DECEMBER 2001

NEW PRODUCT INFORMATION

10-inch CRT MARINE RADAR (with radome scanner)

MR-1000R

10-inch CRT MARINE RADAR (with open array scanner)

MR-1000T

10-inch CRT Display unit

Open scanner unit
for MR-1000T

Radome scanner unit
for MR-1000R

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Icom proudly announces the debut of the MR-1000R and the MR-1000T. MR-1000R/MR-1000T has 10-inch monocchrome CRT display and a powerful 4kW output. The compact radome scanner with MR-1000R provides 36nm observation. The open array scanner obeserves 48 nm. Both MR-1000R and MR-1000T are designed for fast moving vessels as well as fishing boats and pleasure crafts.

SELLING POINTS

- ***4kW powerful output power, for observations of up to 48NM (MR-1000T) or 36NM (MR-1000R)***
- ***10-inch monochrome green display***
- ***2ft radome scanner (MR-1000R)***
- ***4ft open-type scanner (MR-1000T)***
- ***Multi-language indication***
- ***Electronic Plotting Aid (EPA) function***
- ***Waypoint indication and Man Overboard (MOB) function***

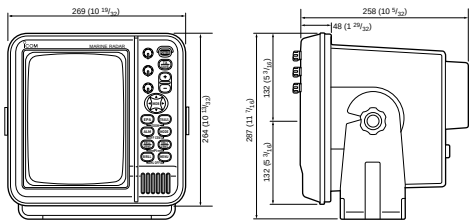
FEATURES

4kW powerful output power, for observations of up to 48 or 36 nautical miles

4kW output power, 4ft open-type slot-array scanner (MR-1000T) and high sensitivity receiver provide you with up to 48 nautical mile observations. 2ft radome-type scanner (MR-1000R) provides up to 36 nautical mile observations with 4kW output power.

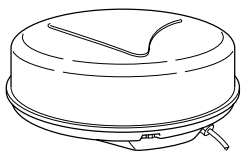
10-inch monochrome green display

10-inch high-resolution CRT display has excellent contrast in low-light conditions. All indications can be read very clearly.



Radome-type scanner unit (MR-1000R)

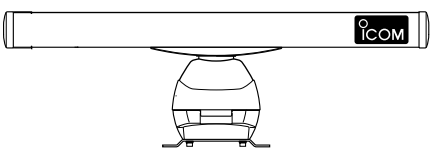
The 60cm (2ft) radome type scanner has an antenna rotation of 48rpm for high-speed screen renewal. The AES resin dome has a durable construction to endure salt walter or rain. The compact body is easy to install.



60cm (2ft) radome scanner unit
for MR-1000R

Open-type scanner unit (MR-1000T)

The 120cm (4ft) open-type scanner scans longer ranges (48NM) with narrower beam-widths than that of the radome-type scanner.



120cm (4ft) open scanner unit
for MR-1000T

Multi language

The MR-1000R/MR-1000T shows multi languages as menu indication. The Chinese version shows Chinese and English. The general version shows English, Korean, Spanish, Portuguese.

Automatic pulse width and repetition frequency selection

According to the intended range, 4 kinds of pulse widths and 3 kinds of repetition frequencies are automatically selected.

Alarm zone setting

Desired range and bearing can be set for the alarm zone. If other ships or islands come into the alarm zone, an audible alarm warns of a possible collision, even when the power save function turns the monitor off.

Electronic Plotting Aid (EPA) function*

Electronic Plotting Aid (EPA) helps to plot and trace up to 10 targets and forecast the courses with these vectors on the display.

* EPA requires external bearing and speed data.

Head-up/North-up/Course-up/True motion

Display shows your position and direction in various ways. True motion mode provides easy recognition of your vessel's action.

* North-up and course-up require external bearing data. True-motion requires external bearing and position/speed data.

Waypoint Indication and Man Overboard (MOB) function

When connected to a GPS or other navigation systems, which have NMEA 0183, N+1, AUX data format outputs, the CRT display shows the ship's position in Lon/Lat and range/bearing to the target waypoint. The MOB point keeps the position in large, easy-to-read characters on the display.

2 EBL's (Electronic Bearing Lines) and 2 VRM's (Variable Range Markers)

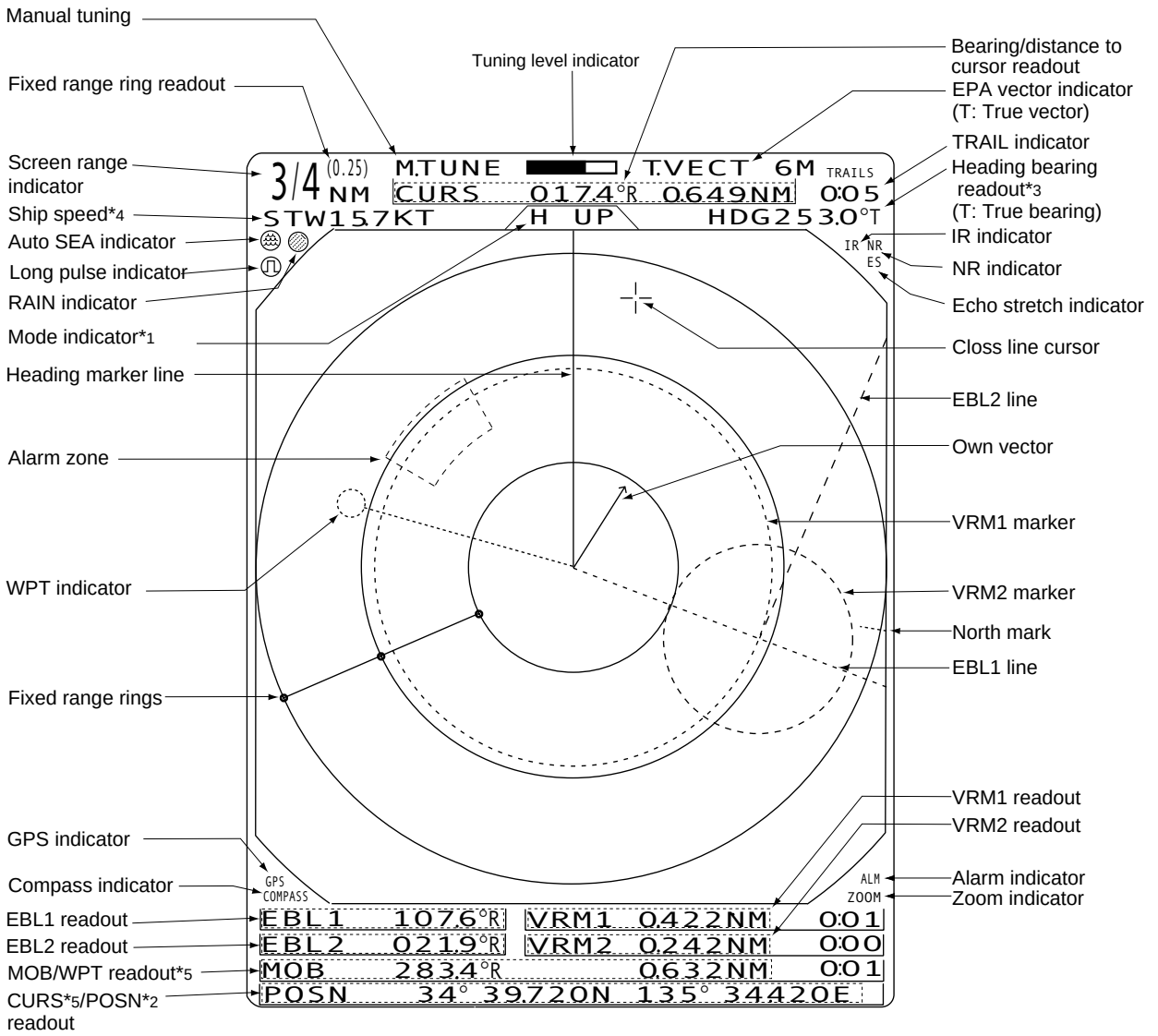
Allows easy tracking of 2 targets simultaneously with bearing, distance and vector indication. Also the following advanced usage is available.

- The distance and direction between 2 targets
- The relative speed and course of a target
- The distance and course from the waypoint

Other features

- Automatic tuning
- Automatic SEA (sea clutter)
- RAIN (rain clutter)
- Switchable pulse-width to detect a small target
- Power save function
- Off-center function allows you to shift the desired direction, useful for watching bow direction or coastline
- Stretch function enlarges the images on screen
- Interference reduction function to reduce interference from other radar
- Zoom function expands the display indication two times
- Own vector indication
- Rugged all die-cast construction for CRT display

DISPLAY INFORMATION



*1 North-up and Course-up screens can be used only when a bearing input (NMEA, N+1 or AUX) is connected.
*2 NMEA data with 0183 format is necessary.
*3 Compass data with a bearing input (NMEA, N+1 or AUX) is necessary.
*4 STW (Speed Through the Water) : Speed sensor is required.
SOG (Speed Over the Ground) : GPS data is required.
*5 Bearing data and position data are required.

SPECIFICATIONS

Specifications described below are target values. They may be subject to change.
DO NOT incorporate this information in your advertisements until it has been confirmed.

■ Display unit

- Display type : **10-in. monochrome CRT**
- Resolution : 640×480 dots
- Minimum range : 25m
- Maximum range : 36NM (MR-1000R)
  48NM (MR-1000T)
- Range scales :

Range(NM)	1/8	1/4	1/2	3/4	1	1.5	2	3	4	6	8	12	16	24	32	36	48*
Ring (NM)	1/20	1/20	1/10	1/4	1/4	1/4	1/2	1/2	1	1	2	2	4	4	8	6	8

* MR-1000T only.

- Power supply : 10.2–42V DC
- Power consumption : Approx. 50W (MR-1000R)
  Approx. 60W (MR-1000T)
- Unit of distance : NM (nautical miles), km
- Usable temperature range : –15˚C to +55˚C; +5˚F to +131˚F
- Input data format : NMEA 0183, N+1, AUX
- Dimensions (proj. not included) : 269(W)×264(H)×258(D) mm; 10 19/32(W)×10 13/32(H)×10 5/32(D) in
- Weight (approx.) : 6.5kg ; 14 5/16lb

■ Scanner unit

• Model Name	**MR-1000R**	**MR-1000T**
• Type	60cm (2ft) slotted waveguide array in radome	120cm (4ft) slotted waveguide array
• Rotation speed	24/36/48rpm typ.	24/36/48rpm typ.
• Beamwidth Horizontal Vertical	4˚ typ. 22˚ typ.	2˚ typ. 25˚ typ.
• Sidelobe	–18dB typ.	–24dB typ.
• Dimensions (proj. not included)	607(Ø)×243(H) mm; 23 29/32(Ø)×9 9/16(H) in	• Diameter of rotation/height 1205(D)/381(H) mm 23 29/32(D)/9 9/16(H) in
• Weight (approx.)	9kg; 19 27/32lb (without cable)	17kg; 37 15/32lb (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
• Frequency	9410MHz ±30MHz	9410MHz ±30MHz
• Modulation	P0N	P0N
• Peak output power	4kW	4kW
• Pulse-width/repetition rate	80nsec./2880Hz, 80nsec./2160Hz, 250nsec./2160Hz, 350nsec./2160Hz, 900nsec./720Hz	80nsec./2880Hz, 80nsec./2160Hz, 250nsec./2160Hz, 350nsec./2160Hz, 900nsec./720Hz
• Modulator	FET switching	FET switching
• Intermediate frequency	60MHz	60MHz
• IF bandwidth	10MHz, 3MHz	10MHz, 3MHz
• Tuning	Auto or Manual	Auto or Manual
• System cable	10m	15m

OPTIONS

• **OPC-1077** SYSTEM CABLE
Allows you to 20m (65.6ft) separate installation between display unit and scanner unit.

• **OPC-1078** SYSTEM CABLE
Allows you to 30m (98.4ft) separate installation between display unit and scanner unit.