ICOM

MARINE RADAR
MR-1010RII

Icom Inc.

SYSTEM COMPONENTS

MODEL NAME	DISPLAY UNIT	SCANNER UNIT
MR-1010RII	10.4-inch Color LCD	EX-2714 (Radome type)

SUPPLIED ACCESSORIES

● 10.4-inch Color LCD display unit

Quantity

1. NMEA connector (PLT-167-P-R) 1
2. NMEA connector (PLT-168-P-R)........................ 1
3. Spare fuse (FGB 15 A) 1
4. Spare fuse (FGB 5 A: for over 24 V power supply) .. 1
5. DC power cable 1
6. Mounting bracket 1
7. Mounting knob bolts 2
8. Installation bolts (M6×30) 5
9. Installation nuts (M6) 5
10. Spring washers (M6) 10
11. Flat washers (M6) 10
12. Instruction manual 1
13. EX-2714 template 1
14. Display unit template 1
15. Ferrite EMI filter... 1

ⓘ Some accessories are not supplied, depending on the
   radar version.

● Scanner unit (EX-2714)

Quantity

1. System cable (15 m) 1
2. Installation bolts (M10×50) 4
3. Installation bolts (M10×25) 4
4. Installation nuts (M10) 4
5. Flat washers (M10) 4
6. Spring washers (M10) 4

The MR-1010RII is a supplemental aid to navigation and is not intended to be a substitute for accurate and current nautical charts.

Thank you for choosing this Icom product. The MR-1010RII MARINE RADAR is designed and built with Icom's state of the art technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the radar.

SAVE THIS INSTRUCTION MANUAL— This manual contains important safety and operating instructions for the MR-1010RII.

FEATURES

The radar is "Made in Japan." It has powerful transmitting power for long range detection, a 10.4-inch wider view angle color display, simplified ARPA to detect up to 5 targets, and other advanced features.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ **DANGER!**	Personal death, serious injury or an explosion may occur.
⚠ **WARNING!**	Personal injury, fire hazard, or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	Recommended for optimum use. No risk of personal injury, fire or electric shock.

Icom is not responsible for the destruction, damage to, or performance of any Icom or non-Icom equipment, if the malfunction is because of:
• Force majeure, including, but not limited to, fires, earthquakes, storms, floods, lightning, other natural disasters, disturbances, riots, war, or radioactive contamination.
• The use of Icom marine radar with any equipment that is not manufactured or approved by Icom.

BE CAREFUL!

SART signals may not be detected and displayed on the screen, depending on the SEA, RAIN or IR settings.

Make the settings below to detect the SART signals on the screen.

1. Set the screen range to between 6 NM and 12 NM with [+/–]. (pp. 1, 7)
2. Set the [GAIN] as high as possible. (pp. 2, 9)
3. Set [SEA] to minimum. (pp. 2, 9)
4. Set [RAIN] to minimum. (pp. 2, 9)
5. Turn OFF the Interference rejection (IR) function. (p. 10)
6. Turn OFF the Echo Stretch function. (p. 11)

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PRECAUTIONS

For Display unit:

⚠ **WARNING! NEVER** let metal, wire or other objects contact the inside of the display unit, or make incorrect contact with connectors on the rear panel. This could cause an electric shock or damage the display unit.

⚠ **WARNING! NEVER** apply AC voltage to the DC connector of the display unit. This could cause a fire or damage the display unit.

⚠ **WARNING! NEVER** apply more than 42 V DC to the DC connector of the display unit. This could cause a fire or damage the display unit.

⚠ **WARNING! NEVER** touch or operate the display unit with wet hands. This could cause an electric shock or damage the display unit.

⚠ **WARNING! NEVER** open the display unit. There are no user adjustment points. This could cause an electric shock and incorrect reassembly may cause a fire hazard.

⚠ **WARNING! NEVER** operate the radar during a lightning storm. It may result in an electric shock, cause a fire or damage the display unit. Always disconnect the power source and scanner unit before a storm.

⚠ **WARNING! NEVER** reverse the DC power cable polarity. This could cause a fire or damage the display unit.

⚠ **WARNING! NEVER** remove the fuse holder on the DC power cable. Excessive current caused by a short could cause a fire or damage the display unit.

CAUTION: DO NOT use or place the display unit in areas with temperature below –15˚C (+5˚F) or above +55˚C (+131˚F).

CAUTION: DO NOT use harsh solvents such as Benzine or alcohol when cleaning, the display unit, as they will damage the display unit surfaces.

CAUTION: DO NOT place the display unit in excessively dusty environments.

DO NOT place the display unit near heating equipment or in direct sunlight or where hot or cold air blows directly onto it.

DO NOT place the display unit in areas that could block air passage or put anything around the display unit. This will obstruct heat dissipation.

KEEP the display unit out of the reach of unauthorized persons.

KEEP the display unit away from heavy rain, and never immerse it in the water.

The display unit meets IPX4 requirements for splash resistance when the supplied connection cable, scanner unit are connected.

However, if it is dropped, splash resistance cannot be guaranteed because of possible damage to the case or the waterproof seals.

The LCD display may have cosmetic imperfections that appear as small dark or light spots. This is not a malfunction or defect, but a normal characteristic of LCD display.

For Scanner unit:

⚠ **DANGER: HIGH VOLTAGE! NEVER** open the scanner unit. The scanner unit contains high voltage that could be fatal. And there are no user adjustment points. All repairs and adjustments MUST be made by a qualified electronics technician at your Marine Navigation Dealer.

For qualified electronics technician only:

⚠ **DANGER: HIGH VOLTAGE!** High voltages of up to 3,500 volts are used in the scanner unit. Although prudent measures for safety have been adopted, sufficient care must be taken in the operation, maintenance and adjustment of the scanner unit. Electric shock of 1,000 volts or more may cause electrocution and death; even an electric shock of only 100 volts may be fatal.

⚠ **DANGER: HIGH VOLTAGE! DO NOT** turn OFF the radar's power and do not reach inside the scanner unit before you have:
  • discharged the capacitors by disconnecting the system cable from the radar unit for 5 minutes.
  • checked that no electric charges remain inside the device.
Also, it is recommended to wear dry insulated rubber gloves. **NEVER** use both hands simultaneously; keep one hand in your pocket.

⚠ **WARNING: RADIATION HAZARD!**
Radiation emitted from the scanner unit can be harmful, particularly to your eyes. To avoid harmful radiation, turn OFF the radar's power before working on the scanner unit.

DO NOT use or place the scanner unit in areas with temperature below –25˚C (–13˚F) or above +70˚C (+158˚F).

NEVER immerse the scanner unit in the water. The scanner unit meets IPX6* requirements for high-pressure water jet resistance.

However, if the scanner unit is dropped, high-pressure water jet resistance cannot be guaranteed because of possible damage to the cases or the waterproof seals.

* Except for the cable connectors. They meet IPX4 requirements while connecting to the radar unit.
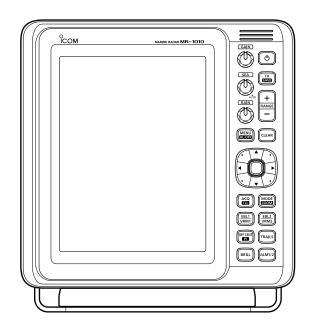
TABLE OF CONTENTS

(Appendices)

• Display mounting bracket template
• MR-1010RII OPERATING GUIDE

1 PANEL DESCRIPTIONS

■ Front panel

Control panel (English)   Control panel (Chinese)

❶ **POWER KEY** ⏻ (p. 7)
- Push to turn the radar power ON or OFF.
  - The initial screen is displayed and a beep sounds after the power has been turned ON.

❷ **TRANSMIT/SAVE KEY [TX (SAVE)]/ [发射(节电)]**
- Push to change the operating mode between TX mode and the standby mode. (p. 7)
- Hold down for 1 second to turn ON the power save function. The radar for the TX interval scan is fixed at 10 revolutions. (p. 13)
  ⓘ Select the save time in the System menu.

❸ **RANGE UP/ DOWN KEYS [+]/[–]** (p. 7)
- Push [+] to increase the screen range.
- Push [–] to decrease the screen range.

❹ **CLEAR KEY [CLEAR]/[取消]**
- Push to cancel the Submenu or Option selection mode in the Menu screen. (p. 39)
- Hold down for 1 second to turn the activated AIS target into a sleeping target. (p. 26)
  ⓘ Hold down [ENTER]/[确认] for 1 second to change the sleeping AIS target to an activated target.
- Hold down for 1 second to release the ARPA target or delete the TLL symbol. (pp. 23, 33)

❺ **CURSOR PAD**
- Push to move the cross-line cursor in sixteen directions in the normal operating mode.
- Sets the EBLs, VRMs, alarm area, ARPA target, AIS target, and so on.
- Push [◄] or [►] to select the Menu group, or push [▲] or [▼] to select the menu items in the Menu screen. (p. 39)

❻ **ENTER KEY***
  *Described as [ENTER]/[确认] in this manual.
  Push to select the target and display the ARPA, AIS, DSC, TLL, or WPT information. (pp. 14, 23, 26, 33)
- In the Menu screen, push to display a submenu or option selection mode, or push to save the settings. (p. 39)
- Hold down for 1 second to turn the sleeping AIS target into an activated target. (p. 26)
  ⓘ Hold down [CLEAR]/[取消] for 1 second to change the activated AIS target to a sleeping target.
- Hold down for 1 second to display the DSC details. (p. 32)

❼ **MODE / ZOOM KEY [MODE•ZOOM]/ [工作模式•图像放大]**
- Push to select the screen mode, Head-up (H-UP), Course-up (C-UP), North-up (N-UP) or True motion (TM) screen. (p. 7)
  ⓘ The North-up, and Course-up screens can be selected only when a bearing data input is connected. (pp. 45, 53)
  ⓘ The TM screen requires bearing data and position data.
  ⓘ TheTM screen is not selectable in the 32 NM or higher range.
- Hold down for 1 second to select the ZOOM view ON or OFF. The ZOOM view expands the Plain Position Indicator (PPI) and the trail around the cross-line cursor to the double size of the normal view. (p. 10)

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❽**EBL2 (VRM2) KEY [EBL2 (VRM2)]/**
[方位线2(距标2)] (pp. 17–20)
● Push to display the EBL2 and the VRM2.
　　EBL: Electronic Bearing Line
　　VRM: Variable Range Marker
　• Push [◀] or [▶] to adjust the EBL selector, or push [▲] or [▼] to adjust the VRM selector. Then push [ENTER]/[确认] to set the point.
　• The EBL2 bearing and the VRM2 distance are displayed in the lower right corner of the screen.
　• When EBL1 and VRM1 are displayed, the center of the VRM2 is displayed at the intersection point of the EBL1 and the VRM1.

❾**TRAILS KEY [TRAILS] / [**尾迹显示 **]**(p. 12)
● Push to turn the trail function ON or OFF. This is useful for watching other ship's tracks, and approximate relative speed.
　ⓘ The Trail settings can be changed in the Trail menu.
● Hold down for 1 second to clear the plotted echoes when the trail function is ON.

❿**ALARM KEY [ALM1/2]/[**报警1/2**]**(pp. 21–22)
● Push to select the Alarm function, ALM1, ALM2, ALM1 & ALM2, or OFF.
● Hold down for 1 second to enter the alarm zone setting mode.
　• Push the cursor pad to move the cross cursor to the zone starting point, then hold down [ALM1/2]/[报警1/2] for 1 second. The frame of the entered zone is displayed. Then push the cursor pad to fix the finish point, and then push [ALM1/2]/[报警1/2]. The alarm zone will automatically be formed.

⓫**BRILLIANCE KEY [BRILL]/[**亮度**]** (p. 8)
● Push to display the Brill/Color setting box.
　ⓘ The brilliance of the display, the key backlight, and display color can be adjusted in the setting box.
　ⓘ The brightness of the symbols, characters and illuminations can be independently adjusted in the Color menu.
● Push to increase or decrease the brilliance of the display.
● Hold down for 1 second to select the maximum brilliance.

⓬**OFF CENTER / PARALLEL INDEX LINE KEY [OFF CENT•PI]/ [**偏心•平行尺**]** (p. 10)
● Push to turn the OFF CENTER function ON or OFF.
　ⓘ This function is usable in the 24 NM or less ranges.
● Hold down for 1 second to display or clear the parallel index lines.(p.17)

⓭**EBL1 (VRM1) KEY [EBL1 (VRM1)]/**
[方位线1(距标1)] (pp. 17–20)
● Push to display the EBL1 and the VRM1.
　　EBL: Electronic Bearing Line
　　VRM: Variable Range Marker
　• Push [◀] or [▶] to adjust the EBL selector, or push [▲] or [▼] to adjust the VRM selector. Then push [ENTER]/[确认] to set the point.
　• The EBL1 bearing and the VRM1 distance are displayed in the lower left corner of the screen.
　• When the EBL1 and the VRM1 are displayed, the beginning of the EBL2 is displayed at the intersection point of the EBL1 and the VRM1.

⓮**ACQUIRE TARGET / TLL KEY [ACQ/TLL]/ [**获取•TLL**]**
● Push to acquire an ARPA target on the cursor.
　ⓘ Hold down [CLEAR]/[取消] for 1 second to release the ARPA target.
● Hold down for 1 second to output the position information where the cursor is placed, to the NMEA output terminals. (p. 23)
　ⓘ TLL output requires bearing data and position data.
　ⓘ The target symbol can be displayed, depending on the setting in the "TLL Mode" item of the System menu. (p. 33)

⓯**MENU KEY [MENU/HL-OFF]/[**菜单•船首关闭**]**
● Push to enter or exit the Menu screen. (p. 39)
● Push [◀] or [▶] to select the Menu groups, or push [▲] or [▼] to select the items.
● While holding down [MENU•HL_OFF]/[菜单•船首关闭], the heading line is temporarily turned OFF.(p.9)
　ⓘ The rings or other objects can also be turned OFF when the "HL OFF Mode" item in the System menu is set to "All." (p. 44)

⓰**RAIN CLUTTER CONTROL** ⬭RAIN⬭**/**⬭雨雪抑制⬭ (p. 7, 9)
Eliminates echoes from rain, snow, fog, and so on.
● Rotate the control fully counter clockwise to deactivate the RAIN function.
　• The RAIN icon (◉) disappears.

⓱**SEA CLUTTER CONTROL** ⬭SEA⬭**/**⬭海浪抑制⬭ (p. 7, 9)
Eliminates echoes from waves in close range. Reduces the receiver gain for close objects within a radius of approximately 8 nautical miles to eliminate sea clutter.
● Rotate the control fully clockwise to activate the automatic SEA control function.
　• The SEA icon (◉) is displayed in the upper left of the screen.
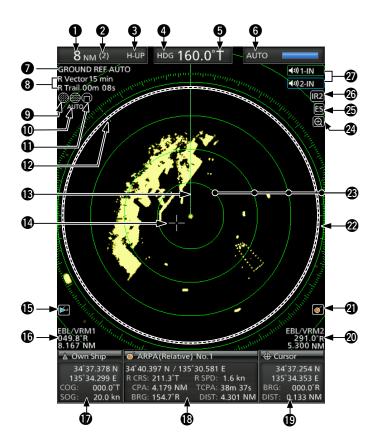　• "AUTO" is displayed below the SEA icon (◉) when the automatic control function is active.
　ⓘ Under normal conditions set the SEA to minimum.
　ⓘ Use this control with caution when the sea is rough.

⓲**GAIN CONTROL** ⬭GAIN⬭**/**⬭增益⬭ (p. 7, 9)
Adjusts the receiver amplifier gain.
● Rotate clockwise to increase the gain.
　ⓘ The increased gain may increase screen noise.

■ **Screen**

❶❷❸❹❺❻
❼ GROUND REF AUTO
❽ R Vector 15 min
R Trail 00m 08s
❾
❿
⓫
⓬
⓭
⓮
⓯
⓰ EBL/VRM1 049.8°R 8.167 NM
❷❼ 1-IN
❷❻ 2-IN
❷❻ IR2
❷❺ ES
❷❹
❷❸
❷❷
❷❶
❷⓿ EBL/VRM2 291.0°R 5.300 NM

△ Own Ship	⊙ ARPA(Relative) No.1	⊕ Cursor
34°37.378 N	34°40.397 N / 135°30.581 E	34°37.254 N
135°34.299 E	R CRS: 211.3°T R SPD: 1.6 kn	135°34.353 E
COG: 000.0°T	CPA: 4.179 NM TCPA: 38m 37s	BRG: 000.0°R
SOG: 20.0 kn	BRG: 154.7°R DIST: 4.301 NM	DIST: 0.133 NM

❶⓻ ❶⓼ ❶⓽

This Display example is set to Wide in the "PPI Area" item of the Display menu.

❶ **SCREEN RANGE READOUT** (p. 17)
Displays the range of the current screen.

Indicator	Description
NM	nautical miles
km	kilometers

ⓘ The distance unit can be selected in the Initial menu.

❷ **FIXED RING RANGE READOUT** (p. 17)
Displays the interval range of the fixed ring.

❸ **MODE INDICATOR** (p. 7)
Displays the mode of the display.
Push [MODE•ZOOM]/ [工作模式•图像放大] to select.

Indicator	Description
H-UP	Head-up
C-UP	Course-up
N-UP	North-up
TM	True Motion

ⓘ N-UP and C-UP screens require external bearing data.
ⓘ The TM screen requires bearing data and position data.

❹ **HEADING INDICATOR** (p. 15)
Displays the heading readout. The HDG readout indicates the bow of the ship's heading in a clockwise direction from north.

Indicator	Description
HDG	Displayed when the "Bearing Input" in the Initial menu is set to "NMEA," "N+1," or "AUX."
COG	Displayed When the "Bearing Input" item in the Initial menu is set to "GPS" or "GPS-L."

❺ **BEARING REFERENCE** (p. 15)
Displays the bearing reference.

Indicator	Description
T	True bearing
M	Magnetic bearing

❻ **TUNING MODE INDICATOR** (p. 9)
Displays the tuning mode and the tuning level.

Indicator	Description
Auto	Auto tuning
Manual	Manual tuning

• "TUNE (AUTO)" is displayed when the "TUNE" item in the Video menu is set to "Auto" or "TUNE (MAN)" is displayed when the "TUNE" item is set "Manual."

❼ **REFERENCE INDICATOR** (p. 15)
Displays the basis of vector reference.

1

❽**TRAILS INDICATOR** (p. 12)
Displays the trail reference and the trail time.
• The echo remains, with gradation, during the period of trail time on the screen. (Except for the trail time: ∞)
• Progressing time counter starts counting until the timer reaches the trail time.

Indicator	Description
T	True
M	Magnetic

❾**RAIN CONTROL ICON** ◉ (p. 9)
Displayed when the RAIN function is used.

❿**SEA ICON** ◉ (p. 9)
Displayed when the SEA control function is used. "AUTO" is displayed below the icon when the automatic SEA control function is used.

⓫**LONG PULSE ICON** ⓛ (p. 9)
Displayed when the long pulse is used.

⓬**NORTH MARK**
The north mark indicates the true north direction.

⓭**HEADING LINE** (p.16)
The heading line indicates the ships bow direction.

⓮**CROSS-LINE CURSOR**
Used to measure the bearing and distance, setting the alarm zone, selecting the ARPA/AIS targets, and so on.
ⓘ The cross-line cursor can be moved to sixteen directions by pushing or holding a cursor pad.

⓯**AIS ICON** ◨ (p. 26)
Displayed when a valid VDM sentence is received from the [NMEA1] (AIS) port.
The indicator disappears if the AIS signal is not received for 6 minutes and 40 seconds.

⓰**EBL1/ VRM1 READOUTS** (pp. 17–20)
Displays the bearing of the Electronic Bearing Line (EBL) 1 and the distance of the Variable Range Marker (VRM) 1, when the EBL1 and the VRM1 are used.
ⓘ Nautical miles (NM) or kilometers (km) can be selected in the Initial menu as the distance unit in the Initial menu.

⓱**OWN SHIP INFORMATION**
Displays your own ship's latitude and longitude, course, and speed.
ⓘ To display the position, NMEA 0183 data is required.
ⓘ The speed unit in nautical miles (kn) or kilometers (km/h) can be selected as the speed unit in the Initial menu.

⓲**INFORMATION BOX** (pp. 14, 23, 26, 32)
Displays a detailed information of a selected target, such as AIS, ARPA, TLL, Waypoint, or, DSC.
ⓘ Refer to each section in this manual for details on the displayed information in each function.

⓳**CURSOR INFORMATION**
The current position of the cross-line cursor is displayed.
ⓘ Latitude and longitude (Lat/Lon) or Time to go (TTG) can be selected as the position format.
ⓘ An external NMEA data in 0183 format is required.
• Displays the bearing and distance to the cross-line cursor.

Indicator	Description
R	Relative bearing
T	True bearing
M	Magnetic bearing

ⓘ Bearing data and position data are required.

⓴**EBL2/ VRM2 READOUTS** (pp. 17–20)
Displays the bearing of the Electronic Bearing Line (EBL) 2 and the distance of the Variable Range Marker (VRM) 2 when the EBL2 and the VRM2 are set.
ⓘ Nautical miles (NM) or kilometers (km) can be selected as the distance unit in the Initial menu.

㉑**ARPA ICON** ◙ (p. 23)
Displayed when one or more targets are automatically acquired by auto acquire function.

㉒**PLAIN POSITION INDICATOR SCOPE AREA**
Displays the radar picture and plots the data such as vessels, bases, and so on.

㉓**FIXED RANGE RINGS** (p. 25)
Displays the distance at fixed intervals from the own position. The interval distance is indicated by the ring range readout (❷).
ⓘ These rings are displayed when the "Ring Brill" item in the Color menu is set to ON (1 to 3).

㉔**ZOOM ICON** ⊞ (p. 10)
Displayed when the zoomed view is activated.

㉕**ECHO STRETCH ICON** ES (p. 11)
Displayed when the echo stretch function is used.

㉖**IR1 / IR2 ICONS** IR1 / IR2 (p. 10)
Displayed when the Interference Rejection (IR) function 1 or 2 is turned ON.

㉗**ALARM1 / ALARM2 ICONS** 1-IN / 2-IN (p. 21–22)
Displayed when the alarm 1 or 2 is set.

Count on us!