



## INSTRUCTION MANUAL

VHF MARINE TRANSCEIVER

# IC-M604A



Icom Inc.

Thank you for choosing this Icom product.

This product 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.

## ◇ **FEATURES**

- *Built-in DSC meets ITU Class D requirement*
- *Front and rear panel microphone connection*
- *Optional COMMANDMICII™ (HM-157) and COMMANDMICIII™ (HM-162) are available and up to two COMMANDMIC™s can be connected*
- *Easy to make individual DSC Calls using Icom's MA-500TR Class B AIS Transponder*


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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-M604A.

## **EXPLICIT DEFINITIONS**

WORD	DEFINITION
 <b>WARNING!</b>	Personal injury, fire hazard or electric shock may occur.
<b>CAUTION</b>	Equipment damage may occur.
<b>NOTE</b>	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 saltwater, and dry it before operating. Otherwise, the transceiver's keys, switches and controllers may become unusable, due to salt crystallization.

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## IN CASE OF EMERGENCY

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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. Say your call sign or other indication of the vessel (AND 9 digit DSC ID if you have one).
4. "LOCATED AT ....." (your position).
5. State the nature of the distress and assistance required.
6. Give 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, hold down **[DISTRESS]** for 5 seconds 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 acknowledgement is received, Channel 16 is automatically selected.
3. Hold down **[PTT]**, then transmit the appropriate information as listed above.

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## NOTE

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**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.

### EXAMPLE



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## RADIO OPERATOR WARNING

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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.**

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## PRECAUTIONS

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

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

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

⚠ **WARNING! NEVER** operate the transceiver during a lightning storm. It may result in an electric shock, cause a fire or damage the transceiver. Always disconnect the power source and antenna before a storm.

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

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

**KEEP** the transceiver and microphone at least 1 m (3.3 ft) away from the vessel's magnetic navigation compass.

**DO NOT** operate or place the transceiver in areas with temperatures below  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) or above  $+60^{\circ}\text{C}$  ( $+140^{\circ}\text{F}$ ) or, in areas subject to direct sunlight, such as the dashboard.

**DO NOT** use harsh solvents such as benzine or alcohol to clean the transceiver, as they will damage the transceiver's surfaces. If the transceiver becomes dusty or dirty, wipe it clean with a soft, dry cloth.

**BE CAREFUL!** The transceiver rear panel will become hot when operating continuously for long periods of time.

Place the transceiver in a secure place to avoid inadvertent use by children.

**BE CAREFUL!** The transceiver and the optional HM-157 COMMANDMICII™/HM-162\* COMMANDMICIII™ employ waterproof construction, which corresponds to IPX7. However, once the transceiver or microphone has been dropped, waterproof protection cannot be guaranteed because of possible damage to the transceiver's or microphone's case or the waterproof seal.

\* Equivalent to IPX8

Icom is not responsible for the destruction or damage to the Icom transceiver, if the malfunction is because of:

- Force majeure, including, but not limited to, fires, earthquakes, storms, floods, lightning, other natural disasters, disturbances, riots, war, or radioactive contamination.
- The use of Icom transceivers with any equipment that is not manufactured or approved by Icom.

## ◇ Priorities

- Read all rules and regulations pertaining to call 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 calls are prohibited under 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 may require a current radio station license before using the transceiver. It is unlawful to operate a ship station which is not licensed, but required to be.

If required, contact 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.

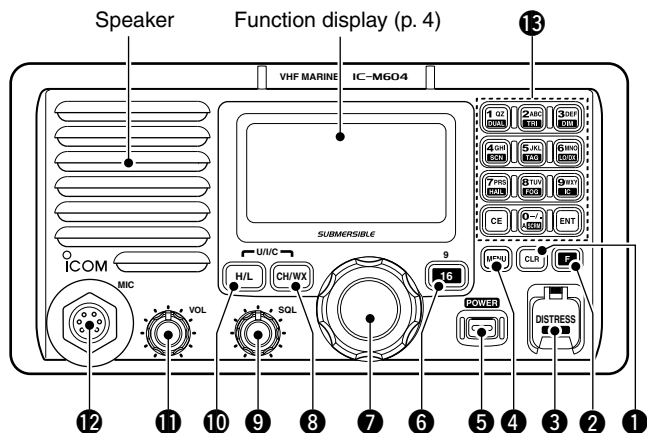
If required, the Restricted Radiotelephone Operator Permit must be posted or kept with the operator. If required, only a licensed radio operator may operate a transceiver.

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

A current copy of the applicable government rules and regulations is only required to be on hand for vessels in which a radio telephone is compulsory. However, even if you are not required to have these on hand it is your responsibility to be thoroughly acquainted with all pertinent rules and regulations.

**NOTE:** Even though the IC-M604A is capable of operation on VHF marine channels 3, 21, 23, 61, 64, 81, 82 and 83, according to FCC regulations these simplex channels cannot be lawfully used by the general population in USA waters.

## ■ Panel description



### 1 CLEAR KEY [CLR]

Push to cancel the entered function, exit the Set mode. (p. 47)

### 2 FUNCTION KEY [F]

After pushing this key, some keys perform a secondary functions.

- “F” is displayed when a secondary function can be accessed.

### 3 DISTRESS KEY [DISTRESS] (pp. 20, 22)

Hold down for 5 seconds to transmit a Distress call.

### 4 DSC MENU KEY [MENU] (p. 16)

Push to toggle the DSC menu ON or OFF.

### 5 POWER KEY [POWER] (p. 9)

- ➔ Push to turn ON the transceiver.
- ➔ Hold down for 1 second to turn OFF the transceiver.

### 6 CHANNEL 16/CALL CHANNEL KEY [16•9]

- ➔ Push to select Channel 16. (p. 7)
- ➔ Hold down for 1 second to select the Call channel. (p. 7)
  - “CALL” is displayed when the Call channel is selected.
- ➔ Hold down for 3 seconds to enter Call channel programming mode when the Call channel is selected. (p. 10)
- ➔ While holding down [H/L], push to enter channel comments programming mode. (p. 11)
- ➔ While turning ON the transceiver, push to enter Set mode. (p. 43)

### 7 SELECTOR DIAL [SELECTOR] (pp. 7–9)

Rotate to select the operating channels, set mode contents, and so on.

### 8 CHANNEL/WEATHER CHANNEL KEY [CH/WX]

- ➔ When pushed momentarily, selects and toggles the regular channels and weather channels. (p. 8)
- ➔ While holding down [H/L], push to sequentially select one of three channel groups. (p. 8)
  - USA, International and Canadian channel groups are selectable.

### 9 SQUELCH CONTROL [SQL] (p. 9)

Rotate to set the squelch threshold level.



## 10 TRANSMIT POWER KEY [H/L]

- ➔ Push to toggle the output power high or low. (p. 9)
  - Some channels are set to only low power.
- ➔ While holding down this key, some keys perform secondary functions.

## 11 VOLUME CONTROL [VOL] (p. 9)

Rotate to adjust the audio level.

## 12 MIC CONNECTOR

Connect only the supplied microphone.

**CAUTION: NEVER** connect another microphone here, such as the optional COMMANDMIC™s. It may cause damage to the transceiver.

## 13 KEYPAD

- ➔ Inputs numbers for channel number input, and so on.
  - After inputting the desired channel number, then push [ENT].
  - Hold down [0•A] to input 'A' for simplex channels.
- ➔ Inputs numbers, letters and some symbols for channel comment input.
- ➔ After pushing [F], push to perform the secondary function.
  - Most of the secondary functions (except TAG channel setting, Attenuator, RX speaker and Auto foghorn functions) can be cleared or cancelled when [CLR] is pushed.



- ➔ Number input: '1'
- ➔ Comment input: '1,' 'Q,' 'Z,' 'q,' 'z' or space
- ➔ After pushing [F], push to turn the Dualwatch function ON or OFF. (p. 13)



- ➔ Number input: '2'
- ➔ Comment input: '2,' 'A,' 'B,' 'C,' 'a,' 'b' or 'c'
- ➔ After pushing [F], push to turn the Tri-watch function ON or OFF. (p. 13)



- ➔ Number input: '3'
- ➔ Comment input: '3,' 'D,' 'E,' 'F,' 'd,' 'e' or 'f'
- ➔ After pushing [F], push this key then rotate [SELECTOR] to adjust the LCD and key backlight brightness. (p. 10)



- ➔ Number input: '4'
- ➔ Comment input: '4,' 'G,' 'H,' 'I,' 'g,' 'h' or 'i'
- ➔ After pushing [F], push to start or stop a scan. (p. 15)



- ➔ Number input: '5'
- ➔ Comment input: '5,' 'J,' 'K,' 'L,' 'j,' 'k' or 'l'
- ➔ After pushing [F], push to set the displayed channel as a TAG channel. (p. 15)
- ➔ While holding down [H/L], push for 3 seconds to clear or set all TAG channels. (p. 15)



- ➔ Number input: '6'
- ➔ Comment input: '6,' 'M,' 'N,' 'O,' 'm,' 'n' or 'o'
- ➔ After pushing [F], push to turn the Attenuator ON or OFF. (p. 9)
  - "LOC" is displayed when the Attenuator is activated.

## 2 PANEL DESCRIPTION

### ■ Panel description (Continued)



- ➔ Number input: '7'
- ➔ Comment input: '7,' 'P,' 'R,' 'S,' 'p,' 'r' or 's'
- ➔ After pushing [HAIL], push to turn the Hailer function ON or OFF. (p. 44)
- ➔ After pushing [HAIL], hold down for 1 second to turn the RX speaker function ON or OFF. (p. 46)



- ➔ Number input: '8'
- ➔ Comment input: '8,' 'T,' 'U,' 'V,' 't,' 'u' or 'v'
- ➔ After pushing [FOG], push to turn the Automatic foghorn function ON or OFF. (p. 45)



- ➔ Number input: '9'
- ➔ Comment input: '9,' 'W,' 'X,' 'Y,' 'w,' 'x' or 'y'
- ➔ After pushing [IC], push to turn the Intercom function ON or OFF. (p. 43)



- ➔ Number input: '0'
- ➔ Number input: Hold down for 1 second to input the character 'A' for simplex channel.
- ➔ Comment input: '0' and symbols ('-' '/' ':')
- ➔ After pushing [SCRM], push to activate an optional Voice scrambler function. (p. 12)
  - The optional Voice scrambler function cannot be used on Channels 16 and 70.

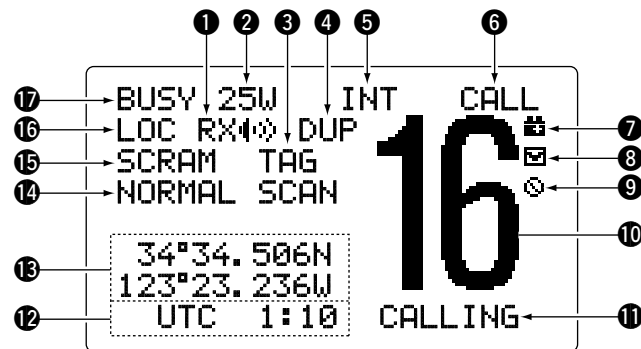


- ➔ Push to enter the input channel comment, selected item, and so on.



- ➔ Push to clear the entered data.

### ■ Function display



- 1 RX SPEAKER ICON** (p. 46)  
Displayed when in the RX speaker mode.
- 2 POWER ICON** (p. 9)  
➔ "25W" is displayed when high power is selected.  
➔ "1W" is displayed when low power is selected.
- 3 TAG CHANNEL ICON** (p. 15)  
Displayed when a TAG channel is selected.
- 4 DUPLEX ICON** (p. 8)  
Displayed when a duplex channel is selected.
- 5 CHANNEL GROUP ICON** (p. 8)  
Indicates whether a USA "USA," International "INT," Canadian "CAN" or weather "WX" channel is in use.

**Count on us!**

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