



Icom and Marine Radio

Made in Japan Quality and Reliability

Icom Inc. is a wireless communications manufacturing company located in Osaka, Japan. Icom is a rare example of a Japanese electronic manufacturer that has kept its production base in Japan. The Wakayama Icom plants have advanced production systems to produce small or large volume/multi-model wireless communication products at the highest reliability and quality.



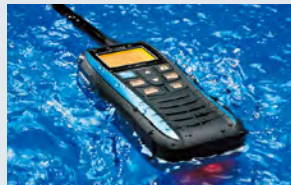
Wakayama Icom plant

Over 30 Years of “World Firsts”

We have a proud history as a pioneer of innovative technology that has shaped the marine market today. Icom has continuously introduced “world firsts” like the first submersible radios, first Li-ion powered radios and first floating radios and numerous best sellers.



Submersible image



Floating image

NMEA Awards

Icom has won multiple NMEA Marine Radio Awards in various categories over the years. Most recently, the IC-M605 won the 2017 NMEA Award for the Best VHF Marine Radio.



Piloting the Industry

Icom's reputation as the benchmark in the marine radio industry does not simply stop there. Overall user experience, durability and strict legal compliance are also recognized as the world standard.



VHF Handheld



Slim, Floating DSC Transceiver with Integrated GNSS Receiver

VHF MARINE TRANSCEIVER with DSC **IC-M93D**

FEATURES

- 2.3" large high visibility LCD
- Slim floating DSC transceiver
- Intuitive user interface
- Built-in Class D DSC with a CH70 receiver
- Float'n Flash and MOB auto set function
- Integrated GNSS receiver
- Active noise canceling

• IPX7 submersible protection • Navigation function • 50 waypoint memories • Weather alert function • Dual watch and Tri-watch functions • Favorite channel function • AquaQuake™ prevents audio degradation from a water-logged speaker • Optional speaker-microphones, HM-228/HM-165

Included Accessories

- BP-285 battery pack • BC-220 battery charger
- BC-123SA/SE* AC adapter • MB-133 belt clip
- FA-SC59V antenna • CP-25H cigarette lighter cable
- Hand strap * Depending on version.

Transceivers



Photo shows FA-S59V antenna version.

1.5 m Submersible, 6 W VHF with Professional Features

VHF MARINE TRANSCEIVERS

IC-M73 PLUS IC-M73

FEATURES

- Last call voice recording*
- Active noise canceling*
- Bass Boost function*
- IPX8 Submersible Plus™ (1.5 m/ 30 min.)
- 6 W RF output, 700 mW loud audio
- 17 hours of long lasting operating time with BP-245H

* Available in IC-M73 PLUS version only.

• Dual watch and Tri-watch functions • Instant access to Ch 16 and call channel • Weather alert functions (USA version only) • AquaQuake™ • Auto power save • Auto scan function • Priority and normal scan • Tag scan and favorite channel function • Optional speaker-microphones, HM-167/HM-202

Included Accessories

- BP-245H battery pack • BC-210 battery charger
- BC-123SA/SE* AC adapter • MB-103 belt clip
- FA-S59V or FA-S64V* antenna • CP-25H cigarette lighter cable
- Hand strap * Depending on version



Clear Voice Boost and it Floats!

VHF MARINE TRANSCEIVER

IC-M36

FEATURES

- Floating transceiver, even with HM-165
- Noise canceling microphone
- Automatic volume adjustment
- Volume boost and mute functions
- Large buttons and easy to grip
- 6 W RF output, 700 mW loud audio
- IP57 dust-protection and submersible protection

• Dual watch and Tri-watch functions • Instant access to Ch 16 and Ch 9 • Weather alert functions (USA version only) • AquaQuake™ • 2-step power save • Auto scan function • Tag scan and favorite channel function • Optional speaker-microphone, HM-165

Included Accessories

- BP-252 battery pack • BC-173 battery charger
- BC-147SA/SE* AC adapter • MB-109 belt clip
- FA-SC58V antenna • Hand strap
- * Depending on version



Marine Blue

Metallic Gray

Pearl White

Three Color Choices, Smart, Fast USB Charging

VHF MARINE TRANSCEIVER

IC-M25

FEATURES

- Slim body, lightweight and high performance
- Large LCD and intuitive user interface
- Micro-B USB charging
- Floating with blinking red LED light
- 11 hours of long operating time
- 5 W RF output, 550 mW clear audio

• IPX7 submersible protection • Dual watch and Tri-watch functions • Instant access to Ch 16 and call channel • Weather alert function (USA version only) • AquaQuake™ • 2-step power save • Auto scan function • Tag scan and favorite channel function • 3 hours rapid charging (with BC-217SA/SE*) • Optional speaker-microphone, HM-213 * Depending on version

Included Accessories

- BC-217SA/SE* USB charger • MB-133 belt clip
- FA-SC59V antenna • Hand strap • Battery cell is built-in
- * Depending on version



VHF Handheld Transceivers



A Marine and Land Mobile Radio Combined in One

VHF MARINE TRANSCEIVER **IC-M85**

FEATURES

- Compact and lightweight
 - Marine and land channel groups
 - 100 programmable land channels
 - Built-in Voice Scrambler
 - Automated emergency alarm with Man Down, Lone Worker and MOB Alarm functions
 - 700 mW loud audio
 - Built-in CTCSS and DTCS tones
- IP67 dust-tight and submersible protection • Dual watch and Tri-watch functions • Instant access to Ch 16 and call channel • Weather alert function • Aqua-Quake™ • Auto power save • Tag scan and favorite channel function • 14 hours of long battery life (TX: RX: Standby=5:5:90.) • MIL-STD rugged construction • Internal VOX capability for hands-free operation • Variety of audio accessories

Supplied Accessories

- BP-290 battery pack • BC-227 rapid charger • BC-123SA/SE* AC adapter
 - MBB-3 belt clip • FA-SC58V antenna • Hand strap
- * Depending on version.



Compact Size for Commercial or Recreational Use

VHF MARINE TRANSCEIVER **IC-M88**

FEATURES

- Tough and submersible compact body
 - Marine and land channel groups
 - 22 programmable land channels
 - Built-in CTCSS and DTCS tones
 - IPX7 submersible protection
- Dual watch and Tri-watch functions • Instant access to Ch 16 and Ch 9 • Weather alert functions (USA version only) • Auto power save • Auto scan function • Tag scan function • Optional speaker-microphones, HM-168/HM-138

Included Accessories

- BP-227/BP-274* battery pack • BC-152N battery charger
 - BC-147SA/SE* AC adapter • MB-86 belt clip
 - FA-S59V antenna • Hand strap
- * Depending on version.



5 W Output Power for Hazardous Locations

VHF MARINE TRANSCEIVER **IC-M88** UL Version

FEATURES

- Nonincendive: Class I, Division 2, Groups A, B, C, D T6 ($\leq 85^{\circ}\text{C}$)
 - Tough and compact body
 - Marine and land channel groups
 - 22 programmable land channels
 - IPX7 submersible protection
- Built-in CTCSS and DTCS tones • Dual watch and Tri-watch functions • Instant access to Ch 16 and call channel • Auto power save • Auto scan function • Tag scan function • Built-in Voice Scrambler (Depending on version) • Optional speaker-microphone, HM-168IS

DO NOT use the transceiver with any other equipment not specified in the option list (Pages 14–16). Please ask your dealer to ensure the rating is acceptable for the intended place of use.

Included Accessories

- BP-227UL battery pack • BC-152N battery charger
- BC-147SA AC adapter • MB-86 belt clip
- FA-S59V antenna • Hand strap



VHF Fixed Mount Transceivers

Premium Grade Modern Fixed Mount Radio Class D DSC, AIS Receiver and Remote Control

VHF MARINE TRANSCEIVER **IC-M605**



AIS plotter

TARGET LIST (93)			
MMSI/Name	RNG	BRG	
DAIEMARU NO.3	3.3	154	
GYOKO MARU	3.4	147	
MIRAI E	3.4	249	
TOKUYO MARU NO21	3.9	259	

AIS target list



Night mode



FEATURES

- Wide viewing angle, high contrast 4.3 inch color TFT LCD
- Remote control with up to three COMMAND HEAD™/COMMANDMIC™
- **Integrated AIS receiver*** • **Built-in Class D DSC**
- NMEA 2000™ connectivity • Intuitive user interface
- Class leading receiver performance (Selectivity and IMD: more than 80 dB)
- Active noise canceling • Last call voice recording for two minutes
- 30 W two-way hailer • Optional horn speaker, SP-37
- Integrated GNSS receiver (GPS, GLONASS and SBAS), 5 m cable and antenna supplied

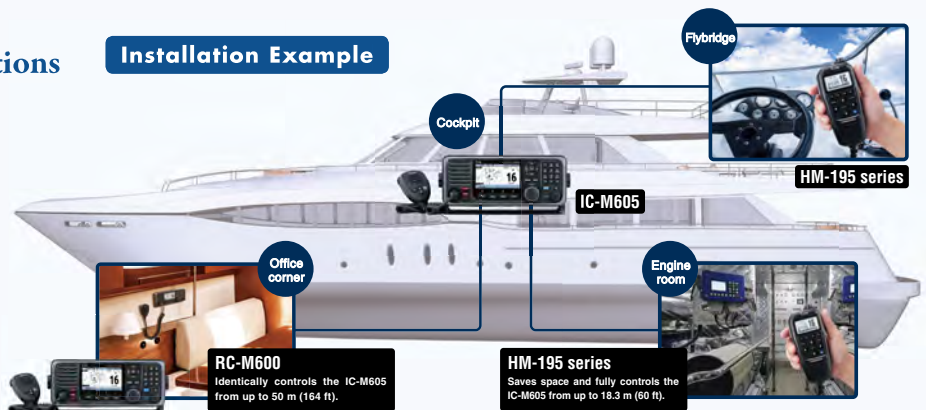
- NMEA 0183-HS (High Speed) Version 1.01 connectivity (38.4 kbps)
- IPX8 submersible plus (1m depth water for 60 minutes)
- DSC multi-task function
- RX hailer and automatic foghorn functions
- Dual watch and Tri-watch functions
- Instant access to Ch 16 and Call channel
- Tag scan and favorite channel functions
- AquaQuake™ prevents audio degradation from a water-logged speaker
- Priority scan function
- Display and keypad backlighting
- External speaker connection
- Optional voice scrambler, UT-112

* AIS receiver unit is an option, depending on version.

Flexible Remote Control Configurations

The IC-M605 can be remotely controlled with up to three COMMAND HEAD™/COMMANDMIC™. The COMMAND HEAD™ provides identical operation with the IC-M605 and the COMMANDMIC™ allows you to use all functions including distress of the IC-M605. The intercom function among the IC-M605, COMMAND HEAD™ and COMMANDMIC™ is convenient for internal conversation.

Installation Example



Identical Operation from Optional Full-sized Controller

COMMAND HEAD™ **RC-M600**



Space-Saving Compact Body

COMMANDMIC™ **HM-195GB/GW** (White Backlight LCD) **HM-195B/SW** (Amber Backlight LCD)



* Photo shows HM-195GB.



VHF Fixed Mount Transceivers

VHF and AIS Receiver Combo with NMEA 2000™ Connectivity

VHF MARINE TRANSCEIVER **IC-M506**



HM-195GB
COMMANDMIC™,
HM-195 series capable

FEATURES

- AIS** Integrated AIS receiver*
- AIS** **NMEA 2000™** connectivity*
 - 2 minutes Last Call voice recording
 - Intuitive user interface
 - Active noise canceling
- 15 W loud audio and 25 W two-way hailer
- Optional COMMANDMIC™, HM-195 series
- IPX8 Submersible Plus™ (1 m depth for 60 minutes)
- Built-in Class D DSC

* **AIS** **NMEA 2000™** AIS receiver, NMEA 2000™ interface units are options, depending on version.

- Dual watch and Tri-watch functions
- Instant access to Ch 16 and Call channel
- Weather alert functions (USA version only)
- Tag scan and favorite channel functions
- AquaQuake™
- Display and keypad backlighting
- External speaker connection
- Option voice scrambler UT-112
- Large dot-matrix display
- Rear panel microphone version

Easy-to-Use and Even Easier to Hear

VHF MARINE TRANSCEIVER **IC-M424G** (With GPS Receiver)



HM-195GB
COMMANDMIC™,
HM-195 series capable

FEATURES

- Intuitive user interface
- Active noise canceling
- 10 W loud audio, public address and foghorn
- Optional COMMANDMIC™, HM-195 series
- IPX7 submersible
- Black and Super White color versions
- Integrated GPS receiver simplifies wiring
- Built-in Class D DSC

- Dual watch and Tri-watch functions
- Instant access to Ch 16 and Call channel
- Weather alert functions (USA version only)
- Tag scan and favorite channel functions
- AquaQuake™
- Display and keypad backlighting
- External speaker connection
- RX speaker function

Black Box Transceiver When Space is at a Premium

VHF MARINE TRANSCEIVER **IC-M400BB**



IC-M400BB and
HM-195B

FEATURES

- Space-saving, fully functional VHF/DSC
- Controlled by COMMANDMIC™ HM-195 series*
- Intuitive user interface
- Active noise canceling
- 10 W loud audio, public address and foghorn
- IPX7 submersible (Both IC-M400BB and HM-195 series)
- Built-in Class D DSC

* HM-195 series may be sold separately, depending on version.

- Dual watch and Tri-watch functions
- Instant access to Ch 16 and call channel
- Weather alert functions (USA version only)
- Tag scan and favorite channel functions
- AquaQuake™
- Display and keypad backlighting
- External speaker connection
- RX speaker function



VHF Fixed Mount Transceivers

Top Performance Ultra Compact VHF

VHF MARINE TRANSCEIVER

IC-M330G

(With GNSS Receiver)

VHF MARINE TRANSCEIVER

IC-M330

(Without GNSS Receiver)



Supplied GPS antenna (IC-M330G).



Photo shows IC-M330G black version.



Photo shows IC-M330G white version.

FEATURES

- Ultra compact body (35 % smaller than the IC-M324/G)
- Dynamic, clear audio from bass to treble
- Built-in Class D DSC
- Uncompromised receiver performance (Selectivity and IMD: more than 70 dB)
- Intuitive user interface
- Built-in GNSS receiver with a supplied GNSS antenna (IC-M330G)
- Easy-to-read full dot-matrix display
- IPX7 submersible (1 m depth for 30 minutes)
- Dual watch and Tri-watch functions
- Instant access to Ch 16 and Call channel
- Weather alert functions (USA version only)
- Tag scan and favorite channel functions
- Aqua-Quake™
- Priority scan function
- Display and keypad backlighting
- External speaker connection
- Black and white color versions

Affordable, Simple VHF without DSC Function

VHF MARINE TRANSCEIVER

IC-M200



FEATURES

- Compact and IPX7 submersible body
 - Large easy-to-see LCD
 - Loud audio from front mount speaker
 - 25 W output power
 - Uncompromised receiver performance (Selectivity and IMD: more than 70 dB)
 - Favorite channel function
 - Programmable scan function
 - Priority scan function
 - Dual watch and Tri-watch functions
 - AquaQuake™
 - MIL 810G durability
 - Keypad backlighting
- * IC-M200 is not available in the USA.



AIS Transponder

Fully Capable Class B AIS Transponder

CLASS B AIS TRANSPONDER

MA-500TR



MXG-5000S GPS receiver



FEATURES

- Class B AIS transponder
 - Large full dot-matrix display
 - CPA and TCPA collision-risk management
 - AIS target call with Icom VHF transceiver
 - 100 waypoint memories
 - 3-line NMEA input/output
 - MXG-5000S GPS receiver*
- * The MXG-5000S may be sold separately, depending on country.



MF/HF Marine Transceiver

Advanced Marine SSB with Compact Remote Head

MF/HF MARINE TRANSCEIVER
IC-M802



Photo shows the IC-M802 USA version.

FEATURES

- Wideband receiver coverage (0.5–29.9999 MHz)
- Large dot-matrix display
- One-touch e-mail access button*
* Depending on version. Please consult with an HF e-mail provider for details.
- Flexible filter settings with built-in DSP
- Optional automatic antenna tuner, AT-140
- 150 W (PEP) powerful output
- Built-in Class E DSC* * Depending on version.
- DIN and RS-232 connectors for external equipment

Reliable MF/HF Radio with Covering All ITU HF Marine Channels

MF/HF MARINE TRANSCEIVER
IC-M710



FEATURES

- Alphanumeric readout for programming channel names and quick access to channels
- 150 W* full duty operation • A total of 1136 channels
- Rugged construction for withstanding harsh use
* 60 W (PEP) above 24 MHz bands.
- Programmed scan, channel scan and channel resume scan
- 0.5 to 29.9999 MHz wide band general coverage receiver
- USB, LSB, AM, CW, FSK and AFSK modes (Available modes may differ depending on version.)
- RF gain control
- NMEA 0183 interface
- Two DIN connectors for external equipment connection
- Audio activated squelch
- Terminals for frequency/mode control through NMEA interface
- Large front speaker
- Weather fax ready
- Backlight control
- CW full break-in and semi break-in

* IC-M710 is not available in the USA.

Simplified Radio Telephone with 150 W Full Duty Operation

SSB RADIO TELEPHONE
IC-M700PRO



FEATURES

- Quick channel selection with two large knobs
- 150 W* full duty operation
- Rugged construction for withstanding harsh use
- Large, easy-to-read green LCD
- Channel scan and channel resume scan
- 0.5 to 29.9999 MHz wide band general coverage receive
- USB, LSB, AM, CW, FSK and AFSK modes (Available modes may differ depending on version.)
- NMEA 0183 interface
- Two DIN connectors for external equipment connection
- Audio activated squelch
- Terminals for frequency/mode control through NMEA interface
- Large front speaker
- Weather fax ready
- Backlight control
- CW full break-in and semi break-in

* IC-M700PRO is not available in the USA.



Marine Radars

12.1-inch Color TFT Marine Radar

COLOR TFT MARINE RADARS

MR-1210RII MR-1210TII MR-1210TIII



6.5 ft Open Scanner for MR-1210TII/TIII



4 ft Open Scanner for MR-1210TII/TIII



2 ft Radome Scanner for MR-1210RII

FEATURES

- 12.1-inch color TFT display (600 × 800 dots)
- Three types of scanner units
 - MR-1210RII: 36 NM range, 4 kW radome scanner
 - MR-1210TII: 48 NM range, 4 kW open array scanner (6.5 ft type and 4 ft type)
 - MR-1210TIII: 72 NM range, 6 kW open array scanner (6.5 ft type and 4 ft type)
- Intuitive user interface
- Multi-Language Interface (English, Spanish, Vietnamese, Indonesian, Korean and Thai)
- AIS overlay and favorite AIS functions*1
- Simplified ATA (Automatic Tracking Aid) function
- Stabilized head up mode*1
- True trail function*1
- TLL (Target Latitude Longitude) function*1
- Optional video output unit, UX-234 for connection with an external display

*1 External data such as AIS, heading sensor and/or NMEA 0183 required separately.

* MR-1210 marine radar is not available in the USA.

Credits: This product includes "zlib," "libevent," "libusb" and "freetype" open source software, and is licensed according to the open source software license.

Simplified ARPA, AIS Target Plotting and DSC Information Display

COLOR TFT MARINE RADAR

MR-1010RII



2 ft Radome Scanner



FEATURES

- 10.4-inch color TFT display (480 × 640 dots)
- 36 NM range, 4 kW radome scanner
- Intuitive user interface
- Multi-Language Interface (English, Spanish, Vietnamese, Indonesian, Korean and Thai)
- AIS overlay and favorite AIS functions*1
- Simplified ARPA (Automatic Radar Plotting Aids) function*1
- DSC information function*1
- True trail function*1
- TLL (Target Latitude Longitude) function*1
- Optional video output unit, UX-252 for connection with an external display

*1 External data such as AIS, DSC, heading sensor and/or NMEA 0183 required separately.

*MR-1010RII marine radar is not available in the USA.

GMDSS

Global Maritime Distress and Safety System

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.

Class A DSC VHF Radio with Wide Viewing Angle Color TFT LCD

VHF MARINE TRANSCEIVER

GM600



PS-310 DC-DC converter

Reliable Long Distance MF/HF Communication

MF/HF MARINE TRANSCEIVER

GM800



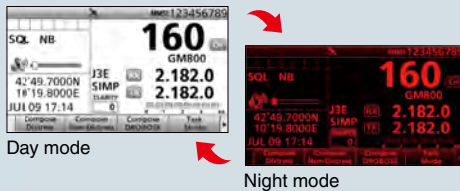
(Type approval pending as of December 2017.)





FEATURES

- Meets VHF GMDSS requirements for SOLAS ships
- Certified for European Maritime Equipment Directive (MED)
- ITU Class A DSC (Meets ITU-R M.493-13)
- Large and high contrast 4.3-inch color TFT LCD
- Intuitive user interface for straightforward operation
- 10 W audio output power with external speaker
- Dedicated DSC watch receiver for continuous Channel 70 monitoring
- Printer connector (D-SUB 25-pin) • VDR (Voyage Data Recorder)/External speaker connector
- IEC 61162-1 input/output • Superior sound quality with a wide frequency range and a flat frequency response
- Optional handset, HS-98 (#16) • IPX7 submersible for front panel
- Dual watch and Tri-watch functions • Instant access to Ch 16 and call channel
- Tag scan and favorite channel functions • Priority scan function
- Unified design with GM800 (MF/HF)
- * GM600 is not available in the USA.



Day mode

Night mode

FEATURES

- Meets MF/HF GMDSS requirements for SOLAS ships
 - Will meet European Maritime Equipment Directive (MED*1)
 - ITU Class A DSC (Meets ITU-R M.493-13)
 - Large and high contrast 4.3-inch color TFT LCD
 - Intuitive user interface for straightforward operation
 - Dedicated DSC watch receiver for continuous scanning of the six distress channels
 - Optional automatic antenna tuner, AT-141
 - 125 W*2 (PEP) output power • Built-in 24 V DC-DC converter
 - Parallel printer port • External SP connector
 - IEC 61162-1 input/output • Superior sound quality with a wide frequency range and a flat frequency response
 - Supplied handset, HS-98 (#17) • IPX7 waterproof for controller
 - Maximum 160 programmable channels • Program scan, channel scan and channel resume scan
 - Unified design with GM600 (VHF)
 - *1 Type approval pending as of December 2017. *2 85 W (PEP) 1.6–3.999 MHz
- All stated features, appearances, screen shots and specifications may be subject to change without notice.
- Please Note:** The complete GMDSS installation for MF/HF DSC (Class A) and telephony additionally requires the optional antenna tuner, AT-141.
- * GM800 is not available in the USA.



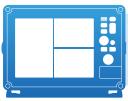
SURVIVAL CRAFT 2-WAY RADIO IC-GM1600 GMDSS Portable for Survival Craft

FEATURES

- Meets strict environmental requirements for GMDSS
- 2 W output power and long lasting battery
- Primary (non-rechargeable) lithium battery pack, BP-234
- Highly visible yellow-colored body
- Instant access to Ch 16 and call channel • Auto power save • 4-step battery indicator

Included Accessories

- BP-252 battery pack • BC-173 battery charger
- BC-147SA/SE* AC adapter • MB-103Y belt clip
- FA-S61V antenna (Fixed type) • Neck strap
- * Depending on version



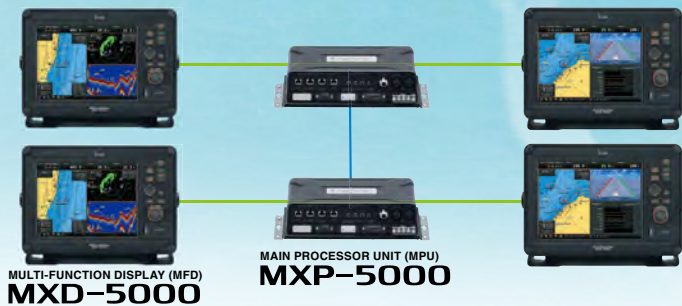
System Overview

The MarineCommander™ is Icom's marine navigation system, which integrates various marine modules such as a fish finder, marine radar, AIS and VHF transceiver into the multi-function display (MFD).



Affordable Dual Display Connection Up to Four Displays in a System

The MarineCommander allows you to connect two MFDs simultaneously. All connected modules including chart data, fish finder and marine radar can be shared with two MFDs and provide separate operation. When connecting two MarineCommanders via a data cable, up to 4 displays can be used and C-MAP™ chart data can be shared in the system.



Daylight Viewable Display

The 12.1-inch size MFD provides 800 x 600 pixels resolution. The 900 cd/m² color LCD with anti-reflecting surface coating glass offers bright, vivid indication in detail – even under direct sunlight.



C-MAP™ MAX Compatible

The MarineCommander is compatible with the C-MAP™ MAX chart by C-MAP Italy S.r.l. in an SD card format*. The MarineCommander provides quick and fast responding rendering performance. The C-MAP™ MAX chart provides guardian alarm, route-check, perspective view and port database for your safe and easy navigation.



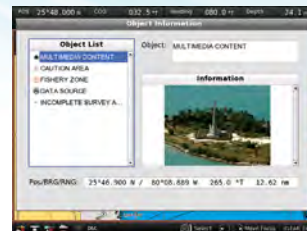
* Chart data is not supplied from Icom.



Perspective view (bird view)



Chart plotter



Object information of the C-MAP™ chart data base



Nav-course monitor (upper right) & Nav-waypoint (bottom right)



Marine Radar

The MXR-5000R/T marine radar provides clear target separation. Waypoint and AIS target can be overlaid on the radar screen. The marine radar helps collision avoidance and increases your safety at sea. The radar images can be overlaid on the plotter screen in the same scale and help you to detect dangerous objects.

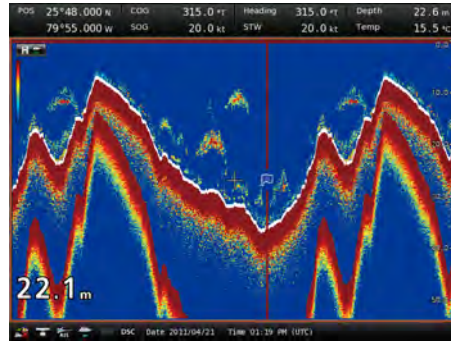


Radar screen



Fish Finder

When a fish finder module is connected, the MarineCommander system can have a dual frequency sounder function. Using the 50 kHz/200 kHz dual frequency mode, the MarineCommander enhances the separation and helps in fish detection.



Sounder screen

MARINE RADAR **MXR-5000T**

- 4 kW, 4 feet (120 cm) open array scanner
- Up to 48 NM observation • 48 rpm high-rotation speed



Radar main unit

MARINE RADAR **MXR-5000R**

- 4 kW, 2 feet (60 cm) radome scanner
- Up to 36 NM observation • 48 rpm high-rotation speed



Radar main unit

FISH FINDER **MXF-5000**



EX-3193

- 600 W transom transducer
- Depth, speed and temperature in one housing
- 50 kHz and 200 kHz dual frequency



EX-3194

- 600 W thru-hull transducer
- Depth, speed and temperature in one housing
- 50 kHz and 200 kHz dual frequency



EX-3195

- 1 kW thru-hull transducer
- Depth and fast-response water temperature sensor
- 50 kHz and 200 kHz dual frequency



VHF Radio and AIS data

The MarineCommander has the capability to be connected to compatible Icom VHF transceivers. Various types of DSC calls, including individual, group, all ship, position and polling request*, can be initiated from the MarineCommander. VHF radio received DSC messages and position information can be shown on the plotter display. The IC-M605 or MA-500TR AIS data can be overlaid on the plotter and radar screen.

* Type of transmitting DSC calls are depending on the connected VHF transceiver's capability.

Other Features

- An analog RGB output connector (D-SUB 15-pin) for an external display connection
- Four analog video input (NTSC or PAL format)
- Multiple language display (English/French/Spanish)
- External NMEA 2000 connectivity (Engine, fuel, engine temperature, wind, GPS, compass, STW) and virtual engine monitor screen
- MXG-5000S GPS receiver
- Memo function allows you to store a comment with picture data* and position information.

* To show picture data, the picture data must be stored in the connected USB flash drive.



IP ADVANCED RADIO SYSTEM

Full-Duplex Communication That Works Over a Wireless LAN and IP Network

System Features

Wireless Communication System among Ship Crews*

By installing wireless access points, the IP advanced radio system can easily deploy along the IP network and communicate throughout in the vessel. The IP100H can access the nearest access point and can roam between access points.

* Please confirm legal requirements in your country before installation.

Individual, Group or Area Communication

The IP100H/IP100FS can make individual call, group conference call, all call and area call. Crews spread across multiple rooms and cabins can communicate seamlessly. The IP communication terminal can receive short data messages with a vibration alert from a PC-installed IP100FS.

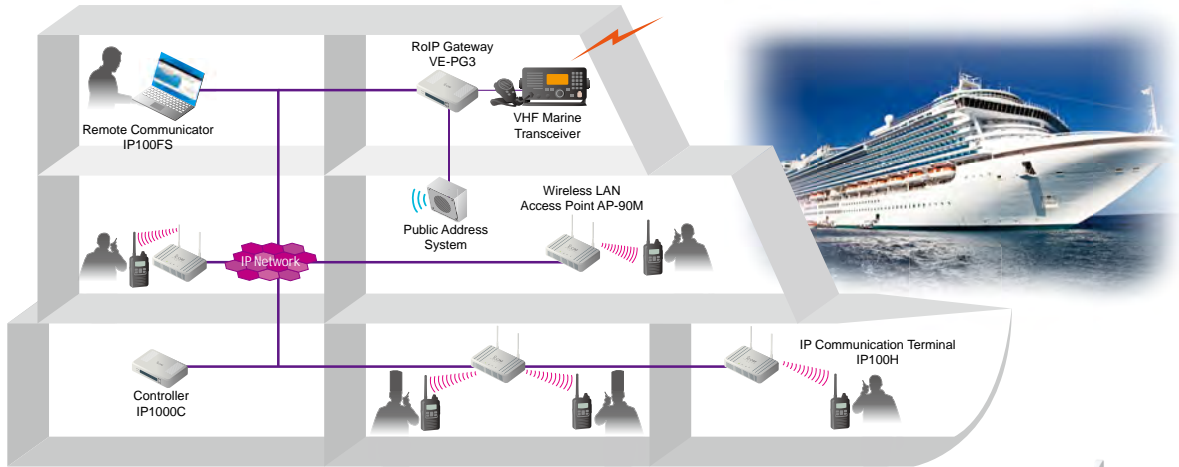
Hands-free, Full-duplex Communication

With optional earphone-mic or headset HS-102 or HS-85*, the IP100H user can simultaneously talk and receive like a phone call. Hands-free operation allows your staff to carry out other tasks at the same time.

* Either HM-153LS, HM-166LS, HS-102 with OPC-2359 or HS-85 with OPC-2144 is required.

Interconnect between VHF Marine Transceiver and Public Address System

With the VE-PG3 RoIP gateway, the IP advanced radio system can interconnect with a VHF marine transceiver, other radio system and a public address system.



IP Communication Terminal **IP100H**

- License-free communication terminal using IEEE 802.11 a/b/g/n standards
- WPA-PSK or WPA2-PSK encryption
- IPX7 submersible (1 m depth water for 30 minutes)
- Compact 58 × 95 × 26.4 mm (2.3 × 3.7 × 1.0 in) body and 205 g (7.2 oz, approximate) light weight
- Vibration alert function for incoming calls
- Tested to the MIL-STD 810G specifications
- Emergency function



Wireless LAN Access Point **AP-90M**

- IEEE 802.11 a/b/g/n/ac compliant
- PoE (Power over Ethernet) capability
- Optional RS-AP3, access point management software



Controller **IP1000C**

- The IP1000C controls all terminal configurations and voice traffic
- Capable of controlling up to 100 or 20* terminals (including IP100FS)

*Depending on version.



RoIP Gateway **VE-PG3**

- Interconnects IP advanced radio system and other radio system*
- Public address system connection
- Telephone interconnection with IP phone and PSTN lines

*Interconnection with VHF marine radio may be prohibited in some countries. Please confirm legal requirements in your country before installation.



Remote Communicator Software **IP100FS**

(Supplied with USB flash drive for use as a USB hardware key)

- The IP100FS can communicate with IP communication terminals from a PC
- The IP100FS can obtain location information of each IP100H based on connection to access points
- Can be installed on a Windows® based tablet PC as well as laptop PC



Options for VHF Handheld Transceivers

MODEL NAME	BATTERY PACKS								BATTERY CASES
	BP-227UL (Li-ion) 7.4 V/1850 mAh (min.) 1950 mAh (typ.)	BP-285 (Li-ion) 7.2 V/1485 mAh (min.) 1570 mAh (typ.)	BP-245H (Li-ion) 7.2 V/2100 mAh (min.) 2250 mAh (typ.)	BP-252 (Li-ion) 7.4 V/940 mAh (min.) 980 mAh (typ.)	BP-290 (Li-ion) 7.2 V/1910 mAh (min.) 2010 mAh (typ.)	BP-227 (Li-ion) 7.4 V/1850 mAh (min.) 1950 mAh (typ.)	BP-274 (Li-ion) 7.4 V/1800 mAh (min.) 1900 mAh (typ.)	BP-234 (Lithium) 9.0 V/3300 mAh (non-rechargeable)	BP-251*1 LR03 (AAA) × 5 cells
IC-M93D		✓							
IC-M73			✓						
IC-M36				✓					✓
IC-M25*2									
IC-M85					✓				
IC-M88						✓	✓		
IC-M88 UL	✓								
IC-GM1600				(On-board use only)				(For survival craft)	

*1 The IC-M36 floats when used with most common brand AAA batteries. Battery weight varies by manufacturer. Please check your IC-M36 for buoyancy in a shallow area first when using AAA batteries.

*2 As the Lithium-ion battery cell (3.7 V 1500 mAh) is built-in to the IC-M25, the user cannot replace the battery cell.

MODEL NAME	BATTERY CASES		DESKTOP CHARGERS						
	BP-291 LR6 (AA) × 5 cells	BP-226 LR6 (AA) × 5 cells	BC-220 Rapid charger	BC-210 Rapid charger	BC-162 Rapid charger	BC-173 Regular charger	BC-219N Rapid charger	BC-225 Intelligent rapid charger	BC-226 Connectable type. Connects up to six BC-226 units.
IC-M93D			✓						
IC-M73				✓					
IC-M36					✓	✓			
IC-M25									
IC-M85	✓						✓	✓	✓
IC-M88		✓							
IC-M88 UL									
IC-GM1600						(On-board use only)			

MODEL NAME	DESKTOP CHARGERS			USB CHARGER	MULTI-CHARGERS		AC ADAPTERS		
	BC-227 Rapid charger	BC-190 Rapid charger	BC-152N Regular charger	BC-217S*4 5 V/1 A	BC-214*6 Rapid charger	BC-197*5 Rapid charger	BC-123S*4 12 V/1 A	BC-145S*4 16 V/0.93 A	BC-147S*4 12 V/200 mA
IC-M93D					✓ (Use with AD-133)		✓ (Use with BC-220)		
IC-M73						✓ (Use with AD-129)	✓ (Use with BC-210)		
IC-M36							✓ (Use with BC-162)	✓ (Use with BC-162)	✓ (Use with BC-173)
IC-M25				✓					
IC-M85	✓				✓ (Use with AD-132N)		✓ (Use with BC-219N, BC-225 or BC-227)		
IC-M88		✓	✓			✓ (Use with AD-128)	✓ (Use with BC-190)		✓ (Use with BC-152N)
IC-M88 UL		✓*3	✓*3			✓*3 (Use with AD-128)	✓ (Use with BC-190)		✓ (Use with BC-152N)
IC-GM1600									✓ (Use with BC-173, On-board use only)

*3 The battery charger must not be used in an explosive atmosphere.

*4 BC-123/BC-145/BC-147/BC-217SA for USA plug, SE for Europe plug, SV for Australia plug.

*5 Either AD-128 or AD-129 is supplied with BC-197, depending on version.

*6 Either AD-133 or AD-132N is supplied with the BC-214, depending on version.

: Applicable : Not applicable

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

Options for VHF Handheld Transceivers

MODEL NAME	AC ADAPTERS		CHARGER ADAPTERS	CIGARETTE LIGHTER CABLES		DC POWER CABLES		READER SOFTWARE	SPEAKER-MICROPHONES
	BC-157S 12 V/7.5 A	BC-228 15 V/4 A	AD-128* ⁵ AD-129* ⁵ AD-132N* ⁶ AD-133* ⁶	CP-25H	CP-23L	OPC-515L	OPC-656	RS-BC225	HM-168IS Submersible
IC-M93D	✓ (Use with BC-214)		✓ (Use AD-133 with BC-214)	✓ (Use with BC-220)					
IC-M73	✓ (Use with BC-197)		✓ (Use AD-129 with BC-197)	✓ (Use with BC-210)		✓ (Use with BC-210)	✓ (Use with BC-197)		
IC-M36									
IC-M25									
IC-M85	✓ (Use with BC-214)	✓ (Use with BC-226)	✓ (Use AD-132N with BC-214)		✓ (Use with BC-219N, or BC-227)	✓ (Use with BC-219N, BC-225 or BC-227)	✓ (Use with BC-214)	✓ (Use with BC-225)	
IC-M88	✓ (Use with BC-197)		✓ (Use AD-128 with BC-197)		✓ (Use with BC-152N)	✓ (Use with BC-152N)	✓ (Use with BC-197)		
IC-M88 UL	✓ (Use with BC-197)		✓ (Use AD-128 with BC-197)		✓ (Use with BC-152N)	✓ (Use with BC-152N)	✓ (Use with BC-197)		✓
IC-GM1600									

MODEL NAME	SPEAKER-MICROPHONES								
	HM-228 Submersible	HM-165 Submersible	HM-202 Submersible	HM-167 Submersible	HM-213 Submersible	HM-222 Waterproof	HM-236 Waterproof	HM-168 Submersible	HM-138 Submersible
IC-M93D	✓	✓							
IC-M73			✓	✓					
IC-M36		✓							
IC-M25					✓				
IC-M85						✓	✓		
IC-M88								✓	✓
IC-M88 UL									
IC-GM1600									

MODEL NAME	TIE-CLIP MICROPHONE	HEADSETS			PTT SWITCH CABLE	EARPHONES			
	HM-163MC	HS-94 Earhook type with boom microphone	HS-95 Behind-the- head type	HS-97 Throat micro- phone type	VS-5MC Manual PTT/ VOX operation	EH-15B	SP-26 Tube earphone	SP-27 Tube earphone	SP-28
IC-M93D									
IC-M73									
IC-M36									
IC-M25									
IC-M85	✓	✓ (Use with VS-5MC)	✓ (Use with VS-5MC)	✓ (Use with VS-5MC)	✓	✓ (Use with HM-163MC)	✓ (Use with HM-163MC)	✓ (Use with HM-222 or AD-135)	✓ (Use with HM-163MC)
IC-M88									
IC-M88 UL									
IC-GM1600									

Options for VHF Handheld Transceivers

MODEL NAME	EARPHONES			ACC ADAPTERS		BELT CLIPS		BELT HANGERS	
	SP-29	SP-32 Tube earphone adapter	SP-40	AD-118 6-Pin Hirose plug adapter	AD-135 3.5 mm jack earphone adapter	MB-86 MB-136	MB-98 MB-103/103Y MB-109 MB-133 MBB-3	MB-96N	MB-96F
						 Photo shows MB-86	 Photo shows MB-109		
IC-M93D							(Use MB-133)		✓
IC-M73						(Use MB-86)	(Use MB-103)	✓	✓
IC-M36							(Use MB-109)		
IC-M25							(Use MB-133)		
IC-M85	(Use with HM-222 or AD-135) ✓	(Use with EH-15B) ✓	(Use with HM-222 or AD-135) ✓	✓	✓	(Use MB-136) ✓	(Use MBB-3) ✓	✓	✓
IC-M88						(Use MB-86) ✓	(Use MB-98) ✓	✓	✓
IC-M88 UL						(Use MB-86) ✓	(Use MB-98) ✓	✓	✓
IC-GM1600						(Use MB-86) ✓	(Use MB-103Y) ✓	✓	✓

MODEL NAME	BELT HANGER	CARRYING CASES		ANTENNAS
	MB-F96FL Long type	LC-187 Charging is possible while the case is attached.	LC-188	FA-S59V FA-S64V FA-SC58V FA-SC59V
				 FA-S59V (left) & FA-S64V (right)
IC-M93D	✓			FA-SC59V
IC-M73	✓			FA-S59V or FA-S64V
IC-M36				FA-SC58V
IC-M25				FA-SC59V
IC-M85	✓	✓	✓	FA-SC58V
IC-M88	✓			FA-S59V
IC-M88 UL	✓			FA-S59V
IC-GM1600	✓			Fixed type









The IC-M88 UL version should only be used with the specified Intrinsically Safe approved options. Some options may not be available in some countries. Please ask your dealer for details.





: Applicable

: Not applicable

Options for VHF Fixed Mount Transceivers

MODEL NAME	HAND MICROPHONES				COMMAND HEAD™	COMMANDMIC™		HANDSET	HORN SPEAKER
	HM-205B/RB/SW Speaker microphone	HM-235B/W	HM-164B	HM-214V	RC-M600 HM-205RB and 10 m; 32.8 ft cable supplied	HM-195B/SW 6.1 m; 20 ft cable supplied	HM-195GB/GW 6.1 m; 20 ft cable supplied	HS-98 (#16)	SP-37
IC-M605	 (HM-205RB)								
IC-M506	✓				✓	✓	✓		✓
IC-M424G	✓					✓	✓		✓
IC-M400BB						✓	✓		✓
IC-M330G		✓							✓
IC-M330		✓							✓
IC-M200			✓						✓
GM600				✓				✓	

MODEL NAME	CONVERSION CABLE	EXTENSION CABLES				DC-DC CONVERTER	FLUSH MOUNT KITS	DUST COVER	VOICE SCRAMBLER
	OPC-2384 12-pin to 8-pin Required for IC-M605 and COMMANDMIC connection	OPC-2377 10 m; 32.8 ft cable for use with COMMAND HEAD	OPC-1541 6.1 m; 20 ft cable for use with COMMANDMIC and rear microphone connection	OPC-1000 6.1 m; 20 ft cable for use with rear microphone connection	PS-310 #01 24 V input #02 12 V input	MB-69 MB-75 MB-132 MBF-5	MB-92	UT-112 Total of 32 voice scramble codes available	
IC-M605	 (Use with HM-195)	 (Use with RC-M600)	 (Use with HM-195, HM-205RB)	 (Use with HM-205RB)		 Photo shows MB-75			
IC-M506			(Use with HM-195, rear mic version)	(For use with rear mic version)		✓		✓	
IC-M424G			(Use with HM-195)			✓			
IC-M400BB			(Use with HM-195)						
IC-M330G						✓			
IC-M330						✓			
IC-M200						✓	✓		
GM600					✓				

MODEL NAME	AIS RECEIVER UNITS		NMEA2000 INTERFACE	GNSS ANTENNA
	UX-251	UX-231	UX-232	UX-241
				
IC-M605	✓ (Installed, depending on version)		✓	✓ (Same as supplied)
IC-M506		✓ (Installed, depending on version)	✓ (Installed, depending on version)	
IC-M424G				
IC-M400BB				
IC-M330G				
IC-M330				
IC-M200				
GM600				

* See configuration chart (right).

IC-M605 & M506 Configuration Variations

	Microphone connection	NMEA 2000	AIS Receiver
IC-M605 AIS	Both front and rear configurable	NMEA 2000/ NMEA 0183	Integrated AIS Receiver
IC-M605	Both front and rear configurable	NMEA 2000/ NMEA 0183	Not included* ²
IC-M506 AIS	Front Mic	NMEA 2000/ NMEA 0183	Integrated AIS Receiver
	Rear Mic		
IC-M506 PLUS	Front Mic	NMEA 2000/ NMEA 0183	Not included* ³
	Rear Mic		
IC-M506	Front Mic	NMEA 0183* ¹	Not included* ³

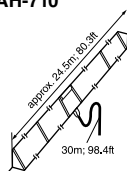







*¹ Optional UX-232 is required for NMEA 2000.





*² Optional UX-251 is required for AIS receiver.

*³ Optional UX-231 is required for AIS receiver.



Options for MF/HF Transceivers

	HAND MICROPHONES			HANDSET	EXTERNAL SPEAKERS		FLUSH MOUNT KIT	MOUNTING BRACKET
MODEL NAME	HM-214H	HM-135	HM-180	HS-98 (#17)	SP-24	SP-24E	MB-75	MB-108
GM800								
GM800	✓			✓		✓		✓
IC-M802		✓			✓		✓	
IC-M710			✓					
IC-M700PRO			✓					





	FOLDED DIPOLE ANTENNA	ANTENNA MATCHERS		ANTENNA TUNERS			SHIELDED CONTROL CABLES	
MODEL NAME	AH-710	MN-100	MN-100L	AT-130	AT-140 IP56	AT-141 IP56	OPC-1465 10 m; 32.8 ft	OPC-1147/N 10 m; 32.8 ft
								
GM800						✓	(Use with AT-141)	
IC-M802	✓	✓	✓	✓	✓			(Use with AT-140)
IC-M710	✓	✓	✓	✓	✓			
IC-M700PRO	✓	✓	✓	✓	✓			

	SHIELDED CONTROL CABLES	SEPARATION CABLE	REMOTE CONTROLLER	FILTER
MODEL NAME	OPC-566 10 m; 32.8 ft	OPC-1106 5 m; 16.4 ft	RC-25	FL-100 Bandwidth: 500 Hz/-6 dB CW/FSK narrow
				
GM800				
IC-M802	(Use with AT-130)	✓	✓	
IC-M710	(Use with AT-130)			✓
IC-M700PRO	(Use with AT-130)			✓

AIS TRANSPONDER

	FLUSH MOUNT KITS	GPS RECEIVER
MODEL NAME	MB-75 MB-132	MXG-5000S
		
	Photo shows MB-75	
MA-500TR	✓	✓










Options for Marine Radars


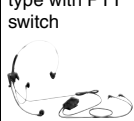







	VIDEO OUTPUT UNITS		SYSTEM CABLES	
MODEL NAME	UX-234	UX-252	OPC-2339 20 m (65.6 ft)	OPC-2340 30 m (98.4 ft)
				
MR-1210RII	✓		✓	✓
MR-1210TII/TIII	✓			✓
MR-1010RII		✓	✓	✓










: Applicable : Not applicable

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

Options for IP Advanced Radio System

	BATTERY PACKS		BATTERY CASE	RAPID CHARGER	MULTI-CHARGER	SPEAKER-MICROPHONES	EARPHONE-MICROPHONES		
MODEL NAME	BP-271 (Li-ion) 7.4 V/1150 mAh (min.) 1200 mAh (typ.) 	BP-272 (Li-ion) 7.4 V/1880 mAh (min.) 2000 mAh (typ.) 	BP-273 LR6 (AA) × 3 cells 	BC-202 + BC-123SA/SE 	BC-211 + BC-157S 	HM-183LS Submersible 	HM-186LS 	HM-153LS 	HM-166LS 
IP100H	✓	✓	✓	✓	✓	✓	✓	✓	✓

	HEADSETS (Full-duplex operation)		HEADSETS (Simplex operation)			PLUG ADAPTER CABLES	PTT SWITCH CABLES		
MODEL NAME	HS-102 Earphone type 	HS-85 Over-the-head type with PTT switch 	HS-94 Earhook type with boom microphone 	HS-95 Behind-the- head type 	HS-97 Throat micro- phone type 	OPC-2006LS For VOX opera- tion 	OPC-2144 Slim L-type plug 	OPC-2359 	OPC-2328 For manual PTT operation 
IP100H	(Use with OPC-2359)	(Use with OPC-2144)	(Use with OPC-2006LS or OPC-2328)	(Use with OPC-2006LS or OPC-2328)	(Use with OPC-2006LS or OPC-2328)	✓	✓	✓	✓

	AC ADAPTERS		AUDIO CONNECTION CABLES	REMOTE COMMUNICATOR	DIGITAL VOICE CONVERTER	ACCESS POINT MANAGER	DESKTOP MICROPHONE	HAND MICROPHONE	MICROPHONE ADAPTER
MODEL NAME	BC-207S 12 V/3.5 A 	BC-147S 12 V/200 mA 	OPC-2273* For VHF radio OPC-2276* For HM-152 or SM-26 * 5 m; 16.4 ft  Photo shows OPC-2276	RC-FS10 	CT-24 	RS-AP3 	SM-26 	HM-152 	CT-23 
IP100FS		✓					(Use with CT-23)	(Use with CT-23)	✓
AP-90M	✓					✓			
IP1000C									
VE-PG3	✓		✓	✓	✓		(Use with OPC-2276)	(Use with OPC-2276)	

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

Specifications for VHF Handheld Transceivers

	IC-M93D	IC-M73	IC-M36	IC-M25
Frequency range (Unit: MHz)	Tx: 156.025–157.425 Rx: 156.050–163.275 CH 70: 156.525	Tx: 156.025–157.425 Rx: 156.050–163.275	Tx: 156.025–157.425 Rx: 156.050–163.275	Tx: 156.025–157.425 Rx: 156.050–163.275
Dimensions (W x H x D; Projections not included)	57 x 144.6 x 38.5 mm; 2.2 x 5.7 x 1.5 in	52.5 x 125 x 30 mm; 2.1 x 4.9 x 1.2 in	62 x 139.5 x 43 mm; 2.4 x 5.5 x 1.7 in	56.6 x 134.2 x 30.5 mm; 2.2 x 5.3 x 1.2 in
Weight (approx.)	300 g; 10.6 oz (With BP-285, MB-133 and FA-SC59V)	320 g; 11.3 oz (With BP-245H, MB-103 and FA-S59V)	295 g; 10.4 oz (With BP-252, MB-109 and FA-SC58V)	220 g; 7.8 oz (With MB-133 and FA-SC59V)
Current drain	Transmit (High)	1.5 A	1.5 A typical	1.5 A typical
	Max. audio	250 mA typical (External SP) 450 mA typical (Internal SP)	250 mA typical (External SP) 450 mA typical (Internal SP)	300mA typical (Internal SP)
Sensitivity (at 12 dB SINAD)	0.25 µV typical	0.22 µV typical	0.25µV typical	0.25 µV typical
Intermodulation rejection	70 dB typical	70 dB typical	70dB typical	70 dB typical
Audio output power (10% distortion)	900 mW typical (Internal SP) 350 mW typical (External SP)	700 mW typical (Internal SP) 350 mW typical (External SP)	700 mW typical (Internal SP)	550 mW typical (Internal SP) 300 mW typical (External SP)
RF output power	5/1 W	6/3/1W	6/1 W (With BP-252) 2/1 W (With alkaline cells)	5/1 W
Operating time (approx.)*1	9 hours (with BP-285)	17 hours (PLUS version) 20 hours (Basic version) (with BP-245H)	8 hours (with BP-252)	11 hours (with built-in battery)
Waterproof protection	IPX7 (1 m depth/30 min)	IPX8 (1.5 m depth/30 min)	IP57 (1 m depth/30 min)	IPX7 (1 m depth/30 min)
Integrated GNSS receiver	✓	—	—	—
Float'n Flash	✓	—	Floating only	✓

	IC-M85	IC-M88	IC-M88 UL	IC-GM1600
Frequency range (Unit: MHz)	TX: 156.025–157.425 RX: 156.050–163.275 TX/RX: 136–174 (LMR)	Tx: 156.025–157.425 Rx: 156.050–163.275 LMR: TX/RX 146–174	Tx: 156.025–157.425 Rx: 156.050–163.275 LMR: TX/RX 146–174	TX/RX: 156.300–156.875
Dimensions (W x H x D; Projections not included)	56 x 92 x 29 mm; 2.2 x 3.6 x 1.1 in	62 x 97 x 39 mm; 2.4 x 3.8 x 1.5 in	62 x 97 x 39 mm; 2.4 x 3.8 x 1.5 in	65 x 145 x 44 mm; 2.6 x 5.7 x 1.7 in
Weight (approx.)	246 g; 8.7 oz (with BP-290, FA-SC58V and MBB-3)	280 g; 9.9 oz (With BP-227)	280 g; 9.9 oz (With BP-227UL)	385 g; 13.6 oz (With BP-234)
Current drain	Transmit (High)	1.5 A (at 5 W) 0.9 A (at 2 W)*2	1.6 A typical	1.6 A typical
	Max. audio	450 mA	200 mA typical (Internal SP)	200 mA typical (Internal SP)
Sensitivity (at 12 dB SINAD)	0.25 µV typical	0.25 µV typical	0.25 µV typical	0.25 µV typical (USA version)
Intermodulation rejection	70 dB typical	70 dB (Marine) 60 dB (LMR)	70 dB (Marine) 60 dB (LMR)	70 dB (USA version), 68 dB (GEN version)
Audio output power (10% distortion)	700 mW typical (Internal SP) 700 mW typical (External SP)	350 mW typical	350 mW typical	350 mW typical
RF output power	5 W/3 W/1 W 2 W/1 W*2	5/3/1 W	5/3/1 W	2/1 W
Operating time (approx.)*1	14 hours (with BP-290)	15 hours (with BP-227)	15 hours (with BP-227UL)	Specified as IMO A.809 (19)
Waterproof protection	IP67 (1 m depth/30 min)	IPX7 (1 m depth/30 min)	IPX7 (1 m depth/30 min)	Specified as IMO A.809 (19)
Integrated GNSS receiver	—	—	—	—
Float'n Flash	—	—	—	—

Measurements made in accordance with TIA/EIA603 for IC-M93D, M73, M36, M25, M85 and M88. TIA/EIA603 and FCC Part 80.271 for IC-GM1600.

*1 Typical operation, Tx:Rx:Stand-by=5:5:90 *2 Land mobile channels for USA version.

Specifications for VHF Fixed Mount Transceivers

	IC-M605	IC-M506	IC-M424G	IC-M400BB	IC-M330G	IC-M330	IC-M200	GM600
Frequency range (Unit: MHz)	Tx: 156.025–161.600 Rx: 156.050–163.275 CH70: 156.525 AIS1,2: 161.975, 162.025	Tx: 156.025–157.425 Rx: 156.050–163.275 CH70: 156.525 AIS1,2: 161.975, 162.025	Tx: 156.025–157.425 Rx: 156.050–163.275 CH70: 156.525	Tx: 156.025–157.425 Rx: 156.050–163.275 CH70: 156.525	Tx: 156.025–157.425 Rx: 156.050–163.275 CH70: 156.525	Tx: 156.025–161.600 Rx: 156.050–163.275 CH70: 156.525	Tx: 156.025–157.425 Rx: 156.050–163.275	Tx: 156.025–161.600 Rx: 156.025–162.000 CH70: 156.525
Power supply requirement	13.8 V DC ±15%	13.8 V DC ±15%	13.8 V DC ±15%	13.8 V DC ±15%	13.8 V DC (11.7–15.9 V DC)	13.8 V DC ±15%	13.8 V DC ±15%	24 V DC (21.6–31.2 V DC)*2
Dimensions (W x H x D; Projections not included)	274 x 114 x 121.5 mm; 10.8 x 4.5 x 4.8 in	178.9 x 113.9 x 113.8 mm; 7.0 x 4.5 x 4.5 in	180 x 82 x 119.9 mm; 7.1 x 3.2 x 4.7 in	216 x 79 x 125 mm; 8.5 x 3.1 x 4.9 in	156.5 x 66.5 x 110.1 mm; 6.2 x 2.6 x 4.3 in	153 x 67 x 133 mm; 6.0 x 2.6 x 5.2 in	274 x 114 x 121.5 mm; 10.8 x 4.5 x 4.8 in	274 x 114 x 121.5 mm; 10.8 x 4.5 x 4.8 in
Weight (approx.)	1.51 kg; 3.3 lb	1.4 kg; 3.1 lb	1.2 kg 2.6 lb	Main unit 830 g; 1.8 lb HM-195 400 g; 14.1 oz	730 g; 1.6 lb	800 g; 1.8 lb	1.6 kg; 3.5 lb	1.6 kg; 3.5 lb
Current drain	Transmit (High)	6 A	5.5 A	5.5 A	5.5 A	5 A	5.5 A	3.3 A*2
	Max. audio	5 A typ. (Ext SP, RX hailler ON) 8 A Max. (Ext SP, RX hailler ON, HM-195 x 3)	5 A typ. (Ext SP, RX hailler ON) 1.5 A (Internal SP)	5 A typ. (Ext SP, RX SP ON) 1.5 A (Internal SP)	3.5 A	1 A	1.5 A	2.0 A*2
Sensitivity (at 12 dB SINAD)	0.22 µV typical	0.22 µV typical	0.22 µV typical	0.22 µV typical	0.22 µV typical	0.22 µV typical	0.22 µV typical	-7 dBµ emf typ. (20 dB SINAD)
Intermodulation rejection	More than 80 dB	More than 75 dB	More than 70 dB	More than 70 dB	More than 70 dB	More than 70 dB	More than 70 dB	More than 75 dB (Main)
Audio output power (10% distortion/4Ω load)	15 W (External SP)	15 W (External SP)	10 W typ. (External SP)	10 W (External SP) 2 W (HM-195 series)	4.5 W typical (External SP)	4.5 W typical (External SP)	10 W (External SP)	10 W (External SP)
RF output power	25/1 W	25/1 W	25/1 W	25/1 W	25/1 W	25/1 W	25/1 W	25/1 W
NMEA interface	NMEA 2000, NMEA 0183/0183-HS x 2	NMEA 2000*/0183	NMEA 0183	NMEA 0183	NMEA 0183	NMEA 0183	NMEA 0183	IEC 61162-1
AIS receiver	Built-in*1	Built-in*1	—	—	—	—	—	—
Built-in GPS receiver	Yes	—	Yes	—	Yes	—	—	—

Measurements made in accordance with TIA/EIA 603 for IC-M605, M506, M424G, M400BB, M330G, M330, M200 and EN301 925 for GM600. *1 Depending on version. *2 With PS-310 (#01)

Specifications for MF/HF Fixed Mount Transceivers

		IC-M802	IC-M710	IC-M700PRO	GM800
Frequency range (Unit: MHz)		Tx: 1.6–27.5000 (ITU channels) Rx: 0.5–29.9999	Tx: 1.6–27.5000 (ITU channels) Rx: 0.5–29.9999	Tx: 1.6–27.5000 (ITU channels) Rx: 0.5–29.9999	Tx: 1.6–27.5000 (ITU channels) Rx: 0.5–29.9999 (continuously) DSC: 2.1875, 4.2075, 6.3120, 8.4145, 12.5770, 16.8045
Type of emission	Tx/Rx	J3E (USB/LSB), H3E* ² (AM), J2B (AFSK), F1B (FSK), A1A (CW)	J3E (USB/LSB), H3E (AM), J2B (AFSK), F1B (FSK), R3E, A1A (CW)* ⁴	J3E (USB/LSB), H3E (AM), J2B (AFSK), F1B (FSK), R3E, A1A (CW)* ⁴	J3E (USB/LSB* ¹), H3E* ¹ (AM), J2B* ¹ (AFSK), F1B (FSK), A1A* ¹ (CW)
	DSC	J2B* ³	–	–	F1B
Power supply requirement		13.6 V DC ±15%	13.6 V DC ±15%	13.6 V DC ±15%	21.6–31.2 V DC (floating ground)
Dimensions (W×H×D; projections not included)	Main unit	240 × 94 × 238.4 mm; 9.4 × 3.7 × 9.4 in	291.4 × 116.4 × 315 mm; 11.5 × 4.6 × 12.4 in	291.4 × 116.4 × 315 mm; 11.5 × 4.6 × 12.4 in	367 × 95 × 269 mm; 14.4 × 3.7 × 10.6 in
	Controller	220 × 110 × 84.4 mm; 8.7 × 4.3 × 3.3 in	–	–	274 × 114 × 86mm; 10.8 × 4.5 × 3.4 in
Weight (approx.)	Main unit	4.7 kg; 10.4 lb	7.8 kg; 17.2 lb	7.8 kg; 17.2 lb	8.6 kg; 19.0 lb
	Controller	570 g; 1.3 lb	–	–	760 g; 1.7 lb
Current drain	Transmit (Max. power)	30 A typ.	30 A	30 A	Less than 20 A (at 1.1 and 1.7kHz two tones)
	Receive (Max. audio)	3.0 A	2.5 A	2.5 A	Less than 3.0 A
Sensitivity	J3E, A1A	0.5 μV (1.8–29.999 MHz)* ⁷	0.5 μV (1.8–29.999 MHz)* ⁸	0.35 μV typ. (1.8–29.999 MHz)* ⁸	16 dBμV emf (1.6–3.999 MHz)* ⁵ 11 dBμV emf (4.0–29.999 MHz)* ⁵
	J2B, F1B	0.5 μV (1.8–29.999 MHz)* ⁷	–	–	3 dBμV emf (1.6–2.099 MHz)* ⁶ 0 dBμV emf (2.1–2.75 MHz)* ⁶
	J2B, R3E	–	0.5 μV (1.8–29.999 MHz)* ⁸	0.35 μV typ. (1.8–29.999 MHz)* ⁸	–
	H3E	3.2 μV (1.8–3.999 MHz) * ⁷	3.2 μV (1.8–29.999 MHz)* ⁷	2.2 μV typ. (1.8–29.999 MHz)* ⁷	30 dBμV emf (1.6–3.999 MHz)* ⁵
	DSC (J2B)	0 dBμV emf * ³ * ⁶	–	–	0 dBμV emf* ⁶
RF output power		150/60/20 W (1.6–27.5 MHz)	150/60/20 W (1.6–23.999 MHz) 60/20 W (24.0–27.500 MHz)	150/60/20 W (1.6–23.999 MHz) 60/20 W (24.0–27.500 MHz)	125 W (4.0–27.5 MHz) (at AT-141 output) 85 W (1.6–3.999 MHz) (at AT-141 output)

*¹ Receive only. *² Receive only, depending on version. *³ Depending on version. *⁴ Available modes may differ depending on version. *⁵ 20 dB SINAD *⁶ 1% error rate *⁷ 10 dB S/N *⁸ 12 dB SINAD

Specifications for Marine Radars and AIS Transponder

MARINE RADARS

DISPLAY UNIT	MR-1210RII	MR-1210TII		MR-1210TIII		MR-1010RII	
Display	12.1-inch color TFT LCD					10.4-inch color TFT LCD	
Resolution (H × V)	600 × 800 dots					480 × 640 dots	
Minimum range	25 m; 82 ft (at 1/8 NM range)					25 m; 82 ft (at 1/8 NM range)	
Maximum range	36 NM	48 NM		72 NM		36 NM	
Power supply requirement	10.2–42 V DC					10.2–42 V DC	
Dimensions (W × H × D; projections not included)	300 × 323 × 119.2 mm; 11.8 × 12.7 × 4.7 in					301 × 323.5 × 119.2 mm; 11.8 × 12.7 × 4.7 in	
Weight (approx.)	4.6 kg; 10.1 lb					4.3 kg; 9.5 lb	
Usable temperature range	–15 °C to +55 °C; +5 °F to +131 °F					–15°C to +55°C; +5°F to +131°F	
Power consumption (approx.)	60 W	70 W (4 ft open)	80 W (6.5 ft open)	80 W (4 ft open)	90 W (6.5 ft open)	55 W	
SCANNER UNIT	MR-1210RII	MR-1210TII		MR-1210TIII		MR-1010RII	
Type	2ft (60cm) radome	4 ft (120 cm) open array	6.5 ft (200 cm) open array	4 ft (120 cm) open array	6.5 ft (200 cm) open array	2 ft (60 cm) radome	
Peak output power	4 kW	4 kW		6 kW		4 kW	
Rotation speed	24, 36 rpm typical	24, 36 rpm typical		22, 24, 36 rpm typical		24, 36 rpm typical	
Beamwidth	Horizontal	4° typical	2° typical	1.2° typical	2° typical	1.2° typical	4° typical
	Vertical	22° typical	23° typical	23° typical	23° typical	23° typical	22° typical
Sidelobe	–22 dB typical	–24 dB typical	–27 dB typical	–24 dB typical	–27 dB typical	–22 dB typical	
Transmission frequency	9410 MHz ±30 MHz					9410 MHz ±30 MHz	
Dimensions (W × H × D; projections not included)	640 × 256 × 640 mm; 25.2 × 10.1 × 25.2 in	1217 (dia.) × 395 (H) mm; 47.9 (dia.) × 15.6 (H) in	1995 (dia.) × 395 (H) mm; 78.5 (dia.) × 15.6 (H) in	1217 (dia.) × 395 (H) mm; 47.9 (dia.) × 15.6 (H) in	1995 (dia.) × 395 (H) mm; 78.5 (dia.) × 15.6 (H) in	640 × 256 × 640 mm; 25.2 × 10.1 × 25.2 in	
Weight (approx.)	8 kg; 17.6 lb	18 kg; 39.7 lb	20 kg; 44.1 lb	18 kg; 39.7 lb	20 kg; 44.1 lb	8 kg; 17.5 lb	
Usable temperature range	–25 °C to +70 °C; –13 °F to +158 °F	–25 °C to +70 °C; –13 °F to +158 °F		–25 °C to +70 °C; –13 °F to +158 °F		–25 °C to +70 °C; –13 °F to +158 °F	
Connection cable	15 m; 49.2 ft (OPC-2341)	20 m; 65.6 ft (OPC-2342)		20 m; 65.6 ft (OPC-2342)		15 m; 49.2 ft (OPC-2341)	

AIS TRANSPONDER

	MA-500TR	
Frequency range	156.025–162.025 MHz	
Type of emission	16K0G9XW (GMSK)	
Power supply requirement	12.0 V DC (9.6–15.6 V)	
Dimensions (W × H × D; Projections not included)	165 × 110 × 123 mm; 6.5 × 4.3 × 4.8 in	
Weight (approx.)	1.0 kg; 2.2 lb	
Current drain	Transmit	1.5 A
	Receive	0.7 A
Sensitivity (20% error rate)	–110 dBm	
Intermodulation rejection	65 dB	
RF output power	2 W	

Measurements made in accordance with IEC62287-1.

Specifications for MarineCommander™

MULTI-FUNCTION DISPLAY

	MXD-5000
Multi-function display	12.1-inch TFT
Screen size	246 × 184.5 mm
Screen resolution	SVGA 800 × 600 dots
Power supply	30 V DC (Supplied from MXP-5000)
Dimensions (W × H × D; projections not included)	386 × 274 × 69.2 mm; 15.2 × 10.8 × 2.7 in (without bracket) 404 × 299 × 102 mm; 15.9 × 11.8 × 4.0 in (with bracket)
Weight (approx.)	3.6 kg; 7.9 lb (without bracket) 4.1 kg; 9.0 lb (with bracket)
Usable temperature range	-20 °C to +60 °C; -4 °F to +140 °F
Waterproofing	IPX7
Cable length	5 m; 16.4 ft
Optional extension cable	EX-3187 (5 m; 16.4 ft)

MAIN PROCESSOR UNIT

	MXP-5000
Power supply	12/24 V DC (10.8 to 31.2 V DC)
Current drain (at 12 V DC) (at maximum brightness)	Less than 4.7A (One MXD-5000) Less than 7.7A (Two MXD-5000s)
Dimensions (W × H × D; projections not included)	360 × 88 × 228.8 mm; 14.2 × 3.5 × 9.0 in
Weight (approx.)	4.25 kg; 9.4 lb
Usable temperature range	-20 °C to +60 °C; -4 °F to +140 °F
Waterproofing	IPX4

FISH FINDER

	MXF-5000
Power supply	12/24 V DC (10.8 to 31.2 V DC)
Output power	600 W/1 kW
Current drain (at 12 V DC)	600 W output 1 kW output Less than 0.6 A (Water depth range: 40 m) Less than 1.0 A (Water depth range: 40 m)
Transmission frequency	50 kHz ±1 kHz 200 kHz ±1 kHz
Dimensions (W × H × D; projections not included)	250 × 67 × 200 mm; 9.8 × 2.6 × 7.9 in
Weight (approx.)	2.18 kg; 4.8 lb
Usable temperature range	-20 °C to +60 °C; -4 °F to +140 °F
Waterproofing	IPX4
Optional data cable	OPC-1895 (20 m; 65.6 ft)

TRANSDUCERS

	EX-3193	EX-3194	EX-3195
Type	600 W transom type, built-in boat speed and temperature sensors	600 W thru-hull type, built-in boat speed and temperature sensors	1 kW thru-hull type, built-in temperature sensors
Output power	600 W	600 W	1 kW
Operating frequency	50 kHz, 200 kHz	50 kHz, 200 kHz	50 kHz, 200 kHz
Beamwidth	50 kHz: 45°, 200 kHz: 11°	50 kHz: 45°, 200 kHz: 11°	50 kHz: 15°×21°, 200 kHz: 3°×5°
Vessel speed sensor	18,000 p/nm	19,000 p/nm (with fairing) 21,500 p/nm (without fairing)	-
Speed range	1 kt-44 kt	1 kt-44 kt	-
Weight (approx.)	0.5 kg; 1.1 lb	2.5 kg; 5.5 lb	3.6 kg; 7.9 lb
Optional transducer ext. cable	OPC-1929 (6 m; 19.7 ft)	OPC-1929 (6 m; 19.7 ft)	OPC-1929 (6 m; 19.7 ft)

RADAR UNITS

	MXR-5000R Radar unit	MXR-5000T Radar unit
Power supply	12/24 V DC (10.8 to 31.2 V DC)	
Current drain (at 12 V DC)	Less than 5.0 A	Less than 5.5 A
Dimensions (W × H × D; projections not included)	250 × 67 × 200 mm; 9.8 × 2.6 × 7.9 in	
Weight (approx.)	2.1 kg; 4.6 lb	
Usable temperature range	-20 °C to +60 °C; -4 °F to +140 °F	
Optional data cable	OPC-1895 (20m; 65.6ft)	
	Radome scanner	Open array scanner
Type	2 ft (60 cm) radome	4 ft (120 cm) open array
Peak output power	4 kW	4 kW
Maximum range	36 NM	48 NM
Rotation speed	24 rpm, 36 rpm, 48 rpm	24 rpm, 36 rpm, 48 rpm
Beam width	Horizontal Vertical	4° typ. 2° typ. 22° typ. 25° typ.
Side lobe	-18 dB	-24 dB
Transmission frequency	9410 MHz ±30 MHz P0N	9410 MHz ±30 MHz P0N
Dimensions	607 (Diameter) × 243 (H) mm; 23.9 × 9.6 in	1205 (Diameter of rotation) × 381 (H) mm; 47.4 × 15 in
Weight (approx.)	8 kg; 17.6 lb (without cable)	17 kg; 37.4 lb (without cable)
Usable temperature range	-25 °C to +70 °C; -13 °F to +158 °F	-25 °C to +70 °C; -13 °F to +158 °F
Waterproofing	IPX6	IPX6
Supplied system cable	OPC-2341 (15 m; 49.2 ft)	OPC-2342 (20 m; 65.6 ft)
Optional radar system cables	OPC-2339 (20 m; 65.6 ft) OPC-2340 (30 m; 98.4 ft)	OPC-2340 (30 m; 98.4 ft)

GPS RECEIVER

	MXG-5000S
Receiving frequency	1575.42 MHz
Receiving channels	66
Receiving code	L1, C/A-codes, SPS
Satellite differential type (SBAS)	WAAS, EGNOS, MSAS, GAGAN
Time to first fix	Cold start Warm start
	40 Sec. typ. 4 Sec. typ.
Power supply	4.75-5.25 V DC (Supplied from MA-500TR or MXP-5000)
Dimensions (Diameter×Height) (projections not included)	78 × 96.5 mm; 3.1 × 3.8 in
Weight (approx.)	460 g; 1.0 lb
Usable temperature range	-20 °C to +60 °C; -4 °F to +140 °F
Cable length (approx.)	10 m; 32.8 ft

Specifications for IP Advanced Radio System

	IP100H
Wireless standards	IEEE 802.11 a/b/g/n
Frequency coverage*	2.4–2.4835 GHz, 5.15–5.35, 5.47–5.85 GHz
Dimensions (W x H x D; projections not included)	58 x 95 x 26.4 mm ; 2.3 x 3.7 x 1.0 in (with BP-271)
Weight (approx.)	205 g; 7.2 oz (with BP-271 and antenna)
RF output power	Less than 10 mW/MHz
Voice Codec	G.711µ-law (64 kbps)
AF output power	Internal SP 400 mW (typ., 16Ω at 10% distortion) External SP 200 mW (typ., 8Ω at 10% distortion)
Security	WEP (64/128-bit), WPA-PSK (TKIP/AES), WPA2-PSK (TKIP/AES)
Operating time (1:1:8 duty cycle)	More than 20 hours (with BP-271)

* Authorized frequency range and channels may differ depending on country.

	AP-90M
Power supply	12V DC ±10% or PoE (IEEE802.3af compatible)
Dimensions (W x H x D; projections not included)	120 x 29 x 103 mm ; 4.7 x 1.1 x 4.1 in
Weight (approx.)	300 g; 10.6 oz (Main unit only)
Wired LAN	RJ-45 connector x 1 1000BASE-T/100BASE-TX/ 10BASE-T (Auto MDI/MDI-X)
Wireless LAN	IEEE 802.11 a/b/g/n/ac
Frequency coverage*	2.4–2.4835 GHz, 5.15–5.35, 5.47–5.85 GHz
Data rates (theoretical value)	11 Mbps, 54 Mbps, 300 Mbps, 866.7 Mbps
Security	WEP (64/128/152-bit), WPA, WPA2, WPA-PSK, WPA2-PSK

* Authorized frequency range and channels may differ depending on country.

	IP100FS
Operating system	Windows® 10 (32-bit/64-bit), Windows® 8/Windows® 8.1 (32-bit/64-bit) Windows® 7 (32-bit/64-bit) SP1 or later, (Except for Windows® RT)
CPU	Intel® Core™ 2 Duo Processor E6600/ 2.4 GHz or better
Memory	2 GB or higher
Hard disk space	1 GB of disk space (for saving log files)
Audio	DirectSound compatible audio (Frequency response up to 20 kHz, sampling rate 48 kHz)
Display resolution	1920x1080 pixel recommended 1024x768 pixel minimum
Other	USB 2.0 port, 10 Mbps or faster Ethernet interface, speaker, microphone or headset

	IP1000C
Power supply	100–240 V AC (with supplied AC adapter)
Dimensions (W x H x D; projections not included)	232 x 38 x 168 mm; 9.1 x 1.5 x 6.6 in
Weight (approx.)	750 g; 1.7 lb (Main unit only)
LAN	RJ-45 connector x 4 1000BASE-T/100BASE-TX/ 10BASE-T (AUTO MDI/MDI-X)
USB	Standard A receptacles x2
Maintenance console	RS-232C (RJ-11) connector

	VE-PG3
Power supply	12 V DC ±10% 16 W Max. (with supplied AC adapter)
Operating temperature range	0°C to +40°C; 32°F to +104°F
Operating humidity	5% to 95% RH
Dimensions (W x H x D) (Projections are not included)	232 x 38 x 168 mm; 9.1 x 1.5 x 6.6 in
Weight (main unit only)	800 g; 1.76 lb (approx.)
Regulatory compliance	FCC (Part 15 Class B/Part 68), TIA 868-B ICES-003, ICCS-03 CE Mark, ETSI ES 203 021, ETSI EG 201 121 (Advisory Note)
LAN/WAN	RJ-45 connectors x2 10BASE-T/100BASE-TX
Telephone set	RJ-11 connector x1
Telephone line	RJ-11 connector x2
Transceiver/repeater	Quick connectors x2
External equipment	Quick connectors x2
USB	Standard A receptacle x2

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

Read all instructions enclosed with the transceiver carefully and completely before using the transceiver.

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