



## MARINE RADARS

# MR-1210R II

12.1-inch Color TFT, 4kW Radome Scanner

# MR-1210T II

12.1-inch Color TFT, 4kW Open Array Scanner

# MR-1210T III

12.1-inch Color TFT, 6kW Open Array Scanner



- 12.1-inch Large Color TFT Display (600×800 dots)
  - 4kW Radome Radar (MR-1210R II), 4kW Open Array Scanner (MR-1210T II), 6kW Open Array Scanner (MR-1210T III)
  - Stabilized Head Up Mode\*1
  - AIS Overlay Function\*2
  - Favorite AIS Function\*2
  - Simplified ATA Function
  - New User Interface
  - Optional Video Output Unit
- (\*1 External heading sensor required  
\*2 External AIS data required)



### MR-1210R II

4kW Radome Scanner,  
36NM range observation



### MR-1210T II

4kW Open Array Scanner,  
48NM range observation

### MR-1210T III

6kW Open Array Scanner,  
72NM range observation

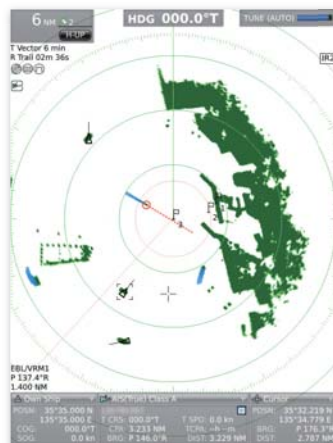
## MARINE RADARS

# MR-1210R II · MR-1210T II / T III

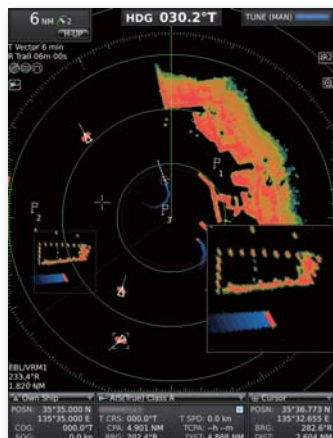
### 12.1-inch Color TFT Display (600×800 dots)



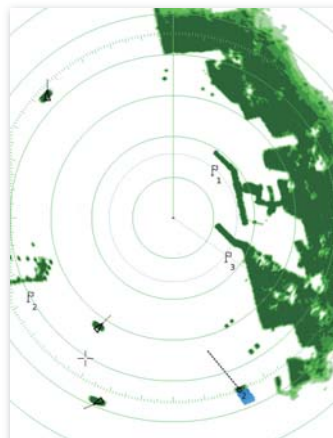
The 600cd/m<sup>2</sup> color TFT offers bright, vivid echoes with 32 steps gradient intensity. The color mode is selectable from day, night and user settings. The full screen mode enlarges radar echoes to full size with transparent menus and operating information.



Day setting



Night setting



Full screen mode

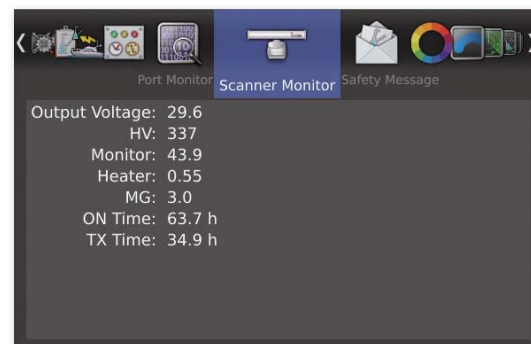
### New User Interface



The MR-1210 provides consistent menu structure and the operator can configure various settings via visually intuitive operation. The language setting is selectable from English and Vietnamese.



Color setting menu



Scanner monitor menu

# Line Radar with AIS Overlay Functions

## Stabilized Head Up Mode\*



When turning your own boat, the radar echo smoothly follows the boat movement without delay.

\*External heading sensor required.

## TLL (Target Latitude Longitude) Function\*



The MR-1210 can mark points with icons and transfer the position data with NMEA TLL sentences to other NMEA 0183 devices such as an external plotter.

\*External NMEA 0183 data and heading sensor required.

## True Trail Function\*



The true trail function cancels own ship movement and shows true moving objects with trails. The fine trail function draws a line of the object focus.

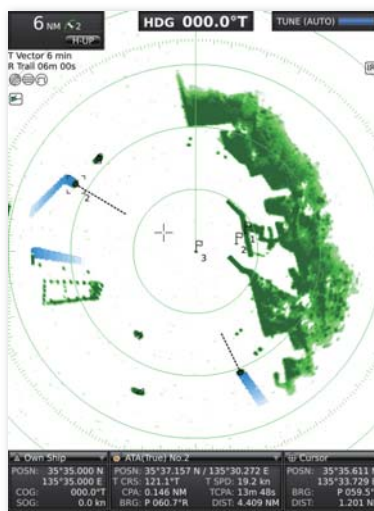
\*External NMEA 0183 data and heading sensor required.

(The True Trail Function is pending as of January, 2015. Will be available with a future firmware update.)

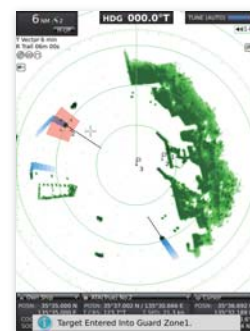
## Simplified ATA (Automatic Tracking Aid)



The simplified ATA function allows you to track up to 10 vessels with symbol icons. The CPA (Closest Point of Approach) and TCPA (Time to Closest Point of Approach) limits can be calculated and give an audible warning when any of the target vessels comes within the set range or time.



Simplified ATA

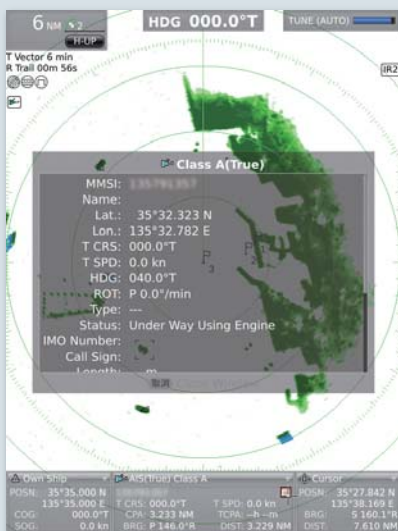


Guard zone alert example

## AIS (Automatic Identification System) overlay function\*



When connected to an external AIS receiver or AIS transponder, the MR-1210 overlays the received AIS information on the radar echo. You can see up to 100 AIS targets and check detailed information of the individual vessel such as speed, course, heading, vessel type and size.



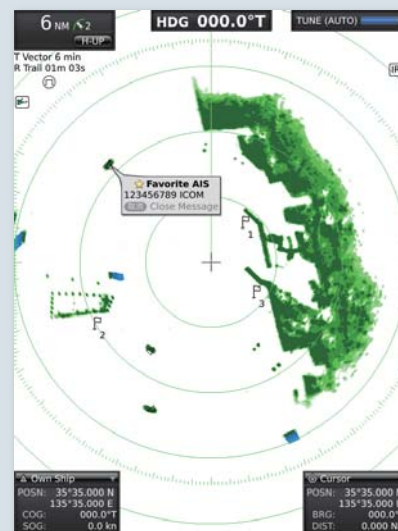
Other vessel AIS information



Own vessel information



AIS list



Favorite AIS

## Favorite AIS\*



The favorite AIS function notifies you when a "friend boat" comes into a preset range. You can easily follow the movement of the boat position on the radar display. Up to three "friends boats" are programmable.

\*External AIS data required.

SPECIFICATIONS

DISPLAY UNIT	MR-1210RI	MR-1210TII	MR-1210TIII
Display type	12.1-inch TFT color LCD		
Resolution	600×800 dots		
Minimum range	25m (at 1/8 NM range)		
Maximum range	36NM	48NM	72NM
Range scales (NM)	1/8, 1/4, 1/2, 3/4, 1, 1.5, 2, 3, 4, 6, 8, 12, 16, 24, 32, 36, 48*1, 64*2, 72*2 (*1 MR-1210TII/TIII only *2 MR-1210TIII only)		
Preheat time	90 seconds		
Power supply	10.2-42V DC		
Power consumption (at zero wind velocity)	60W (approx.)	70W (approx.)	80W (approx.)
Usable Temp. range	-15°C to +55°C		
Input data format	NMEA 0183, N+1, AUX, IEC61162-2		
Output data format	NMEA 0183		
SCANNER UNIT	MR-1210RI	MR-1210TII	MR-1210TIII
Scanner type	2ft (60cm) slotted waveguide array, enclosed in a radome	4ft (120cm) slotted waveguide array	
Rotation speed	24, 36rpm typ.	24, 36rpm typ.	22, 24, 36rpm typ.
Horizontal beamwidth	4°typ.	2°typ.	
Vertical beamwidth	22°typ.	20°typ.	
Side lobe	-18dB typ.	-24dB typ.	
Usable Temp. range	-25°C to +70°C		
Usable humidity range	Less than 95% (at 40°C)		
Frequency	9410MHz ±30MHz		
Modulation	PON		
Peak output power	4kW	4kW	6kW
Pulse-width/repetition rate	80nS/2160Hz, 80nS/1440Hz, 250nS/1440Hz, 350nS/1440Hz, 350nS/720Hz, 900nS/720Hz, 900nS/660Hz* (* MR-1210TIII only)		
Modulator	FET switching		
Intermediate frequency	60MHz		
IF bandwidth	10MHz, 3MHz		
Tuning	Auto/manual selectable		
Supplied system cable	15m; 49.2ft; OPC-2341	20m; 65.6ft; OPC-2342	

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

Applicable IP Rating

Ingress Protection Standard			
DISPLAY UNIT	IPX4	SCANNER UNIT	IPX6

OPTIONS

<p><b>SYSTEM CABLES</b></p> <p><b>OPC-2339</b> 20m (65.6ft) SYSTEM CABLE</p> <p><b>OPC-2340</b> 30m (98.4ft) SYSTEM CABLE</p>	<p><b>VIDEO OUTPUT UNIT</b></p> <p><b>UX-234</b> Analog RGB output for external monitor</p>
<p><b>CLASS B AIS TRANSPONDER</b></p> <p><b>MA-500TR</b></p>	<p><b>AIS RECEIVER</b></p> <p><b>MXA-5000</b></p>

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

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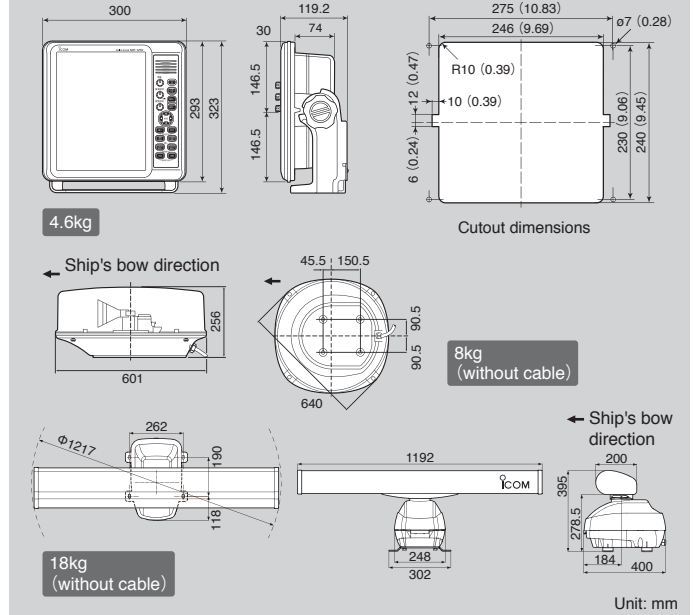
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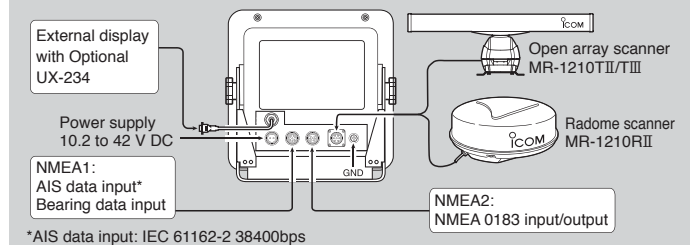
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DIMENSIONS



REAR PANEL VIEW



Optional Video Output Unit

With an optional video output unit, UX-234, the MR-1210 can be connected to an external display. Same radar echoes can be observed on the main and secondary displays at the same time.

