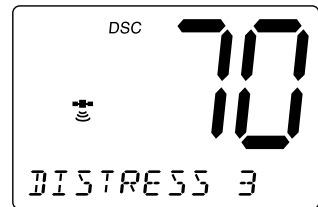
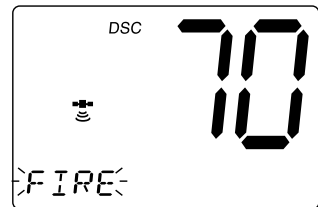
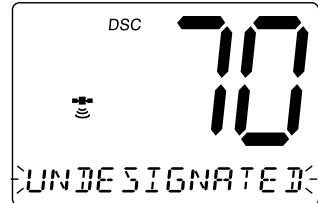
DISTRESS

Note: You must set the user MMSI in order to send a Distress call. Please see page 42 to set the MMSI.



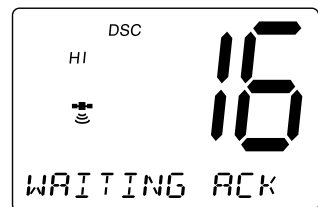
This feature will allow you to transmit a Distress call.

1. Press QUICKLY **DISTRESS**.
UNDESIGNATED appears and starts blinking. You can skip steps 1 and 2 WHEN IMMEDIATE HELP IS NEEDED.
2. Select the type of distress you desire by using **CH ▲** and **▼** (fire, flooding, collision, etc.). You may skip this step if you cannot specified the type in a hurried situation.
3. Press and hold **DISTRESS** for 3 seconds. The radio starts counting down. NEVER USE THE DISTRESS CALL WHEN YOUR SHIP OR PERSON IS NOT IN AN EMERGENCY.
4. Upon elapse of the 3 second countdown period, the selected distress call is transmitted with high power.



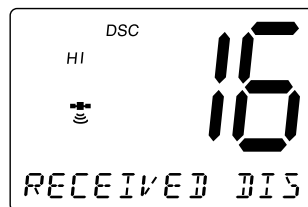
Note: TX appears when a Distress call is transmitted. Make sure the Distress call has been transmitted by checking the status of TX.

5. The Distress call is transmitted and it waits for about 210 - 270 seconds. This is continued internally. After the Distress call has been sent, the Distress alert will sound every other second, and it also "shadow-watches" for a transmission between CH16 and CH70 until an acknowledgment signal is received from the Coast Guard shore station.



To cancel the Distress call, press **16/9/TRI**.

6. When the radio receives a Distress call, the following screen appears. If an acknowledgment is not received, the Distress call is repeated until an acknowledgment is received from the Coast Guard shore station.



- Notes:**
- If you press and hold **DISTRESS** for 3 seconds instead of just pressing **DISTRESS** at step 1, the radio will transmit a Distress call with **UNDESIGNATED** as the default setting.
 - If the radio receives a Distress call, it will be displayed on the LCD display. An emergency alert will sound. The name will be displayed if it is the name registered in the directory. Otherwise, sender's MMSI is displayed. Latitude, longitude, and time information will also be displayed if the GPS module is carried in the vessel that transmitted a DSC Distress call.

MARINE DISTRESS PROCEDURE

Speak slowly – clearly – calmly.

1. Make sure your radio is On.
2. Tune to Channel 16.
3. Press the PTT button on the microphone and say: "MAYDAY – MAYDAY – MAYDAY."
4. Give your ship ID.
5. Say "MAYDAY [your ship name]."
6. Give your location: (what navigational aids or landmarks are near).
7. State the nature of your distress.
8. Give the number of persons aboard and the conditions of any injured.
9. Estimate present seaworthiness of your vessel.
10. Give a brief description of your vessel (meters, type, color, hull).
11. Say: "I will be listening on Channel 16".
12. End message by saying "THIS IS [your ship name or call sign] OVER."
13. Release the PTT button and listen. Someone should answer. If not, repeat call, beginning at Item 3 above.

Menu Operation

1. DIGITAL SELECTIVE CALLING (DSC)

Digital Selective Calling is a process of establishing a radio call, it has been chosen by the International Maritime Organization (IMO) as an international standard for establishing VHF, MF and HF radio calls. Digital Selective Calling has also been selected as part of the Global Maritime Distress and Safety System (GMDSS).

This service will let you instantly send a Distress call with GPS position (when optional GPS receiver is connected to the **RT-2500**) to the Coast Guard and other vessels within range of the transmission.

DSC will also let you initiate or receive distress, urgency, safety, position information and routine calls to or from another vessel outfitted with a DSC transceiver.

See the directory section for instructions on how to setup the directory of names.

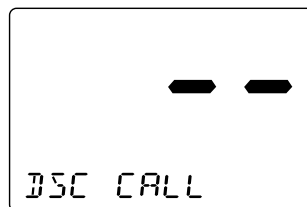
- Note:**
- Position **SEND** and **ALARM CLOCK** will not be displayed if GPS is not connected.
 - Refer to page 7 for the flow chart of Menu Operation.

1. Press **MENU** to enter Menu Operation.

2. Press **SELECT** to enter DSC CALL.

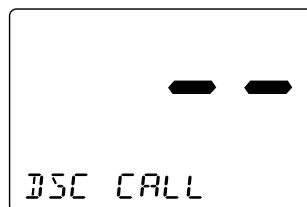
DSC CALL has 7 options as follows.

To exit, select EXIT.

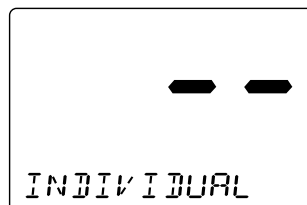


1-A. INDIVIDUAL

1. Press **SELECT** at DSC CALL.

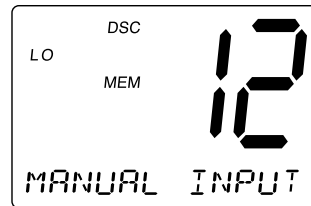


2. **INDIVIDUAL** appears.
Press **SELECT**.

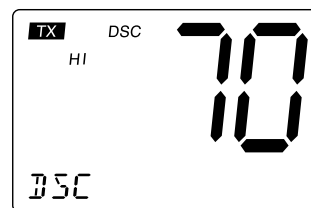
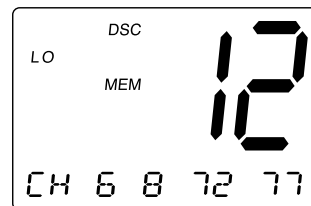


3. Select **MANUAL INPUT** or individual you want to contact using **CH ▲** and **▼**, then press **SELECT**.

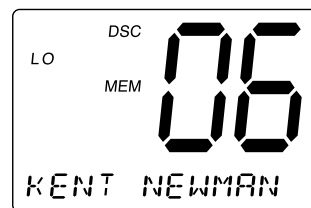
When you select **MANUAL INPUT**, you can contact the person who is not registered in the directly. Using the number key pad on the mic, enter the ID. Press **CH ▲** to move the cursor to the right, and **CH ▼** to the left. When you finish entering the last digit, press **SELECT**.



4. Select a response channel using **CH ▲** and **▼**. Press **SELECT** to transmit the individual call.

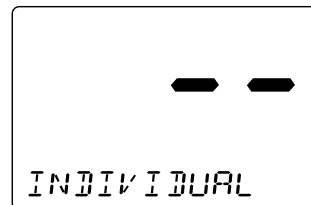


5. When you receive the individual acknowledgment successfully, **COMPLETED** appears. Both radios tune to the selected channel. You are now ready to transmit on that channel.



1-B. GROUP

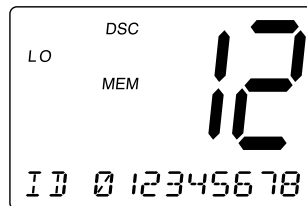
1. Press **SELECT** at **DSC CALL** (To enter **DSC CALL**, see page 18). **INDIVIDUAL** appears.



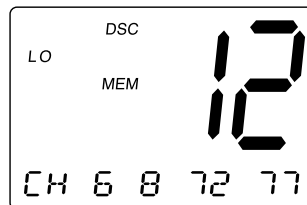
2. Press **CH** ▼ once to select **GROUP**.



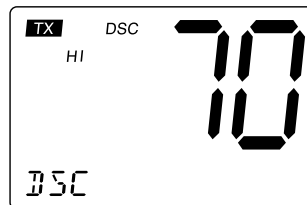
3. Press **SELECT**. The MMSI code appears.



4. Press **SELECT** and select a response channel using **CH** ▲ and ▼.

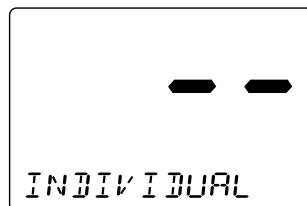


5. Press **SELECT** to transmit the group call.

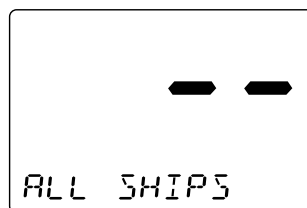


1-C. ALL SHIPS

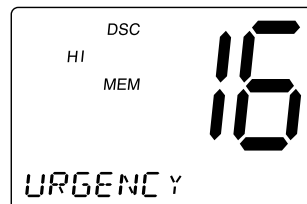
1. Press **SELECT** at **DSC CALL** (To enter **DSC CALL**, see page 18). **INDIVIDUAL** appears.



2. Press **CH** ▼ twice to select **ALL SHIPS**.

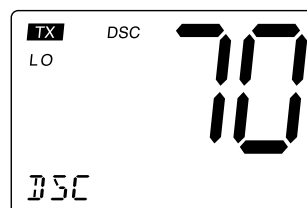


3. Press **SELECT**. URGENCY appears.



4. Select the category of your call using **CH ▲** and **▼** (URGENCY, SAFETY, EXIT).

5. Press **SELECT** to transmit the ALL SHIPS DSC signal.
When sending either an URGENCY or SAFETY message, all radios will automatically move to channel 70 until all of the data is received.



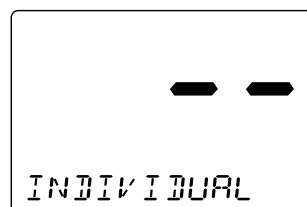
6. After selecting URGENCY or SAFETY ALL SHIPS call is transmitted, the radio will switch to Channel 16. You should wait a few minutes before transmitting the ALL SHIPS call information.



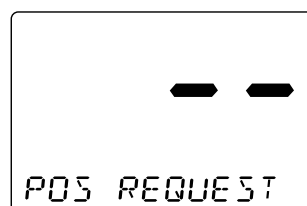
1-D. POSITION REQUEST

This radio has the ability to request the position of an individual vessel that is registered in the DIRECTORY.

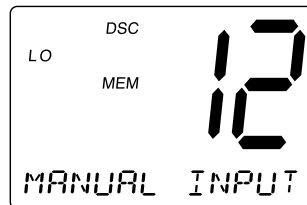
1. Press **SELECT** at DSC CALL (To enter DSC CALL, see page 18).
INDIVIDUAL appears.



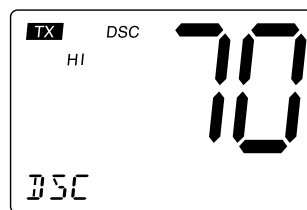
2. Display POS REQUEST using **CH ▲** and **CH ▼**, then press **SELECT**.



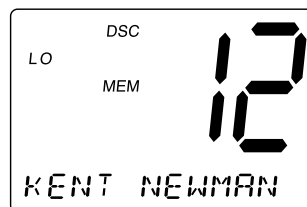
3. Select the **MANUAL INPUT** or individual you want to request the position using **CH ▲** and **▼**, then press **SELECT**. When you select **MANUAL INPUT**, you can contact the person who is not registered in the directly. Using the number key pad on the mic, enter the ID. Press **CH ▲** to move the cursor to the right, and **CH ▼** to the left.



4. When you finish entering the last digit, press **SELECT** to transmit the position request call.



5. When the called vessel sends the position information, time and position appears followed by the individual. You can see the time and the position.



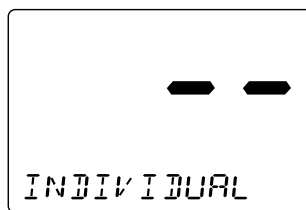
Note: *The requested radio must have the ability to transmit the position information (such as having a **RT-2500** radio).*

1-E. POSITION SEND

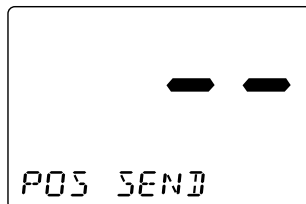
This radio has the ability to send the position of your vessel to another vessel using a VHF marine radio equipped with DSC.

Note: *Position send is only available when it is connected to the GPS.*

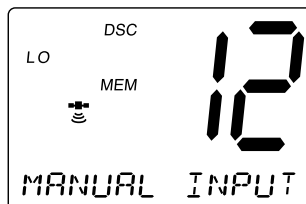
1. Press **SELECT** at DSC CALL (To enter DSC CALL, see page 18). INDIVIDUAL appears.



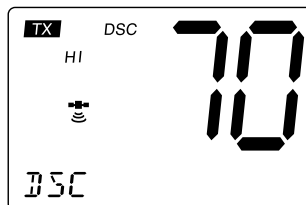
2. Display POS SEND using **CH ▲** and **CH ▼**, then press **SELECT**.



3. Select MANUAL INPUT or individual you want to send your position information using **CH ▲** and **▼**, then press **SELECT**. When you select MANUAL INPUT, you can contact the person who is not registered in the directly. Using the number key pad on the mic, enter the ID. Press **CH ▲** to move the cursor to the right, and **CH ▼** to the left.



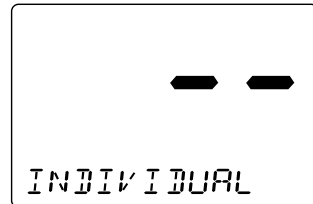
4. When you finish entering the last digit, press **SELECT** to transmit the position send call.



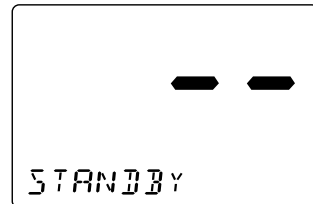
1-F. STANDBY

The DSC STANDBY function allows the **RT-2500** to answer DSC calls with the UNATTENDED message and record the calls for response at another time. When you set the radio to DSC STANDBY mode, voice traffic may still be active on any chosen channel.

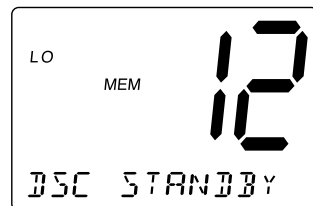
1. Press **SELECT** at DSC CALL (To enter DSC CALL, see page 18). INDIVIDUAL appears.



2. Display STANDBY using **CH ▲** and **CH ▼**. Then press **SELECT**.



3. When an individual DSC call is received, the radio will respond with the UNATTENDED message when an operator cannot answer the call. The DSC call will be recorded into the radio's Call Waiting directory.

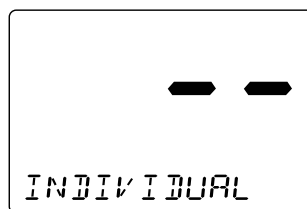


Note: *If you press a key on the radio or the PTT, this feature will be canceled.*

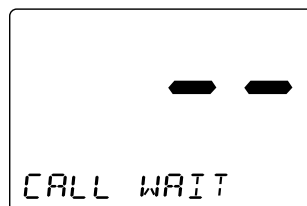
1-G. CALL WAIT

The DSC Call Waiting directory records 10 received distress calls, and records 20 individual calls that are received and not answered within 5 minutes or while the radio is set to DSC Standby. Calls will be recorded while you are busy with other communications as long as the transmitter is not keyed at the time of the call. If the call is answered within 5 minutes the call will not be recorded. When a call is recorded, a message appears.

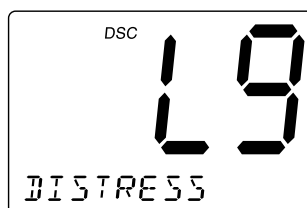
1. Press **SELECT** at DSC CALL (To enter DSC CALL, see page 18).
INDIVIDUAL appears.



2. Display CALL WAIT using **CH ▲** and **CH ▼**.



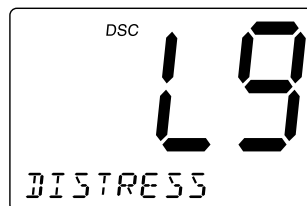
3. Press **SELECT**. The CALL WAIT directory appears.
4. Select the options you want to view using **CH ▲** and **▼**.



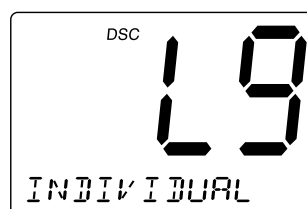
Note: *If a call has not been logged, the radio will beep and you will not be able to proceed to the next step.*

5. Press **SELECT**.

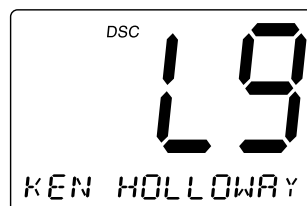
6. If a DISTRESS call is received in Call Wait, the following display appears.



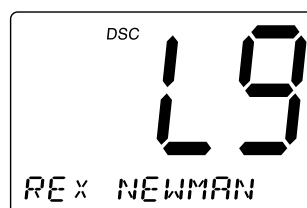
If an INDIVIDUAL call is received in Call Wait, the following display appears. At this point, you can call back any of the radios in the log.



7. Press **SELECT**. Received data appears.



8. Using CH ▲ and ▼ allows you to look through all of the data. If you press **SELECT**, the radio starts transmitting.



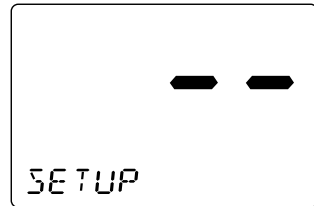
Geographical Call

This function can receive the electric wave transmitted towards the ship that is present in the domain specified from the call side.

Note: *The radio receives geographical calls only, and sending geographical calls is not available. It indicates the time when the geographical call is received.*

2. SETUP

1. Press **MENU** to enter Menu Operation.
2. Press **CH ▼** once to display **SETUP**, and press **SELECT**.



SETUP has some options as follows. To exit, select **EXIT**.

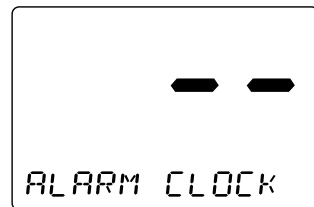
2-A. ALARM CLOCK

This feature is only available when the GPS is connected to the NMEA0183 Accessory Wires. If it is connected to the GPS, the alarms are set based on the satellite. You need to set the time previously to setting the alarm.

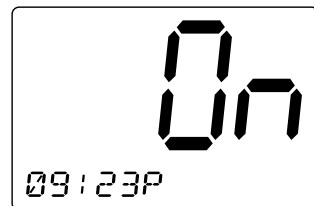
2-A-1. ALARM SET

This feature allows you to set the alarm.

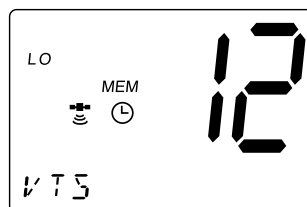
1. Press **SELECT** at **SETUP**.
ALARM CLOCK appears.



2. Press **SELECT**.
3. Press **CH ▲** or **▼** to select **On**. Then, press and hold **SELECT**.
4. Select the hour and minute using the number keypad on the MIC.





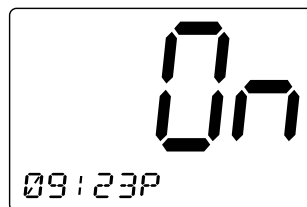
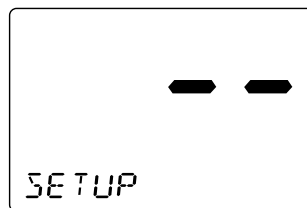
5. Select AM or PM using **2** or **7** on the MIC then press **SELECT**.
6. The radio returns to the channel display screen.



2-A-2. ALARM ON

This feature allows you to turn the alarm ON.

1. Press **SELECT** at **SETUP** (To enter **SETUP**, see page 27).
2. **ALARM CLOCK** appears. Then, press **SELECT**.
3. Select **On**. Using **CH ▲** or **▼**, and press **SELECT**. The radio returns to the channel display screen and the  icon appears.
4. When the radio reaches the set time the alarm sounds and the  icon blinks.

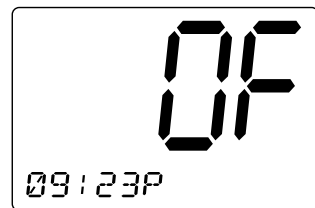


Note: *The alarm sounds when the set time is reached, you can turn the alarm Off by pressing any key. Alarm mode will turn Off automatically once the alarm sounds.*

2-A-3. ALARM OFF

This feature allows you to turn the alarm OFF.

1. Press **SELECT** at SETUP (To enter SETUP, see page 27).
2. ALARM CLOCK appears.
3. Press **SELECT**.
4. Select **OF** using **CH ▲** or **▼**, then press **SELECT**.
5. The radio returns to the channel display screen and the 🕒 icon disappears.

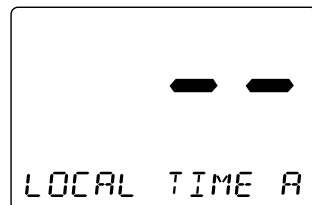
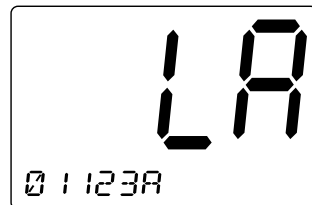
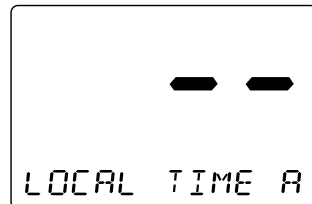


2-B. LOCAL TIME ADJUST

This feature allows you to fine tune the Local Time for any location in Europe. The feature enables you to adjust the Local time by ± 1 hour.

To set LOCAL TIME ADJUST

1. Press **SELECT** at SETUP (To enter SETUP, see page 27).
2. Display LOCAL TIME ADJUST using **CH▲** and **CH▼**.
3. Press **SELECT**. The registering screen appears. You can now adjust the time for your local area using **CH▲** and **CH▼**.
4. The time will be entered when you press **SELECT**. The display returns to LOCAL TIME ADJUST screen.



2-C. DAYLIGHT SAVINGS On/Off

This feature enables you to select the automatic Daylight Savings clock setting.

To set DAYLIGHT SAVINGS On/Off

1. Press **SELECT** at SETUP (To enter SETUP, see page 27).



2. Display DAYLITE SAVE using **CH▲** and **CH▼**.



3. Press **SELECT**. Then press **CH▲** to set DAYLIGHT SAVINGS on or **CH▼** to off (the default setting is off).



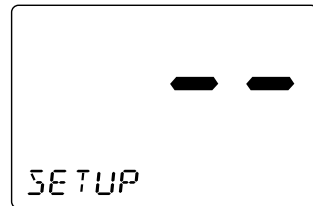
4. Press **SELECT**. The display returns to DAYLITE SAVE screen.



2-D. DIRECTORY

This function will allow you to send an individual call, etc. The Directory function memorizes the name and MMSI number of 20 other vessels. The following screen will allow you to setup an alphanumeric identity as well as the corresponding MMSI number.

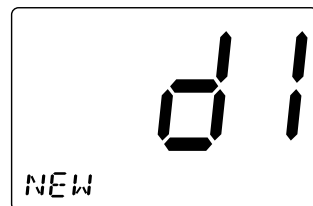
1. Press **SELECT** at **SETUP** (To enter **SETUP**, see page 27).



2. Display **DIRECTORY** using **CH ▲** or **▼**.



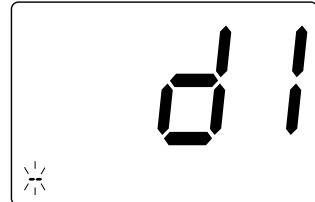
3. Press **SELECT**. The **DIRECTORY** menu appears. Use **CH ▲** or **▼** to select the menu.



2-D-1. NEW

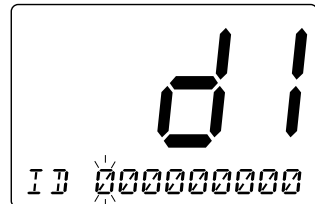
This function will allow you to enter new information into the directory.

1. Press **SELECT** at NEW. The registering screen appears.

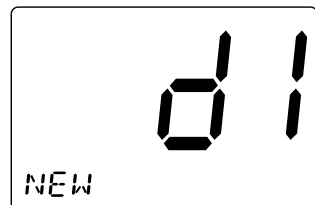


2. You can now enter the person's name. Using the number key pad on the mic, choose the alphabet. The character will be entered when **SELECT** or the different number key is pressed, and the blinking digit moves to the right.

3. After you enter the person's name, you can enter their MMSI number. Using the number key pad on the mic, enter their MMSI number. Press **CH ▲** to move the cursor to the right, and **CH ▼** to the left.



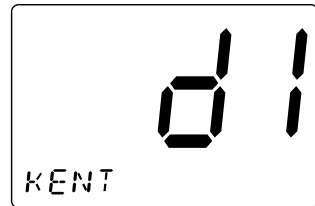
4. When you finish entering the last digit, press **SELECT**. the radio returns to NEW screen.



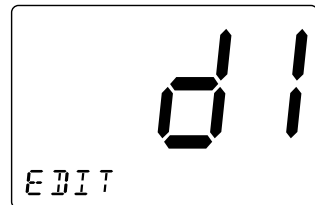
2-D-2. EDIT

If you want to edit the DIRECTORY

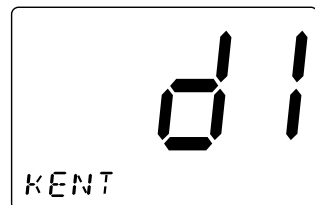
1. Press **SELECT** at the individual you want to edit.



2. **EDIT** appears, then press **SELECT**.



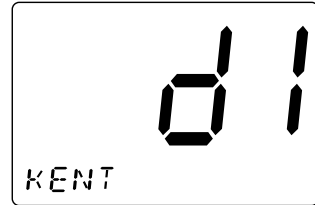
3. You can now edit the person's name. Using the number key pad on the mic choose the alphabet.
4. After you edit the person's name, you can edit the MMSI. The number will be entered when **SELECT** or the different number key is pressed, and the blinking digit moves to the right.
5. After the directory data is edited, the individual appears.



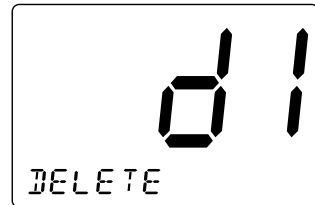
2-D-3. DELETE

If you want to delete the directory

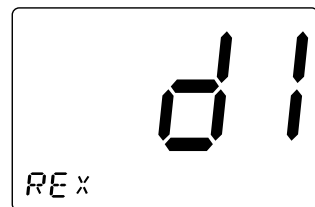
1. Press **SELECT** at the individual you want to delete.



2. Press **CH ▼** once. **DELETE** appears, then press **SELECT**.



3. The radio displays the next individual. If no more code remains, **EXIT** appears.



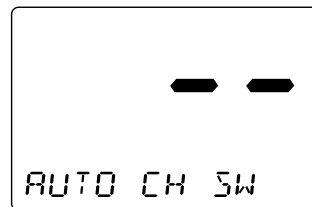
2-E. AUTO CHANNEL SWITCH

This feature is to allow you to disable the automatic channel change that happens when receiving a DSC call. This feature is useful when engaged in bridge – to – bridge or other safety related calls. When you have completed these calls, all of the incoming DSC calls received are available in the call log.

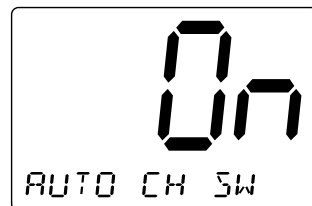
1. Press **SELECT** at SETUP (To enter SETUP, see page 27).



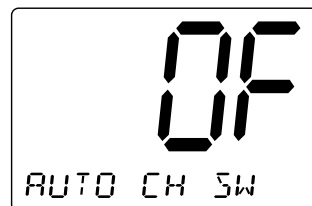
2. Display AUTO CH SW using **CH ▲** and **▼**.



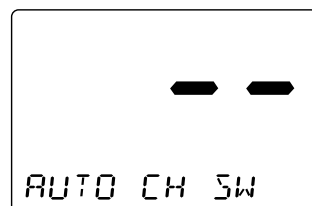
3. Press **SELECT** to enter the setting mode.



4. If you want to change this mode to off, press **CH ▼** once. (Default is set as ON.)



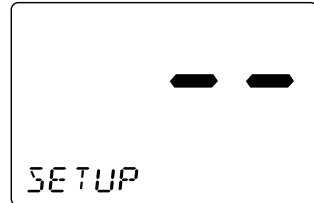
5. Press **SELECT**. The radio returns to the AUTO CH SW screen.



2-F. POSITION REPLY

When the calling radio has requested the position information of your radio, you can decide to transmit an acknowledgment automatically or on a call by call basis.

1. Press **SELECT** at **SETUP** (To enter **SETUP**, see page 27).



2. Display **POS REPLY** using **CH ▲** and **▼**.



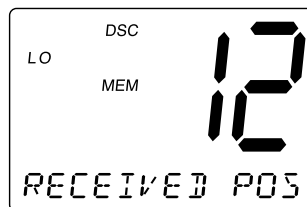
3. Press **SELECT** to enter the setting mode.



4. Press **CH ▲** or **▼** to make your selection.

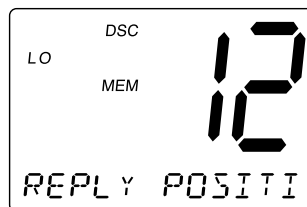
Example: On

When the radio receives a position request, the following screen appears.



Example: OF

When the radio receives a position request, the following screen appears. You can select whether reply the request or not. If you wants to reply press **SELECT**.



5. Press **SELECT**. The radio returns to the POS REPLY screen.



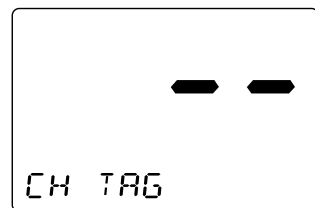
2-G. CH TAG

This feature allows you to name each marine channel.

1. Press **SELECT** at SETUP (To enter SETUP, see page 27).



2. Display CH TAG using **CH ▲** and **▼**.



3. Press **SELECT**. The channels and its names appear.
4. Press **CH ▲** and **▼** repeatedly to select the channel that you would like to EDIT.

Note: *The RT-2500 radio comes pre-programmed with default channel names.*

2-G-1. EDIT

If you want to edit the channel name

1. Press **SELECT** at the individual channel you want to edit.



2. You can edit the name. Using the number key pad on the mic select the alphabet, numeric, or symbols. The character will be entered when **SELECT** or the different number key is pressed, and the blinking digit moves to the right.



3. Press and hold **SELECT** when you enter the last digit.

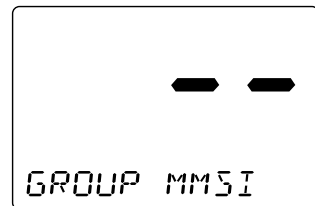


2-H. GROUP MMSI

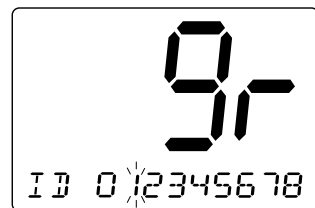
1. Press **SELECT** at **SETUP** (To enter **SETUP**, see page 27).



2. Display **GROUP MMSI** using **CH ▲** and **▼**.

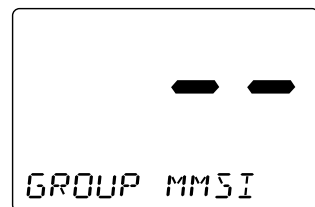


3. Press **SELECT**. The group MMSI ID screen appears.



4. You can now enter the **GROUP MMSI** code. Use the number key pad on the mic to display the number. The number will be entered when **SELECT** or the different number key is pressed, and the blinking digit moves to the right.

5. After the final digit is entered, a confirmation screen appears. Press **SELECT** and the radio returns to the following screen.



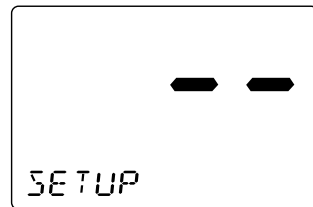
2-I. USER MMSI

User MMSI are usually issued by the national telecommunications authority of your country. You will need to obtain a nine-digit MMSI number and program it into the **RT-2500**. In the event of distress, this information together with the GPS-derived position coordinates is useful in search-and-rescue (SAR) operations by rescue organizations, such as the coast guard, marine police and navy. To obtain an MMSI number, contact your authorized Jmc dealer.

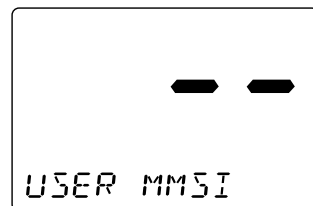
This portion of the SETUP menu will allow you to program an MMSI, (Maritime Mobile Service Identity) for sending and receiving DSC calls.

To set USER MMSI code

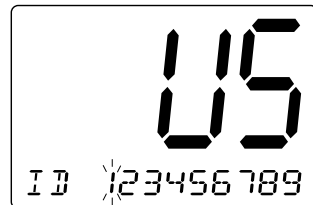
1. Press **SELECT** knob at SETUP.



2. Press **CH ▼** eight times to select USER MMSI.



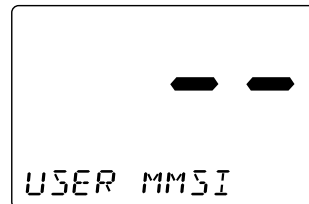
3. Press **SELECT**. The user MMSI ID screen appears.



4. You can now enter the USER MMSI code. Use the number key pad on the mic to display the number. The number will be entered when **SELECT** is pressed, and the blinking moves to the right.

5. After the final digit is entered, press and hold **SELECT**. The radio returns to USER MMSI screen.

Note: You can only program your radio once with an MMSI number. After that, send your radio to Jmc for factory service.

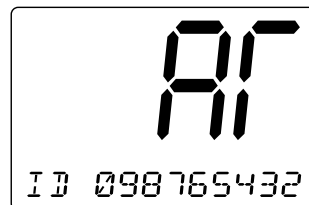
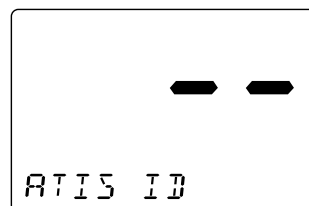
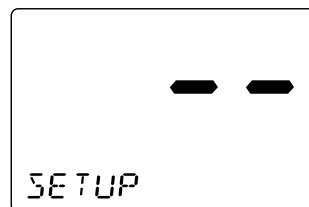


2-J. ATIS ID

ATIS is the automatic transmitter identification system. The ATIS ID is composed by number of 10 digits, and it is already registered to your radio. The first digit is pre-selected to "9", but it doesn't appear on the display. From 2nd to last digits are displayed.

To confirm the ATIS ID

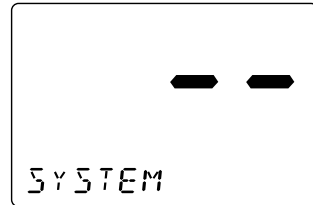
1. Press **SELECT** knob at SETUP.
2. Press **CH ▼** nine times to select ATIS ID.
3. Press **SELECT**. The ATIS ID number appears.



3. SYSTEM

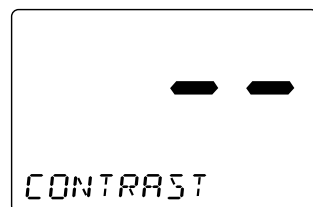
1. Press **MENU** to enter Menu Operation.
2. Press **CH ▼** twice to display SYSTEM, and press **SELECT**.

SYSTEM has 3 options as follows. To exit, select EXIT.



3-A. CONTRAST

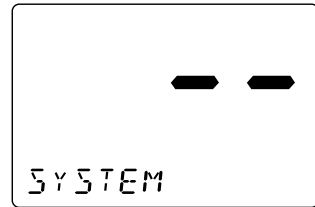
1. Press **SELECT** at SYSTEM. CONTRAST appears.
2. Press **SELECT** to enter the setting mode. (Default is set at 7).
3. Press **CH ▲** and **▼** to increase or decrease the contrast level.
4. When you find the most favorable brightness, press **SELECT**. The radio returns to the CONTRAST screen. If you want to exit the setting screen without changing the contrast, press **MENU**.



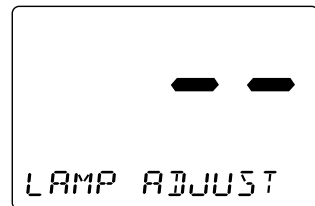
Note: There are 8 contrast levels (0 - 7).

3-B. LAMP ADJUST

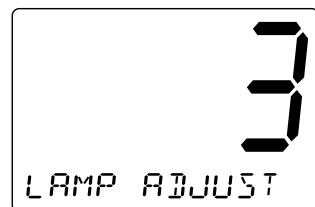
1. Press **SELECT** at SYSTEM.
(To enter SYSTEM, see page 44.)



2. Press **CH** ▼ once to select LAMP ADJUST.

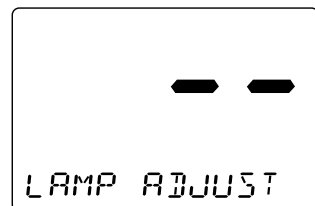


3. Press **SELECT** to enter the setting mode. (Default is set at 3).



4. Press **CH** ▲ and ▼ to select the backlight brightness level.

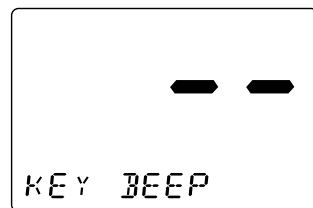
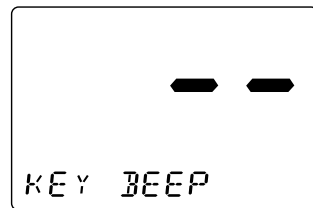
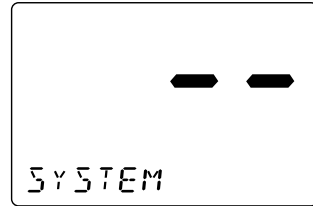
5. When you find the most favorable brightness, press the **SELECT**. The radio returns to the LAMP ADJUST screen.



Note: *The backlight settings are off, Level 1 Dim, Level 2 medium, and Level 3 bright.*

3-C. KEY BEEP

1. Press **SELECT** at SYSTEM.
(To enter SYSTEM, see page 44.)
2. Press **CH ▼** twice to select KEY BEEP.
3. Press **SELECT** to enter the setting mode.
4. Press **CH ▲** or **▼** to select ON or OFF.
5. Press **SELECT**. The radio returns to the KEY BEEP screen.

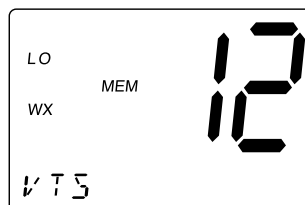


Switching the Inland Waterway Mode/Seagoing Mode

You can switch between Inland Waterway mode and Seagoing mode. Press and hold **PA/MODE** for 5 seconds to switch between the two.

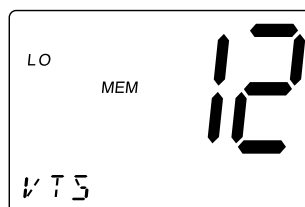
When the radio in the Inland Waterway mode;

DISTRESS/DSC cannot be transmitted nor received. Only ATIS can be transmitted. WX blinks.



When the radio in the Seagoing mode;

Transmission and reception of DISTRESS/DSC, and transmission of ATIS can be available.



Displaying GPS information

If the GPS module is properly connected to the radio and is working, press **SELECT** to display the current GPS information, date, time, latitude, and longitude. Press **SELECT** again to set the radio to its marine mode.

Setting Position for Distress Call

To set the radio to its position setting mode, press **SELECT** when the radio is set to its marine mode and does not have a GPS module connected. A screen appears that you can use to set the UTC time, latitude, and longitude used with Distress call.

Example:

Push **08231034 SELECT, 1234567(S) SELECT, 13579246(E) SELECT** of MIC when you set day, time, the position like "08/23 10:34 12° 34.567S and 135° 79.246E". (**3** : East, **6** : North, **7** : South, **9** : West)

NMEA Technical Setup

OCEANUS NMEA0183 GPS Input Connection Specification

This section is useful when attaching an external GPS to the **RT-2500** radio. Many GPS units have a setup menu to be able to configure the NMEA0183 serial data output. This output can be used to supply information to other devices on the vessel, such as the **RT-2500** VHF radio, auto pilots, chart plotters, etc.

To setup the GPS to be used with the **RT-2500** radio, the following items need to be considered for proper operation:

1. Baud Rate – Set the Baud rate to 4800.
2. Data Bits – Set the Data Bits to 8.
3. Parity – Set the Parity to None.
4. Stop Bits – Set the Stop Bits to 1.
5. GPRMC Command – This command is used by the **RT-2500** and includes the UTC Time, Latitude, Longitude, Speed, Direction, and Date information.

The data amplitude : Over 3.0V

Drive capability : Over 10mA

Optional Accessories

- Flush mounting bracket for “in dash” installation.
(Black = FMB322B)

Contact your Dealer for information.

VHF FM Marine Radio Telephone Channel and Functions (International Channels)

CHANNEL DESIG	FREQUENCY (MHz)		TYPE OF TRAFFIC	SHIP TO SHIP	SHIP TO SHORE	CH TAG
	TRANSMIT	RECEIVE				
01	156.050	160.650	VTS,Duplex	Yes	Yes	TELEPHONE
02	156.100	160.700	Port Ops,Duplex	Yes	Yes	TELEPHONE
03	156.150	160.750	Port Ops,Duplex	Yes	Yes	TELEPHONE
04	156.200	160.800	Port Ops,Duplex	Yes	Yes	INTL
05	156.250	160.850	VTS,Duplex	Yes	Yes	INTL
06	156.300	156.300	Safety	Yes	No	SAFETY
07	156.350	160.950	Com',Duplex	Yes	Yes	INTL
08	156.400	156.400	Com'l	Yes	No	COMMERCIAL
09	156.450	156.450	Com'l & Non Com'l	Yes	Yes	CALLING
10	156.500	156.500	Com'l	Yes	Yes	COMMERCIAL
11	156.550	156.550	Com'l	Yes	Yes	VTS
12	156.600	156.600	Port Ops	Yes	Yes	VTS
13	156.650	156.650	Navigational	Yes	Yes	BRG/BRG
14	156.700	156.700	Port Ops	Yes	Yes	VTS
15	156.750	156.750	Environmental	Yes	Yes	COMMERCIAL
16	156.800	156.800	Safety Calling	Yes	Yes	DISTRESS
17	156.850	156.850	State Control	Yes	Yes	SAR
18	156.900	161.500	Com'l,Duplex	Yes	Yes	INTL
19	156.950	161.550	Com'l,Duplex	Yes	Yes	INTL
20	157.000	161.600	Port Ops,Duplex	Yes	Yes	PORT OPR
21	157.050	161.650	Coast Guard,Duplex	Yes	Yes	INTL
22	157.100	161.700	Coast Guard,Duplex	Yes	Yes	INTL
23	157.150	161.750	Coast Guard,Duplex	Yes	Yes	INTL
24	157.200	161.800	Public Corresp,Duplex	No	Yes	TELEPHONE
25	157.250	161.850	Public Corresp,Duplex	No	Yes	TELEPHONE
26	157.300	161.900	Public Corresp,Duplex	No	Yes	TELEPHONE
27	157.350	161.950	Public Corresp,Duplex	No	Yes	TELEPHONE
28	157.400	162.000	Public Corresp,Duplex	No	Yes	TELEPHONE
60	156.025	160.625	Duplex			TELEPHONE
61	156.075	160.675	Duplex			INTL
62	156.125	160.725	Duplex			INTL
63	156.175	160.775	Duplex			INTL
64	156.225	160.825	Duplex			TELEPHONE
65	156.275	160.875	Port Ops,Duplex	Yes		INTL
66	156.325	160.925	Port Ops,Duplex	Yes	Yes	INTL
67	156.375	156.375	Com'l	Yes	No	BRG/BRG
68	156.425	156.425	Non Com'l	Yes	Yes	SHIP-SHIP
69	156.475	156.475	Non Com'l	Yes	Yes	PLEASURE
70	156.525	156.525				DSC
71	156.575	156.575	Non Com'l	Yes	Yes	PLEASURE
72	156.625	156.625	Non Com'l	Yes	No	SHIP-SHIP
73	156.675	156.675	Port Ops	Yes	Yes	PORT OPR
74	156.725	156.725	Port Ops	Yes	Yes	PORT OPR
75	156.775	156.775				
76	156.825	156.825				
77	156.875	156.875	Port Ops	Yes	No	PORT OPR
78	156.925	161.525	Non Com'l,Duplex	Yes	Yes	INTL
79	156.975	161.575	Com'l,Duplex	Yes	Yes	INTL
80	157.025	161.625	Com'l,Duplex	Yes	Yes	INTL
81	157.075	161.675	Coast Guard,Duplex	Yes	Yes	INTL
82	157.125	161.725	US Govt Only,Duplex	Yes	Yes	INTL
83	157.175	161.775	Coast Guard,Duplex	Yes	Yes	INTL
84	157.225	161.825	Public Corresp,Duplex	No	Yes	TELEPHONE
85	157.275	161.875	Public Corresp,Duplex	No	Yes	TELEPHONE
86	157.325	161.925	Public Corresp,Duplex	No	Yes	TELEPHONE
87	157.375	157.375	Public Corresp,Duplex	No	Yes	TELEPHONE
88	157.425	157.425	Com'l,Duplex	Yes	No	TELEPHONE

Specification

General

Controls	: On-Off/Volume, Squelch
Status Indicators	: TX (Transmit), TRI (Triple Watch), HI (High), LO (Low), U, C, I, MEM, WX, DSC, ☹ (Alarm), 📶 (GPS), 📻 (WHAM), and Channel Display
Channel Display	: LCD with Orange backlight
Buttons	: 16/9/TRI, DISTRESS, PA/MODE, MEM, SELECT, STEP/SCAN, MENU, HI/LO
Connectors	: Antenna, Remote, ACC, and DC power
Size	: H63 mm x W160 mm x L168 mm (W/O Heat Sink) H3.07 inches x W7.24 inches x L6.61 inches
Weight	: 1.0 kg / 2.65 lbs / 42.3 oz
Supply Voltage	: 13.8V DC negative ground
Standard Accessories	: Mounting bracket and hardware, DC power cord, microphone hanger, spare fuse, ACC Cable
Antenna Impedance	: 50 Ω nominal
Microphone	: Rugged 2 k Ω condenser mic element with coiled cord
Speaker	: 1.82 inch, Mylar Cone 8 Ω
Operating Temperature Range	: -15 °C to + 55 °C (+5 °F to +131 °F)
Shock and Vibration	: Meets or exceeds EIA standards, RS152B and RS204C

Transmitter

Power Output	: 1 watt or 25 watt (switch selectable)
Power Requirement	: Not rated on LO, 25 watts output: 5.6A@13.8V DC
Modulation	: FM \pm 5 kHz deviation
Hum and Noise Signal-to-Noise	: 45 dB@1 kHz with 3 kHz deviation with 1000 Hz modulating frequency (nominal)
Audio Distortion	: Less than 8% with 3 kHz deviation with 1000 Hz modulating frequency
Spurious Suppression	: -70 dBm @ Hi, -70 dBm @ Lo
Output Power Stabilization	: Built-in automatic level control (ALC)
Frequency Range	: 156 to 158 MHz
Frequency Stability	: \pm 10 ppm @ -15°C to + 55°C

Receiver

Frequency Range	: 156 to 163 MHz
Sensitivity	: 0.25 μ V for 12 dB SINAD
Circuit	: Dual Conversion Super Heterodyne PLL
Squelch Sensitivity	: 0.8 μ V Threshold
Spurious Response	: 70 dB
Adjacent Channel Selectivity	: 75 dB @ \pm 25 kHz
Audio Output Power	: 2.8 watts (10% Distortion)
Power Requirement	: 200 mA @ 13.8V DC squelched, 0.7A @ 13.8V DC at maximum audio output
IF Frequencies	: 1st 21.4 MHz, 2nd -455 kHz

Troubleshooting

If the **RT-2500** does not perform to your expectations, try the suggestions listed below.

SYMPTOM	CAUSE	REMEDY
Won't power On.	No or low voltage.	Check for proper voltage getting to the set.
When the PTT is pressed - TX icon comes on but another radio can hear a "click" but no audio is heard.	Bad mic element.	Send entire unit including mic to your dealer for repairs.
While scanning, the radio stops on a particular channel all of the time.	A source of noise is nearby.	Eliminate the source of the noise or delete the channel from the scanner.
There is noise on the receiver that the squelch will not eliminate.	An external noise is being generated by some device.	Either turn off the offending device or contact its maker for possible assistance.

If none of the above suggestions solves your problem, contact your dealer for assistance.

Care and Maintenance

Your **RT-2500** is a precision of electronic equipment and you should treat it accordingly. Due to the rugged design, very little maintenance is required. However, a few precautions should be observed:

- If the antenna has been damaged, you should not transmit except in the case of an emergency. A defective antenna may cause damage to your radio.
- You are urged to arrange for periodic performance checks with your Jmc Marine dealer.



Japan Marina Co., Ltd.

EC Declaration of Conformity

We, the undersigned,

Manufacturer	Japan Marina Company Limited
Address	36-2-1001 Udagawacho, Shibuya-ku, Tokyo
Country	Japan
<i>Phone number</i>	+81-3-3461-3606
<i>Fax number</i>	+81-3-3496-2078
<i>E-mail</i>	sales@japan-marina.co.jp

declare under our sole responsibility that the following apparatus:

Description	Class-D VHF Marine Radio (for non-SOLAS vessels)		
Manufacturer	Japan Marina Company Limited		
Brand	JMC		
Identification	RT-2500		
<i>Restrictive use</i>	<i>Protective equipment under IEC 60945-2002, IPX 7</i>		

conforms with the essential requirements of the RTTE Directive 1999/105/EC, based on the following specifications applied:

Standards
EN 300 698-2 V1.1.1 (2000-08), EN 300 698-3 V1.1.1 (2001-05), EN 301 025-2 V.1.1.1 (2000-08), EN 301 025-3 V.1.1.1 (2001-05), EN 301 843-1 V1.2.1 (2004-06), EN 301 843-2 V1.2.1 (2005-06), EN 60945, EN 60950 Conformity certified by Notified Body TNO Certification B.V. (CE0336)

and therefore complies with the essential requirements and provisions of the RTTE Directive.

Name and position of person binding the manufacturer or his authorised representative	Hideaki Yoshihara, President
Signature	Date
	19th October, 2005

