# iCOM®

## INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER
# IC-M302

## Icom Inc.

# FOREWORD

Thank you for purchasing this Icom product. The IC-M302 VHF MARINE TRANSCEIVER is designed and built with Icom's state of the art technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

We want to take a couple of moments of your time to thank you for making the IC-M302 your radio of choice, and hope you agree with Icom's philosophy of "technology first." Many hours of research and development went into the design of your IC-M302.

## ◇ *FEATURES*

❍ *Large 2-digit Ch with scrolling channel comment*

❍ *Easy to hear speaker*

❍ *Built-in DSC meets RTCM SC101 requirement*

❍ *Rugged waterproof construction*

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# IMPORTANT

**READ ALL INSTRUCTIONS** carefully and completely before using the transceiver.

**SAVE THIS INSTRUCTION MANUAL** — This instruction manual contains important operating instructions for the IC-M302.

# EXPLICIT DEFINITIONS

| WORD | DEFINITION |
|------|------------|
| ⚠ WARNING! | Personal injury, fire hazard or electric shock may occur. |
| CAUTION | Equipment damage may occur. |
| NOTE | Recommended for optimum use. No risk of personal injury, fire or electric shock. |

**CLEAN THE TRANSCEIVER AND MICROPHONE THOROUGHLY WITH FRESH WATER** after exposure to water including salt water, otherwise, the keys and switches may become inoperable due to salt crystallization.

# IN CASE OF EMERGENCY

If your vessel requires assistance, contact other vessels and the Coast Guard by sending a distress call on Channel 16.

### USING CHANNEL 16
### DISTRESS CALL PROCEDURE
1. "MAYDAY MAYDAY MAYDAY."
2. "THIS IS ..............." (name of vessel)
3. Your call sign or other indication of the vessel (AND 9-digit DSC ID if you have one).
4. "LOCATED AT ..............." (your position)
5. The nature of the distress and assistance required.
6. Any other information which might facilitate the rescue.

Or, transmit your distress call using digital selective calling on Channel 70.

### USING DIGITAL SELECTIVE CALLING (Ch 70)
### DISTRESS CALL PROCEDURE
1. While lifting up the key cover, push and hold **[DISTRESS]** for 5 sec. until you hear 5 short beeps change to one long beep.
2. Wait for an acknowledgment on Channel 70 from a coast station.
   • After the acknowledgment is received, Channel 16 is automatically selected.
3. Push and hold **[PTT]**, then transmit the appropriate information as listed above.

# NOTE

**A WARNING STICKER** is supplied with the transceiver.
To comply with FCC regulations, this sticker must be affixed in such a location as to be readily seen from the operating controls of the radio as in the diagram below. Make sure the chosen location is clean and dry before applying the sticker. (p. 31)

EXAMPLE



WARNING STICKER
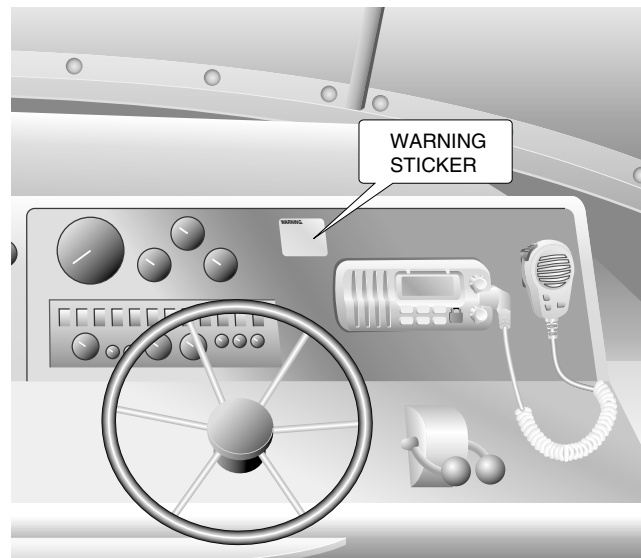
# RADIO OPERATOR WARNING

**WARNING**

Icom requires the radio operator to meet the FCC Requirements for Radio Frequency Exposure.An omnidirectional antenna with gain not greater than 9 dBi must be mounted a minimum of 5 meters (measured from the lowest point of the antenna) vertically above the main deck and all possible personnel. This is the minimum safe separation distance estimated to meet all RF exposure compliance requirements. This 5 meter distance is based on the FCC Safe Maximum Permissible Exposure (MPE) distance of 3 meters added to the height of an adult (2 meters) and is appropriate for all vessels.

For watercraft without suitable structures, the antenna must be mounted so as to maintain a minimum of 1 meter vertically between the antenna, (measured from the lowest point of the antenna), to the heads of all persons AND all persons must stay outside of the 3 meter MPE radius.

Do not transmit with radio and antenna when persons are within the MPE radius of the antenna, unless such persons (such as driver or radio operator) are shielded from antenna field by a grounded metallic barrier. The MPE Radius is the minimum distance from the antenna axis that person should maintain in order to avoid RF exposure higher than the allowable MPE level set by FCC.

**FAILURE TO OBSERVE THESE LIMITS MAY ALLOW THOSE WITHIN THE MPE RADIUS TO EXPERIENCE RF RADIATION ABSORPTION WHICH EXCEEDS THE FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE) LIMIT.
IT IS THE RESPONSIBILITY OF THE RADIO OPERATOR TO ENSURE THAT THE MAXIMUM PERMISSIBLE EXPOSURE LIMITS ARE OBSERVED AT ALL TIMES DURING RADIO TRANSMISSION. THE RADIO OPERATOR IS TO ENSURE THAT NO BYSTANDERS COME WITHIN THE RADIUS OF THE MAXIMUM PERMISSIBLE EXPOSURE LIMITS.**

**Determining MPE Radius**
**THE MAXIMUM PERMISSIBLE EXPOSURE (MPE) RADIUS HAS BEEN ESTIMATED TO BE A RADIUS OF ABOUT 3M PER OET BULLETIN 65 OF THE FCC.
THIS ESTIMATE IS MADE ASSUMING THE MAXIMUM POWER OF THE RADIO AND ANTENNAS WITH A MAXIMUM GAIN OF 9dBi ARE USED FOR A SHIP MOUNTED SYSTEM.**

# TABLE OF CONTENTS

# PRECAUTION

⚠ **WARNING! NEVER** connect the transceiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

**CAUTION:** Changes or modifications to this device, not expressly approved by Icom Inc., could void your authority to operate this device under FCC regulations.

**NEVER** connect the transceiver to a power source of more than 16 V DC or use reverse polarity. This will ruin the transceiver.

**NEVER** cut the DC power cable between the DC plug and fuse holder. If an incorrect connection is made after cutting, the transceiver may be damaged.

**NEVER** place the transceiver where normal operation of the vessel may be hindered or where it could cause bodily injury.

**KEEP** the transceiver at least 3.3 ft (1 m) away from the ship's navigation compass.

**DO NOT** use or place the transceiver in areas with temperatures below −4°F (−20°C) or above +140°F (+60°C) or, in areas subject to direct sunlight, such as the dashboard.

**AVOID** the use of chemical agents such as benzine or alcohol when cleaning, as they may damage the transceiver surfaces.

**BE CAREFUL!** The transceiver rear panel will become hot when operating continuously for long periods.
Place the transceiver in a secure place to avoid inadvertent use by children.

**BE CAREFUL!** The transceiver employs waterproof construction, which corresponds to JIS waterproof specification, Grade 7 (1 m/30 min.). However, once the transceiver has been dropped, waterproofing cannot be guaranteed due to the fact that the case may be cracked, or the waterproof seal damaged, etc.

## ◊ PRIORITIES

• Read all rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.

• You must monitor Channel 16 when you are not operating on another channel.

• False or fraudulent distress signals are prohibited and punishable by law.

## ◊ PRIVACY

• Information overheard but not intended for you cannot lawfully be used in any way.

• Indecent or profane language is prohibited.

## ◊ RADIO LICENSES
### (1) SHIP STATION LICENSE

You must have a current radio station license before using the transceiver. It is unlawful to operate a ship station which is not licensed.

Inquire through your dealer or the appropriate government agency for a Ship-Radiotelephone license application. This government-issued license states the call sign which is your craft's identification for radio purposes.

### (2) OPERATOR'S LICENSE

A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes.

The Restricted Radiotelephone Operator Permit must be posted or kept with the operator. Only a licensed radio operator may operate a transceiver.

However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, ends the call and makes the necessary log entries.

Keep a copy of the current government rules and regulations handy.

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### Radio license for boaters (U.S.A. only)

The Telecommunications Act of 1996 permits recreational boaters to have and use a VHF marine radio, EPIRB, and marine radar without having an FCC ship station license. Boaters traveling on international voyages, having an HF single sideband radiotelephone or marine satellite terminal, or required to carry a marine radio under any other regulation must still carry an FCC ship station license. For further information, see the FCC Ship Radio Stations Fact Sheet.

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# PANEL DESCRIPTION

## ■ Front panel

Speaker

Function display ❶ ❷ ❸

❽ ❼ ❻ ❺ ❹
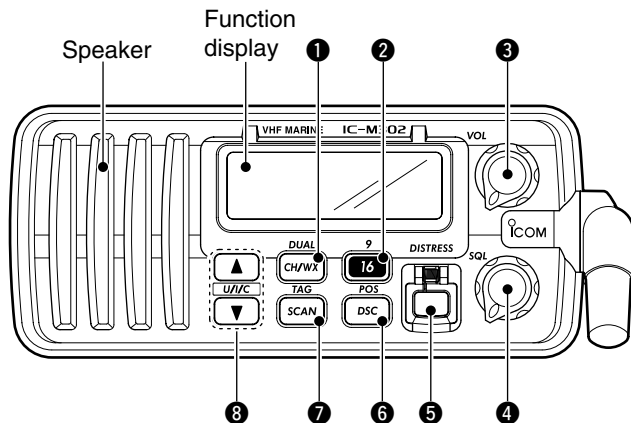
❶ **CHANNEL/WEATHER CHANNEL KEY [CH/WX•DUAL]**
➥ Toggles between regular channels and weather channel when pushed momentarily. (p. 7)
➥ Starts Dualwatch or Tri-watch when pushed for 1 sec. (p. 11)
➥ Stops Dualwatch or Tri-watch when either is activated.

❷ **CHANNEL 16/CALL CHANNEL KEY [16•9]**
➥ Selects Channel 16 when pushed. (p. 6)
➥ Selects call channel when pushed for 1 sec. (p. 6)
  • "**CALL**" appears when call channel is selected.
➥ Push for 3 sec. to enter call channel programming condition when call channel is selected. (p. 9)
➥ While pushing **[CH/WX•DUAL]**, push to enter the channel comment programming condition. (p. 10)
➥ Enters Set mode when pushed while turning power ON. (p. 28)

❸ **POWER/VOLUME CONTROL [VOL]**
Turns power ON and OFF and adjusts the audio level. (p. 8)

❹ **SQUELCH CONTROL [SQL]**
Sets the squelch threshold level. (p. 8)

❺ **DISTRESS KEY [DISTRESS]**
Transmits Distress call when pushed for 5 sec. (p. 17)

❻ **DSC/POSITION KEY [DSC•POS]**
➥ Selects the DSC menu when pushed. (p. 14)
➥ Shows current position and time from a GPS receiver, when pushed for 1 sec. (p. 16)

❼ **SCAN KEY [SCAN•TAG]**
➥ Starts and stops Normal or Priority scan.
➥ Sets or clears the displayed channel as a tag (scanned) channel when pushed for 1 sec.
➥ While pushing **[HI/LO]** on the microphone, push for 3 sec. to clear or set all tag channels in the selected channel group.

❽ **CHANNEL UP/DOWN KEYS [▲]/[▼]•[U/I/C]**
➥ Selects the operating channels, Set mode settings, etc. (pgs. 6, 7, 28)
➥ While pushing **[SCAN•TAG]**, push **[▲]** or **[▼]** to adjust the brightness of the LCD and key backlight. (p. 10)
➥ Selects one of 3 regular channels in sequence when both keys are pushed. (p. 7)
  • International, U.S.A. and Canadian channels are available for regular channels.

## ■ **Function display**
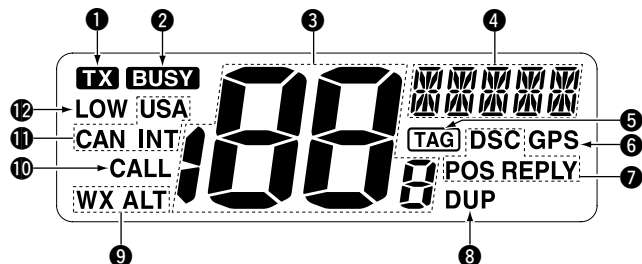


**❶ TRANSMIT INDICATOR** (p. 8)
"**TX**" appears while transmitting.

**❷ BUSY INDICATOR** (p. 8)
"**BUSY**" appears when receiving a signal or when the squelch opens.

**❸ CHANNEL NUMBER READOUT**
➥ Indicates the selected operating channel number.
  • "*A*" appears when a simplex channel is selected. "*b*" appears when a receive only channel for a Canadian channel group is selected. (p. 7)
➥ In Set mode, indicates the selected condition. (p. 28)

**❹ CHANNEL COMMENT INDICATOR**
➥ Channel comment appears if programmed. (p. 10)
➥ "*LOW BATTERY*" scrolls when the battery voltage drops to approx. 10 V DC or below.
➥ "*DW*" blinks during Dualwatch; "*TW*" blinks during Triwatch. (p. 11)

**❺ TAG CHANNEL INDICATOR** (p. 13)
Appears when a tag channel is selected.

**❻ GPS INDICATOR**
➥ Appears while valid position data is received.
➥ Blinks when invalid position data is received.
➥ Disappears when no GPS receiver is connected.

**❼ DSC INDICATOR**
Indicates the DSC status.
➥ "**DSC**" appears when a DSC call is received. (p. 25)
➥ "**POS REPLY**" appears when a Position Request Reply call or Position Report Reply call is received. (p. 27)

**❽ DUPLEX INDICATOR** (p. 7)
Appears when a duplex channel is selected.

**❾ WEATHER CHANNEL INDICATOR** (pgs. 7, 29)
➥ "**WX**" appears when a weather channel is selected.
➥ "**WX ALT**" appears when the Weather alert function is in use; blinks when an alert tone is received.

**❿ CALL CHANNEL INDICATOR** (p. 6)
Appears when the call channel is selected.

**⓫ CHANNEL GROUP INDICATOR** (p. 7)
Indicates whether a U.S.A. "**USA**," International "**INT**" or Canadian "**CAN**" channel is in use.

**⓬ LOW POWER INDICATOR** (p. 8)
Appears when low power is selected.

**Count on us!**

**Icom Inc.**
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