



VHF MARINE TRANSCEIVER

# IC-M504A

**DSC Built-in  
Class D**

**Submersible** <sup>PLUS</sup>

1.5m depth for 30 minutes

**FORCE 5 AUDIO™**

Rugged

**MIL-STD 810**





# *The Submersible PLUS Marine VHF with Class D*

MARINE VHF TRANSCEIVER

## IC-M504A



Black version



Gray version

### IPX8 Submersible PLUS (1.5m depth for 30 minutes)



The IC-M504A withstands submersion in up to 1.5m depth of water for 30 minutes. It is equivalent to the IPX8 standard. All products are rigorously checked to pass the quality test at the factory.

### Large LCD with dot-matrix characters

The IC-M504A has a 168-character, full dot-matrix display that allows you to easily view a variety of information, such as GPS data, DSC emergency data, etc. The large buttons and knobs provide user friendly operation.



▲ 37×73mm (1.46×2.87 in) size full dot-matrix display





# DSC

## ITU Class D DSC

The IC-M504A has two receivers, one for the radio and one to monitor channel 70 for DSC all the time. When a distress call is received, an escalating alarm sounds and the transceiver automatically switches to channel 16. The auto switch and auto tune timer functions allow you to control the timing to switch. Compliant to new DSC class D regulations.

## Position Request and Position Report

Over and above the DSC, your own and other ships' position data can be exchanged with the position request or position report functions. The received position information can be transferred to external navigation equipment\*. In addition, the polling (request/reply) function checks whether a specific ship is within the communications range.

\* External GPS receiver and navigation equipment which accepts NMEA 0183 format is required.

## Superior receiver performance

The IC-M504A has excellent receive specifications of 80dB (typical) for intermodulation and channel selectivity, and 0.22µV (typical) high sensitivity. It's superior receiver provides excellent resistance to intermodulation and allows you to catch a weak signal between strong stations.

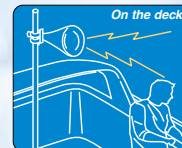
## Excellent audio output power

The extra large speaker is mounted into a well-spaced housing, producing greater sound than the specified 4.5W output power. You can get clear and loud reception without requiring repetition of the message, even over the engine or other background noise.

## DSC Built-in Class D

## 25W hailer/RX speaker and auto foghorn

When connected to a hailer horn or external speaker on the deck or tower, you can make an announcement on-board from the microphone. The RX speaker function, "receiver-repeater", allows you to monitor the received audio. Four foghorn patterns are also available for the automatic foghorn.



## Rear panel microphone version\*

With this version, the microphone connector is drawn from the rear panel and a 6.1m (20ft) microphone extension cable is supplied to allow you clean and neat panel installation.

\* Ask your dealer for details



## Other features

- Dual/tri-watch function for monitoring Ch.16 and/or call channel
- Instant access to Ch. 16 and call channel
- 7 levels adjustable backlit display and keypad
- Convenient "TAG" scanning function
- Optional Voice Scrambler, UT-112 for private communication
- Weather channels with weather alert function
- Black or gray color versions

## Optional fully integrated COMMANDMICIII™

### Full control 2nd station capability

The COMMANDMICIII™ is a remote control for the IC-M504A that may be positioned up to 18.3m (60ft) away from the IC-M504A. All functions, including distress call, DSC, and foghorn, are available. The COMMANDMICIII™ may also be used as an intercom with the IC-M504A.

### Multi-function "Jog" dial

A newly designed multi-function Jog dial gives you quick and easy access to many M504 settings, including operating channel, volume, squelch, menu settings and more.

### Other features

- Full dot-matrix LCD with 7-step dimmer setting
- 2.8W (typical) external speaker terminal
- Submersible PLUS (1.5m depth for 30 minutes)
- Extra large 45mm (d) speaker for superior audio

## COMMANDMICIII™



Backlit keypad and Jog dial

"Distress" button on the back of the unit



Optional COMMANDMICIII™, HM-162SW▶

## SPECIFICATIONS

## GENERAL

- Frequency range :
  - Tx 156.025–157.425MHz
  - Rx 156.050–163.275MHz
- Type of emission : 16K0G3E, 16K0G2B
- Usable channels : USA, INT, CAN, WX channels
- Power supply requirement: 13.8V DC  $\pm 15\%$
- Current drain (at 13.8V DC) :
  - Transmit 5.5A (25W output)
  - Receive 1.5A (Max. AF)
- Operating temperature :  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  ; range  $-4^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$
- Antenna impedance : 50 $\Omega$  (SO-239)
- Dimensions (W×H×D) : 165×110×123.2 mm; (projections not included) 6.5×4.33×4.85 in.
- Weight (approx.) : 1.45 kg ; 3.20 lb
- NMEA formats :
  - Input RMC, GGA, GNS, GLL
  - Output DSC, DSE

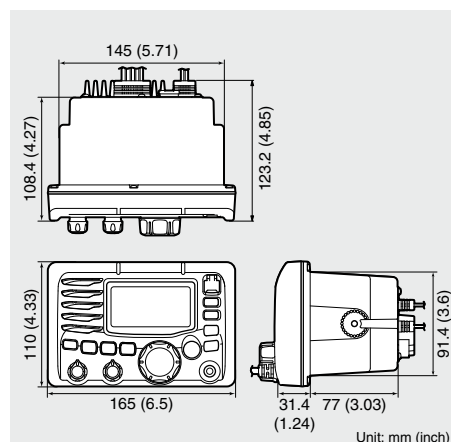
## TRANSMITTER

- Output power : 25W or 1W (at 13.8V DC)
- Modulation system : Variable reactance
- Max. Freq. deviation :  $\pm 5.0\text{kHz}$
- Frequency error :  $\pm 10\text{ppm}$
- Spurious emissions : Less than  $-70\text{dBc}$  (at 25W)
- Residual modulation : More than 40dB
- Adjacent Ch. power : More than 70dB

## RECEIVER

- Intermediate freq. : 1st 21.7MHz  
31.05MHz (Ch70)  
2nd 450kHz
- Sensitivity : 0.22 $\mu\text{V}$  typ. (at 12dB SINAD)
- Squelch sensitivity : Less than 0.32 $\mu\text{V}$  (threshold)
- Adjacent Ch. selectivity : 80dB typ. (DSC 75dB typ.)
- Spurious response : 80dB typ. (DSC 75dB typ.)
- Intermodulation : 80dB typ. (DSC 75dB typ.)
- Hum and noise : More than 40dB
- Audio output power : 4.5W typ. at 10% distortion with a 4 $\Omega$  load

## DIMENSIONS



## Supplied accessories:

- Hand microphone
- DC power cable
- Mounting bracket kit

## OPTIONS

Some options may not be available in some countries. Please ask your dealer for details.



## HM-162B/SW REMOTE-CONTROL MICROPHONE

Size (W×H×D): 65.5×150×38 mm; 2.58×5.91×1.5 in.

Weight (approx.; except cables): 385g ; 13.6oz

Supplied accessories :

- 6.1m (20ft) of cable, OPC-1540, with external speaker terminal
- Microphone hanger
- Mounting base for cable connector

**OPC-1541** EXTENSION CABLE FOR HM-162B/SW  
6.1m (20ft) extension cable for use with COMMANDMICIII™. Up to 2 OPC-999 can be connected.



## MB-75 FLUSH MOUNT KIT

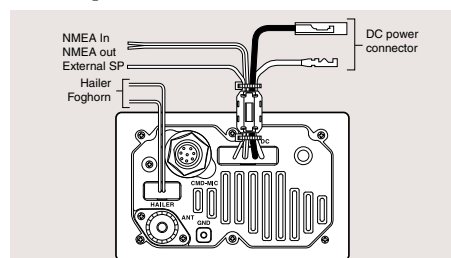
For flush-mounting the IC-M504A to a flat surface, such as a control panel.



## UT-112 VOICE SCRAMBLER UNIT

Provides up to 32 codes for private communication.

## Rear panel view



## Applicable U.S. Military Specifications

The IC-M504A and HM-162B/SW have been tested to and passed the following MIL-STD requirements and strict environmental standards.

Standard	MIL 810 F	
	Method	Procedure
Low Pressure	500.4	I, II
High Temperature	501.4	I, II
Low Temperature	502.4	I, II
Temperature Shock	503.4	I
Solar Radiation	505.4	I
Rain	506.4	I, III
Humidity	507.4	—
Salt Fog	509.4	—
Dust Blowing	510.4	I
Immersion	512.4	I
Vibration	514.5	I
Shock	516.5	I, IV

Also meets equivalent MIL-STD-810-C, -D and -E.

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