



ICOM

VHF MARINE TRANSCEIVER

# IC-M90E



Rugged  
MIL-STD 810

## Commercial Grade Marine & Private Mobile Radio



**Waterproof**  
1m depth for 30 minutes

### Wide LCD allows wide viewing angles

A wide viewing angle, high intensity LCD is used in the IC-M90E, offering bright, easy to read characters. The LCD's contrast and backlight are adjustable in 4-levels\*. The LED indicator on top of the front panel shows the operating status clearly.

\* Backlight includes OFF setting.

### Built-in Voice scrambler

A built-in 32 code voice scrambler, compatible with the UT-112, provides privacy in secret conversation.

### 100 programmable channels for PMR use

The IC-M90E is suitable for both marine and private mobile applications. Up to 100 programmable channels are available for private mobile use (146-174MHz)\*. CTCSS and DTCS tone signalings and wide/narrow channel bandwidth are programmable for each channel. (12.5/25kHz or 12.5/20kHz).

\* Appropriate license will be required. Ask your dealer for details.

### Optional VOX (Voice Operated Transmit) headset

With one of Icom's optional headsets\* and the OPC-1392, the IC-M90E offers hands-free operation.

\* See options listed on back.

### Waterproof speaker microphone, HM-125\*

\* Optional, equivalent to IPX7.  
(1m depth for 30 minutes)

### Tough and waterproof for heavy-duty use

The IC-M90E is a waterproof (IPX7\*), reliable, commercial grade radio. It's simple, yet rugged construction has a polycarbonate casing with an insert-type battery to prevent water intrusion.

\* Equivalent to IPX7 of the corresponding International Standard IEC 60529 (2001). 1m depth for 30 minutes.

### Long wear printed buttons

Clearly labeled large buttons and positive button action allows for operation in all conditions, even when wearing heavy gloves. The transparent buttons are printed from behind (not on top), so the operating label on the keypad will never be erased under hard use over many years.

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## ADDITIONAL FEATURES

- Instant access to Ch. 16 and call channel
- Simple add/delete TAG scanning operation
- Monitor button opens squelch
- Automatic scan function
- 2 step power save mode for longer battery life
- Battery indicator shows remaining battery power in 4 levels
- Beep sound is programmable for each button
- Self check function
- Key lock function

## SPECIFICATIONS

### GENERAL

- Frequency range :
  - Marine Tx 156.000–161.450MHz
  - Rx 156.000–163.425MHz
  - PMR Tx/Rx 146.000–174.000MHz
- Usable channels : INT, USA\* channels; 100 programmable channels (\* Depending on version)
- Channel spacing :
  - Marine 25kHz
  - PMR 25/12.5kHz
  - FRG version 20/12.5kHz
- PLL channel step (PMR) : 5/6.25/7.5kHz
- Current drain (at 7.2V DC) :
  - Tx 5W output 1.6A typical
  - Rx AF max. 200mA typical
- Operating temperature range :
  - Marine -15°C to +55°C
  - PMR -25°C to +55°C
- Antenna impedance : 50Ω (SMA)
- Dimensions (W×H×D) : 65×145×44 mm (projections not included)
- Weight (approx.) : 410g (with BP-225) 350g (with BP-241)

Measurements made in accordance with EN301 178 or EN300 086. All stated specifications are subject to change without notice or obligation.

### TRANSMITTER

- Output power (Hi/Mid/Low) : 5/3/1W
- FRG version 1/0.5W (Marine), 5/3/1W (PMR)
- Max. frequency deviation :
  - Marine ± 5.0kHz
  - PMR (W/N) ± 5.0/2.5kHz
  - FRG version (M/N) ± 4.0/2.5kHz
- Frequency error : ± 1.5kHz
- Spurious emissions : Less than 0.25µW (below 2GHz)
- Adjacent channel power :
  - Marine 70dB
  - PMR (Wide/Narrow) 70/60dB
- Hum and noise ratio :
  - Marine 40dB
  - PMR (Wide/Narrow) 40/34dB

### RECEIVER

- Sensitivity (20dB SINAD) :
  - Marine -2dBµ emf typical
  - PMR -4dBµ emf typical
- Squelch sensitivity : -6dBµ emf typical (threshold)
- Adjacent channel selectivity :
  - Marine 70dB
  - PMR (Wide/Narrow) 70/60dB
- Spurious response : 70dB

- Intermodulation rejection :
  - Marine 68dB
  - PMR 65dB
- Hum and noise ratio :
  - Marine 40dB
  - PMR (Wide/Narrow) 40/34dB
- Audio output power (at 10% distortion with an 8Ω load) :
  - Marine 0.2W
  - PMR 0.35W

### Applicable U.S. Military Specifications

Standard	MIL 810 C		MIL 810 D		MIL 810 E		MIL 810 F	
	Method	Proc.	Method	Proc.	Method	Proc.	Method	Proc.
Low Pressure	500.1	I	500.2	I, II	500.3	I, II	500.4	I, II
High Temp.	501.1	I	501.2	I, II	501.3	I, II	501.4	I, II
Low Temp.	502.1	I	502.2	I, II	502.3	I, II	502.4-3	I, II
Temp. Shock	503.1	I	503.2	I	503.3	I	503.4	I
Solar Radiation	505.1	I	505.2	I	505.3	I	505.4	I
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III
Humidity	507.1	I, II	507.2	II, III	507.3	II, III	507.4	-
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	-
Dust Blowing	510.1	I	510.2	I	510.3	I	510.4	I
Immersion	512.1	I	512.2	I	512.3	I	512.4	I
Vibration	514.2	VIII, X	514.3	I	514.4	I	514.5	I
Shock	516.2	I, II, V	516.3	I, IV	516.4	I, IV	516.5	I, IV

- Supplied accessories:** (\* Varies according to version.)
- Li-Ion battery versions
    - BP-241
    - MB-103
    - BC-162
    - Antenna
    - BC-165
    - Hand strap
  - Ni-Cd battery versions
    - BP-225
    - MB-103
    - BC-158
    - Antenna
    - BC-147
    - Hand strap

## OPTIONS

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

- BP-223 BATTERY CASE**  
Battery case for AA (LR6)×6 alkaline cells.
- BP-224:** 7.2V/750mAh Ni-Cd battery pack.
- BP-225:** 7.2V/1100mAh Ni-Cd battery pack.
- BP-241:** 7.4V/1150mAh Li-Ion battery pack. Provides 7, 10, 11 hours operating time\* respectively (approx. at 5 Watts). \* Tx (Hi): Rx: standby=5:5:90
- BC-162 DESKTOP CHARGER**  
+ **BC-145E AC ADAPTER**  
Rapidly charges the BP-224, BP-225 and BP-241 in 1, 1.5, 2 hours, respectively.
- BC-158 DESKTOP CHARGER**  
+ **BC-147E AC ADAPTER**  
Regularly charges the BP-225 in 12–18 hours. Cannot charge BP-241.
- BC-119N DESKTOP CHARGER**  
+ **AD-109 CHARGER ADAPTER**  
+ **BC-145E AC ADAPTER**  
For rapid charging of battery pack. Charges the BP-225 2.2–2.8 hours. Cannot charge BP-241.
- CP-17L CIGARETTE LIGHTER CABLE**  
WITH NOISE FILTER
- OPC-515L DC POWER CABLE**  
For use with the BC-119N or BC-158 with an external DC power supply. (12–16 V DC required)
- BC-121N MULTI-CHARGER**  
+ **AD-109 CHARGER ADAPTER**  
+ **BC-157 AC ADAPTER**  
For rapid charging of up to 6 battery packs (Six AD-109s are required). Charges the BP-225 2.2–2.8 hours. Cannot charge BP-241.
- OPC-656 DC POWER CABLE**  
For use with the BC-121N with a DC power supply. (12–16V DC required)
- MB-86 SWIVEL BELT CLIP**
- MB-103 BELT CLIP:** Alligator type.
- HM-125 SPEAKER-MICROPHONE**  
Full sized, submersible construction corresponds to IPX7 (1 m depth / 30 min.).
- HS-94 EARPHONE-HEAD HEADSET**
- HS-95 BEHIND-THE-HEAD HEADSET**
- HS-97 THROAT MICROPHONE**
- + **OPC-1392 HEADSET ADAPTER CABLE**  
For VOX hands-free operation. These headsets are not waterproof.



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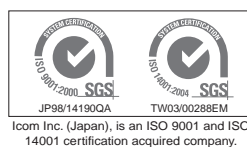
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