

ICOM



GMDSS



About GMDSS

GMDSS concept

The Global Maritime Distress and Safety System (GMDSS) is the International radio safety system for ships mandated by the International Maritime Organization (IMO). The GMDSS system provides automated distress alerting and distress communication service with location information.

Ships engaged in international shipping (SOLAS vessels) are obliged to carry GMDSS communication equipment. Also, most governments have specified use of selected GMDSS systems for their regulated domestic vessels and non-regulated vessels are permitted to use any GMDSS systems.

Icom supplies GMDSS communication radio equipment including the MF/HF radio telephone, IC-M801GMDSS, VHF radio telephone, IC-GM651 and VHF handheld radio for survival craft, IC-GM1600E.

All these radios comply with the EU Marine Equipment Directive (MED) (96/98/EC) to be carried and used on ships registered under the European Union.



Required GMDSS equipment

| Sea Area | Fixed mount radios | Portable radios | Other equipment |
|--|--|--|---|
| A1: Within the coverage of VHF coast stations | VHF: IC-GM651 | | |
| A2: Within the coverage of MF coast stations | VHF: IC-GM651 MF: IC-M801GMDSS | 2-Way radio for survival craft: IC-GM1600E | |
| A3: Ocean areas within INMARSAT coverage. (Below 70 deg North Latitude and above 70 deg South Latitude) | Either INMARSAT station or HF: IC-M801GMDSS ^{*1} plus MF: IC-M801GMDSS VHF: IC-GM651 | 2 sets for 300-500 GT cargo ships and 3 sets for all passenger ships and 500 GT or greater cargo ships are required. | <ul style="list-style-type: none"> • SART (Search and Rescue Transponder) • NAVTEX receiver • 406MHz EPIRB |
| A4: Out of INMARSAT coverage area. (Polar regions) | HF: IC-M801GMDSS ^{*1} MF: IC-M801GMDSS VHF: IC-GM651 | | |

^{*1} HF direct printing equipment required.

Maintenance

Ships operating in Sea Area **A1** or **A2** must select at least **one**, ships operating in Sea Areas **A3** and **A4** must select at least **two** of the following methods of maintenance.

- A. At sea maintenance
- B. Shore based maintenance
- C. Duplication of the following equipment

1. Sea Area A1 — a complete VHF radio
2. Sea Area A2 — a complete VHF and MF radio
3. Sea Area A3 — a complete VHF and, either MF/HF radio or INMARSAT station.
4. Sea Area A4 — a complete VHF and HF/MF radio.

In some countries, required equipment may be different. Please ask your dealer for details. Reference from "<http://www.fcc.gov/eb/ShipInsp/gmdss.html>"

IC-GM1600E

SURVIVAL CRAFT 2-WAY RADIO

GMDSS Portable for Survival Craft



Meets the strict environmental requirements for survival craft radio

The IC-GM1600E meets temperature, thermal shock, vibration and drop resistant (from 1 m height) requirements. After passing those environmental tests, the IC-GM1600E retains 1m depth waterproof construction as specified by IMO A.809 (19), A.694 (17), MSC 149 (77) and related specifications.

Optional high capacity Lithium battery, BP-234

The BP-234 has superior low temperature characteristics and provides more than 8 hours operating time even at -20°C . (Duty cycle: Tx: Rx: Stand-by = 6:6:48)

Large keypad with positive button action wide viewing angle LCD display

Meets MED 96/98/EC, "Wheel mark" requirements



Other features

- One touch access to Channel 16 or call channel
- Highly visible yellow colored body
- Bright LED indicator on the top of panel



OPTIONS

LITHIUM BATTERY PACK <For survival craft>



BP-234
9.0V/3300mAh primary battery pack.

Li-Ion BATTERY PACK <For on-board use>



BP-252
7.4V/980mAh

REGULAR CHARGER <For on-board use>



BC-173



BC-147E

BELT CLIP



MB-103Y

IC-GM651

VHF MARINE TRANSCEIVER

Compact, Affordable and Class A DSC Radio Telephone

Meets GMDSS requirements

The IC-GM651 is a compact VHF radio telephone with a Ch 70 watch keeping receiver and CLASS A DSC functions. The radio meets the GMDSS requirements as required for SOLAS regulated commercial vessels engaging in international voyages. With the optional PS-250 DC-DC power supply, the IC-GM651 also meets MED 96/98/EC, “wheel mark” requirements for European merchant ships.



Built-in ITU Class A DSC

An independent DSC receiver constantly watches Ch 70 VHF DSC channel, while using another channel. The Class A DSC provides automated distress and safety communication. Received distress signals can be relayed to a coast station. A total of 100 MMSI IDs can be stored with a 10-character name.



PS-250 DC-DC power supply & PS-240 AC-DC power supply available

The optional PS-250* DC-DC power supply offers stable 12.5V power to the IC-GM651 from a 12V/24V DC (10.8–31.2V DC) power source and provides floating ground connection. The optional PS-240 AC-DC power supply unit is also available with the PS-250. When connecting a storage battery to the PS-240, the PS-240 automatically switches the power source for backup, even if the AC power fails.

* The PS-250 MUST BE USED with the IC-GM651 for MED certification compliance.

HS-98 Handset and/or HM-126RB-1 speaker-microphone selectable

The IC-GM651 gives you the choice of a handset and/or speaker-microphone. The handset provides clear audio even in noisy environments. The speaker-microphone has a remote control function to control operating channel and transmit power with dedicated buttons.



Rugged and waterproof construction* for professional use

To withstand harsh marine environments, the IC-GM651 has been tested to and passed the rigorous salt spray test. In addition, the front panel of the IC-GM651 has waterproof protection equivalent to IPX7 which withstands 1m depth of water for up to 30 minutes.



* The front panel of the IC-GM651 only.

Large full dot-matrix display

The large full dot-matrix display provides an easy-to-see user friendly graphical interface. DSC operations can be made easily with the operation guide on the bottom line of the display such as “ENT” to Set (OK), “CLR” to Go back (BACK), “F8” to Print (PRT), etc. The message icon (☑) on the display shows you have a new DSC message.



Superior receiver performance

The IC-GM651 has excellent receive performance which allows a weak signal a better chance of being heard when louder signals are around it. The powerful audio output from the front facing large 66mm diameter speaker further increases the audibility and quality of received calls.

and High Performance eophone



Versatile extendability

The IC-GM651 has various connectors to connect with external equipment.

- VDR (Voyage Data Recorder) connector
- Printer connector (D-SUB 25-pin)
- GPS receiver connection: IEC61162-1 input
- Navigation equipment connection: IEC61162-1 output
- External speaker connection

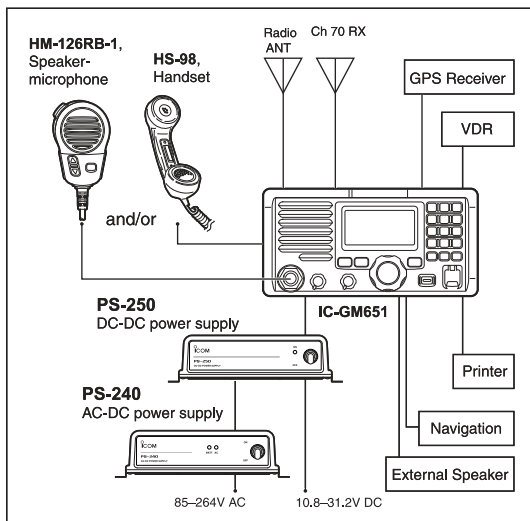
Slim dimensions for clean installation

The 109.4 mm* depth and 4x8" stylish design is easy to install into a limited space. Flush mount installation is available with the MB-75 flush mount kit.

* Projections are not included.

Other features

- Slim dimensions for clean installation
- Priority/normal scan
- Dualwatch/Tri-watch functions
- Instant access to Ch. 16 or call channel
- 7 level adjustable backlit display and keypad
- AquaQuake water draining function



OPTIONS

HANDSET



HS-98

SPEAKER MICROPHONE



HM-126RB-1

FLASH MOUNT KIT



MB-75

AC-DC POWER SUPPLY



PS-240
Input 85-264V AC.
Output 14.5V DC.

DC-DC POWER SUPPLY



PS-250
Input 12/24V DC.
Output 12.5V DC.

IC-M801GMDSS

MF/HF MARINE TRANSCEIVER

Class A DSC Safety Function with Icom's Technology

Meets GMDSS requirements

The IC-M801GMDSS is designed for Class A DSC operation. With the optional AT-141 antenna tuner, it provides a complete GMDSS MF/HF communication system as required for Commercial Solas regulated vessels voyaging in the A2 sea area. The radio also meets MED 96/98/EC, "wheel mark" requirements for European merchant ships.



Built-in ITU Class A DSC

An independent DSC receiver constantly watches MF/HF DSC channels, while using another channel. The DSC allows you to call intended ship(s) or coast station(s) directly as well as all ships in the geographic area. A total of 100 MMSI IDs can be stored with a 10-character name. In addition, the self test function allows you to check the DSC functions.



Built-in DC-DC converter

The IC-M801GMDSS has a built-in DC-DC power converter, which provides stable 13.6V DC converted from a 24V DC power supply. A floating ground system is employed.

Optional automatic antenna tuner, AT-141

The optional AT-141, automatic antenna tuner, tunes all frequencies in all modes. If the tuner cannot tune the antenna, the IC-M801GMDSS bypasses the tuner and displays an alert on the display. The AT-141 is tested to IP56 rating for dust and powerful water jet protections.

Large LCD with full dot-matrix characters

The IC-M801GMDSS has a large full dot-matrix display which displays frequency or channel name. You can easily read the alphanumeric channel name, operating frequency, DSC setting, time, position, etc.

Powerful output power

A powerful 125W* (PEP) transmitter provides long distance communication you can rely on. A large aluminum chassis keeps the radio cool even during high duty cycle operation such as RTTY or E-mail operation.

* 85W (PEP) between 1.6–3.999MHz



Simplified operation

All channels are grouped in 20 channel groups. Large independent group and channel knobs provide quick and easy channel selection. You can also directly enter a channel number from the 10-key pad.

General coverage receiver

Wide band, general coverage receive capability is available from 0.5 to 29.999MHz.

Rugged construction

The main unit is covered with a rugged aluminum casing, protecting internal parts from impact or salt corrosion. With the optional stainless steel one-action bracket, MB-108, the main unit can be tightly installed or easily removed from a flat surface.

Numerous operating modes

The IC-M801GMDSS provides SSB, AM, CW, FSK and AFSK mode operation. The advanced DSP provides flexible filter settings and optional filters are no longer required for narrow band mode operation.

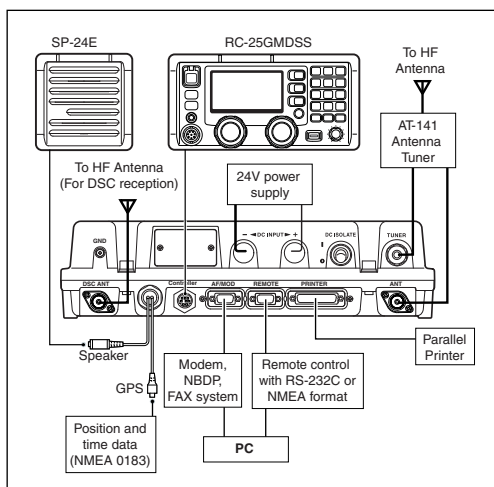
Functionality Combined Technology and Value



Versatile extendability

The IC-M801GMDSS has various connectors to connect with external equipment. (See below diagram)

- GPS connector
- D-SUB connector for NBDP
- IEC61162-1 connector for PC remote control



Versatile configuration

The controller and speaker are separated from the main (RF) unit. The supplied 5m separation cable or optional 10m separation cable (OPC-1575) can be used with the controller.

Other features

- Voice squelch control
- Scan resume, program scan and adjustable scan speed
- Max 160 programmable channels
- RF gain control



OPTIONS

**AUTOMATIC
ANTENNA
TUNER**



IP56

AT-141

**SHIELDED CONTROL
CABLE**
(10m)



OPC-1465

MOUNTING BRACKET



MB-108

Photo shows installation example.

FLASH MOUNT KIT



MB-75

**HAND
MICROPHONE**



HM-135

HANDSET



HS-98

SEPARATION CABLE
(10m)



OPC-1575

**SPEAKER EXTENSION
CABLE**
(5m)



OPC-1610

• **REMOTE CONTROLLER
RC-25GMDSS**

• **EXTERNAL SPEAKER
SP-24E**

SPECIFICATIONS

VHF MARINE TRANSCEIVERS

| | IC-GM1600E | IC-GM651 |
|---|-------------------------|---|
| Frequency range (Unit:MHz) | Tx/Rx:156.300-156.875 | Tx: 156.000-161.450 Rx: 156.000-163.425 |
| Type of emission | 16K0G3E (FM) | 16K0G3E (FM), 16K0G2B (DSC) |
| Power supply requirement | 7.2V DC | Use with PS-250 (10.8-31.2V with PS-250) |
| Dimensions (projections not included; W×H×D) | 65×145×44 mm | 220×110×109.4 mm |
| Weight (approx.) | 385g (With BP-234) | 1600g |
| Current drain (approx.) | Transmit (High) | 3.5A max.* |
| | Max. audio | 200mA |
| RF output power | 2/1W | 25/1W |
| Frequency stability | ±1.5kHz | ±0.3kHz |
| Sensitivity (at 20dB SINAD; emf) | -2dBμ typ. | -5dBμ typ. |
| Spurious response | 70dB | 73dB |
| Audio output power | 200mW (with 8Ω load) | 2W* (with 4Ω load) |

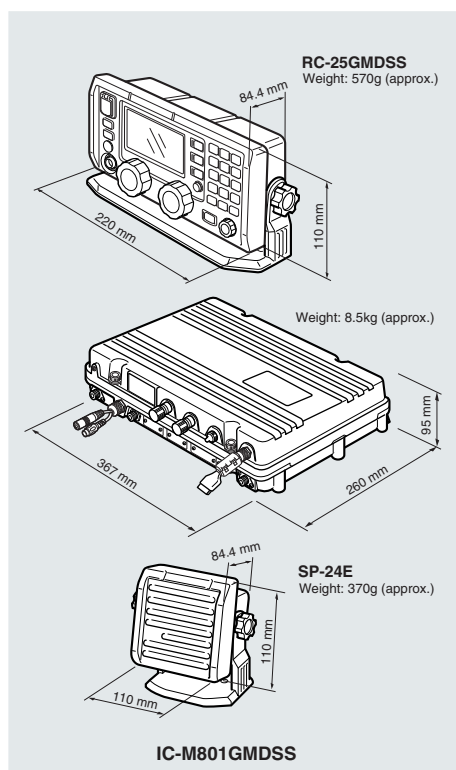
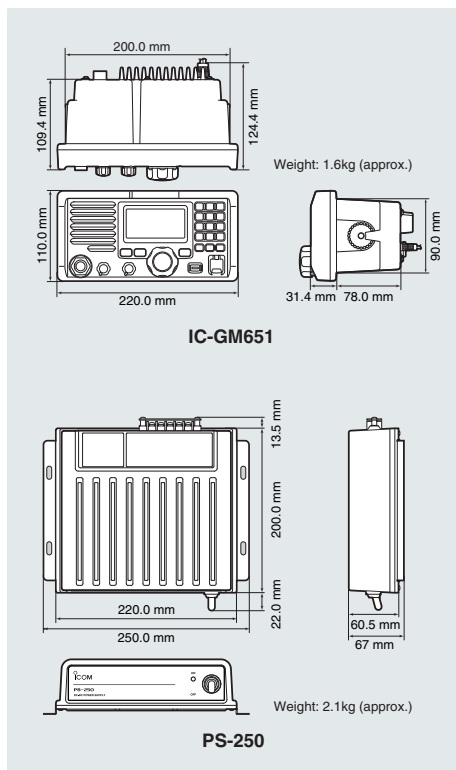
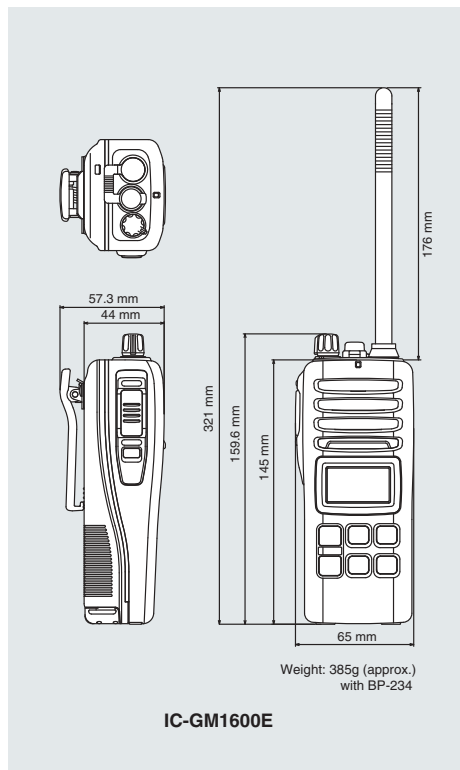
Measurements made in accordance with IEC61097-12 for IC-GM1600E and EN 301-925 for IC-GM651. The IC-GM651 specifications are valid when the IC-GM651 is used with the PS-250.

* IC-GM651 with PS-250 (at 24V)

HF/MF MARINE TRANSCEIVERS

| | IC-M801GMDSS |
|---|--|
| Frequency range (Unit:MHz) | Tx: 1.6-2.999, 4.0-4.999, 6.0-6.999, 8.0-8.999, 12.0-13.999, 16.0-17.999, 18.0-19.999, 22.0-22.999, 25.0-27.500 Rx: 0.5-29.9999 |
| Type of emission | J3E (USB/LSB*), J2B (AFSK), F1B (FSK*, DSC), A1A* (CW), H3E* (AM) * Receive only. |
| Power supply requirement (Floating ground) | 21.6-31.2V (24V) DC |
| Dimensions (projections not included; W×H×D) | Main unit: 367×95×260 mm |
| | Controller unit: 220×110×84.4 mm |
| | Speaker: 110×110×84.4 mm |
| Weight (approx.) | Main unit: 8.5kg |
| | Controller unit: 570g |
| | Speaker: 370g |
| Current drain (approx.) | Transmit (High) |
| | Max. audio |
| RF output power (With AT-141) | 85W (1.6-3.999MHz) 125W (4.0-27.500MHz) |
| Sensitivity (at 20dB SINAD; 1.8-29.999MHz) | J3E, A1A, J2B, F1B : 8dBμV emf |
| | H3E (1.8-3.999MHz) : 24dBμV emf |
| Spurious response | 70dB (0.5-29.999MHz) 50dB (DSC, except 1st IF image) |
| Audio output power (10% dist/ 4Ω load) | 4.0W typ. |

Measurements made in accordance with EN300 373-1 and EN300 338 for IC-M801GMDSS.



All stated specifications are subject to change without notice or obligation.

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