iCOM

VHF MARINE TRANSCEIVER
IC-M421

Icom Inc.

FOREWORD

Thank you for purchasing this Icom product. The IC-M421 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-M421 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-M421.

◇ *FEATURES*

❍ *Built-in DSC meets ITU Class D requirement*

❍ *Superior receiver performance*

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

❍ *Rugged waterproof construction*

❍ *Easy to hear speaker*

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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-M421.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. 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.

INSTALLATION NOTE

The installation of this equipment should be made in such a manner as to respect the EC recommended electromagnetic field exposure limits (1999/519/EC).

The maximum RF power available from this device is 25 watts. The antenna should be installed as high as possible for maximum efficiency and that this installation height should be at least 5 meters above ground (or accessible) level. In the case where an antenna cannot be installed at a reasonable height, then the transmitter should neither be continuously operated for long periods if any person is within 5 meters of the antenna, nor operated at all if any person is touching the antenna.

In all cases any possible risk depends on the transmitter being activated for long periods. (actual recommendation limits are specified as an average of 6 minutes) Normally the transmitter is not active for long periods of time. Some radio licenses will require that a timer circuit automatically cuts the transmitter after 1–2 minutes etc.

Similarly some types of transmitter, SSB, CW, AM, etc. have a lower 'average' output power and the perceived risk is even lower.

DOC

$\mathsf{C}\,\mathsf{E}$ CE versions of the IC-M421 which display the "CE" symbol on the serial number seal, comply with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.

(!) This warning symbol indicates that this equipment operates in non-harmonised frequency bands and/or may be subject to licensing conditions in the country of use. Be sure to check that you have the correct version of this radio or the correct programming of this radio, to comply with national licensing requirement.

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DECLARATION OF CONFORMITY

We Icom Inc. Japan
1-1-32, Kamiminami, Hirano-ku
Osaka 547-0003, Japan

Declare on our sole responsibility that this equipment complies with the essential requirements of the Radio and Telecommunications Terminal Equipment Directive, 1999/5/EC, and that any applicable Essential Test Suite measurements have been performed.

Kind of equipment: **VHF MARINE TRANSCEIVER**

Type-designation: **IC-M421**

Version (where applicable):
This compliances is based on conformity with the following harmonised standards, specifications or documents:

i)	EN 301 025-2	V1.2.1 (2004-09)
ii)	EN 301 025-3	V1.2.1 (2004-09)
iii)	EN 60945	2002
iv)	EN 60950-1	2001
v)	EN 300 698-2	V1.1.1 (2000-08)
vi)	EN 300 698-3	V1.1.1 (2001-05)

$\mathsf{C}\,\mathsf{E}$ **0560** (!)

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Authorized representative name

H. Ikegami
General Manager

Signature

Icom Inc.

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PRECAUTION

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

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 1 m away from the ship's navigation compass.

DO NOT use or place the transceiver in areas with temperatures below –20°C or above +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 and HM-150 employs waterproof construction, which corresponds to JIS waterproof specification, Grade 7 (1 m/30 min.). However, once the transceiver or microphone 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.
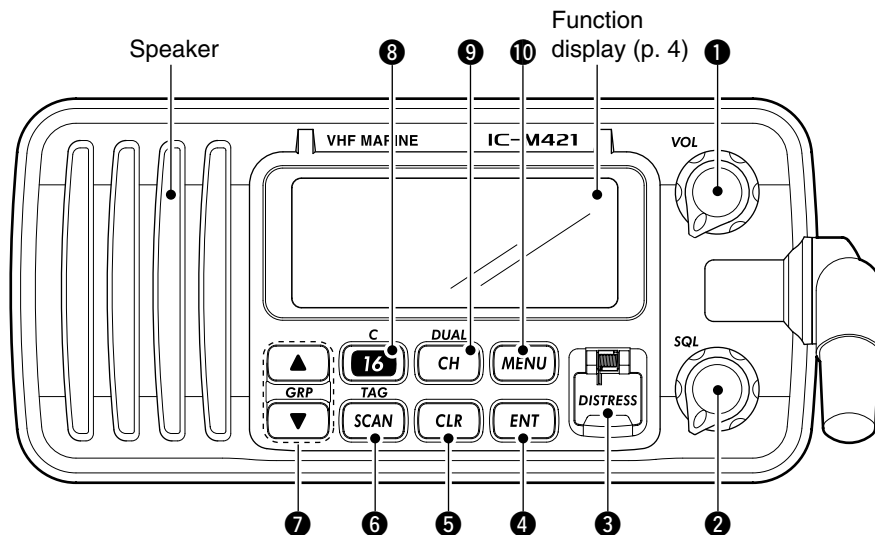
(2) OPERATOR'S LICENSE
A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes.

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.

2 PANEL DESCRIPTION

■ Panel description

Speaker

❽ ❾ ❿

Function
display (p. 4) ❶

VHF MARINE   IC-M421

VOL

C   DUAL
16   CH   MENU

GRP
TAG
▲ ▼   SCAN   CLR   ENT

SQL

DISTRESS

❼ ❻ ❺ ❹ ❸ ❷

❶ **POWER/VOLUME CONTROL [VOL]** (p. 8)
➥ Rotate to turn the transceiver power ON or OFF.
➥ Rotate to adjust the audio level.

❷ **SQUELCH CONTROL [SQL]** (p. 8)
Rotate to set the squelch threshold level.

❸ **DISTRESS KEY [DISTRESS]** (p. 22)
Transmits a distress call when pushed for 5 sec.

❹ **ENTER KEY [ENT]**
Sets the DSC menu, a channel comment, etc. when
pushed.

❺ **CLEAR KEY [CLR]**
Cancels the entered function and exits the condition when
pushed.

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➏ **SCAN/TAG CHANNEL KEY [SCAN•TAG]** (p. 13)
➥ Push to start and stop the normal or priority scan when tag channels are programmed.
➥ Push for 1 sec. to set the displayed channel as a tag (scanned) channel.
➥ While pushing **[HI/LO]** located on the microphone, push for 3 sec. to clear or set all tag channels in the selected channel group.

➐ **CHANNEL UP/DOWN KEYS [▲]/[▼]•[U/I]**
➥ Selects the operating channels, Set mode settings, etc. when pushed. (pgs. 6, 45)
➥ Selects one of two channel groups in sequence when both keys are pushed. (p. 7)
  • International and U.S.A.* channels are available.
   (*U.K. version only)
➥ While pushing **[SCAN•TAG]**, push to adjust the brightness of the LCD and key backlight. (p. 10)

➑ **CHANNEL 16/CALL CHANNEL KEY [16•C]**
➥ Selects Channel 16 when pushed. (p. 6)
➥ Selects call channel when pushed for 1 sec. (p. 6)
➥ Push for 3 sec. to enter the call channel programming condition when the call channel is selected. (p. 9)
➥ While pushing **[CH•DUAL]**, push to enter the channel comment programming condition. (p. 10)
➥ While turning power ON, push to enter set mode. (p. 45)
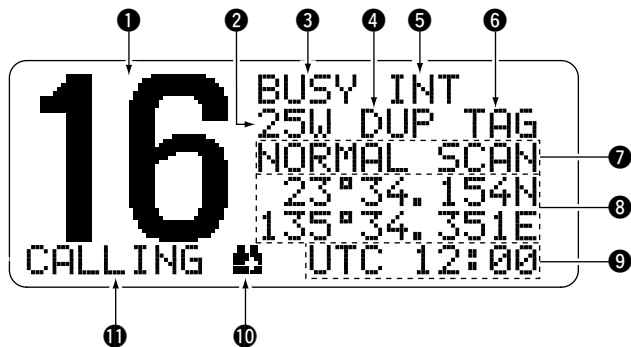
➒ **CHANNEL/DUALWATCH/TRI-WATCH KEY [CH•DUAL]**
➥ Push to select the regular channel. (pgs. 6, 7)
➥ Push for 1 sec. to start dualwatch or tri-watch. (p. 11)
➥ Push to stop dualwatch or tri-watch when either is activated. (p. 11)

➓ **DSC MENU KEY [MENU]** (p. 14)
Toggles the DSC menu ON or OFF when pushed.

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■ **Function display**

❶ CHANNEL NUMBER READOUT
Indicates the selected operating channel number.
• "A" appears when a simplex channel is selected.

❷ POWER INDICATOR (p. 8)
➥ "25W" appears when high power is selected.
➥ "1W" appears when low power is selected.

❸ BUSY/TRANSMIT INDICATOR (p. 8)
➥ "BUSY" appears when receiving a signal or when the squelch opens.
➥ "TX" appears while transmitting.

❹ DUPLEX INDICATOR (p. 7)
Appears when a duplex channel is selected.
• Duplex channel has a different transmit frequency and receiving frequency.

❺ CHANNEL GROUP INDICATOR (p. 7)
Indicates whether an International "INT," U.S.A. "USA," DSC "DSC," and ATIS "ATIS," channel is selected. (depends on version)

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

❼ SCAN INDICATOR
➥ Either "NORMAL SCAN" or "PRI-SCAN 16" scan type appears while scanning. (p. 13)
➥ "DUAL 16" appears during dualwatch; "TRI 16" appears during tri-watch. (p. 11)

❽ POSITION INDICATOR
➥ Shows the GPS position data.
• "??" may blink every 2 sec. instead of position data; when the GPS position data is invalid. In such a case, the last position data is held for up to 23.5 hours.
• "??" may blink every 2 sec. instead of position data 4 hours after the position data is input manually, up until 23.5 hours have past.
• A beep sounds automatically for 1 min. every 4 hours when the GPS or manually input position data has not been updated.
➥ "No Position" appears when no GPS receiver is connected and no position data is input manually.

Count on us!

< Intended Country of Use >

☐ GER ☐ FRA ☐ ESP ☐ SWE
☐ AUT ☐ NED ☐ POR ☐ DEN
☐ GBR ☐ BEL ☐ ITA ☐ FIN
☐ IRL ☐ LUX ☐ GRE ☐ SUI
☐ NOR

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