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## MARINE RADAR Model FAR-1513-BB/1523-BB

Photo: 15" Marine Display MU-150HD (Optional supply)

# Easy to use Marine Radar with advanced capabilities, at a great value



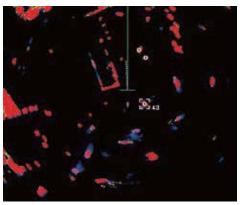
Photo: 15" Marine Display MU-150HD (Optional supply)

Model FAR-1513-BB/1523-BB

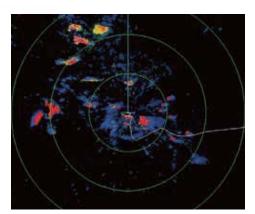
- FAR-1513-BB/1523-BB Marine Radar features advanced functionality in a small and easy to use package
- ► Accurately track other vessels with advanced Fast Target Tracking<sup>™</sup> (TT) functionality
- Improved sea and rain clutter suppression function
- Improved user interface for simple and efficient operation
- ► Target Analyzer<sup>™</sup> function for improved situational awareness

## NEW Target Analyzer<sup>™</sup> function

The Target Analyzer<sup>™</sup> function displays moving targets, stationary targets, rain, sea surface and targets closing in on your vessel in different colors. Spot hazardous targets directly, simply by their color. Target Analyzer<sup>™</sup> can improve situational awareness, hence increasing safety at sea.



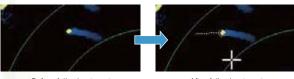
Moving targets are displayed in pink



Rain echoes are displayed in blue

## NEW Fast Target Tracking™ (TT)

It only takes a few seconds after a target has been selected, for a speed and course vector to be displayed. With accurate tracking information, estimating other vessels course and speed is made easier.



Before following target

After following target

## ACE function suppresses false echoes

Quickly adjust the radar image with a single action. When Automatic Clutter Elimination (ACE) function is activated, the system automatically adjusts the clutter reduction filter and gain control according to the sea and weather conditions selected (Calm/Rough Sea/Hard Rain).





Automatic Clutter Elimination (ACE) OFF

Automatic Clutter Elimination (ACE) ON

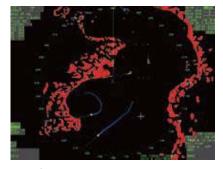
#### Display Radar overlay on your connected GPS Chart Plotter

### AIS connectivity built-in

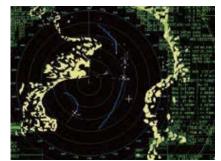
Connect a required AIS transponder to overlay AIS targets on the radar display. Up to 40 different targets can be tracked simultaneously.

### Customize the display according to your needs

FAR-1513-BB/1523-BB offers impressive customizability and freedom when it comes to display. Choose how you want echoes to be displayed so that you can maximize visibility and efficiency.



Simple display, without range rings



All display, range rings and TT targets

#### Compact easy to use control unit

Individual knobs for gain/rain/sea clutter suppression as well as RotoKey and a touch panel allow efficient, simple operation. An optional trackball unit as well as a regular USB mouse can also be used.

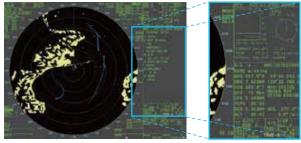


Control Unit

Optional Trackball Control Unit

#### Customizable data display for efficient and simple operation

Whether it be a close up window of approaching targets or target information, you can customize the display freely to show the information you need at hand.



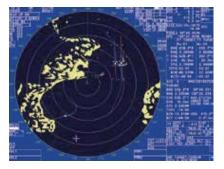
Close up with AIS-information

### High visibility MU-190 and MU-150HD Marine Display

19" LCD MU-190 and 15" LCD MU-150HD are available as optional supply to fit the needs of your unique vessel. A high brightness display ensures great visibility in the most difficult of conditions.

#### Scalable Ethernet Network System

The 100 Base-TX Ethernet is utilized to network two radar systems together without the need for extra devices. For convenience, you can control both radars from any of the connected displays.



Circle display

#### SPECIFICATIONS

1. 1.1 1.2 1.3 1.4 1.5	ANTENNA UNIT Antenna type Radiator length Horizontal beamwidth Vertical beamwidth Sidelobe attenuation XN12A XN13A Polarization	Slotted waveguide array 4 ft (XN12A), 6 ft (XN13A) 1.9° (XN12A), 1.35° (XN13A) 20° -24 dB (within ±20° of main-lobe) -28 dB (within ±20° of main-lobe) Horizontal
<b>2</b> 2.1	Rotation RADAR DISPLAY* Screen resolution *Display unit is optional sup	24 rpm (RSB-0070), 48 rpm (RSB-0073) 1024 x 768 (XGA)* ply.
3. 3.1 3.2 3.3 3.4 3.5 3.6 3.7	RF TRANSCEIVER Frequency Output power FAR-1513 (-BB) FAR-1523 (-BB) Minimum range Range discrimination Range accuracy Bearing accuracy IF frequency	9410 MHz ±30 MHz, P0N 12 kW 25 kW 25 m 1 % of range in use or 10 m whichever is the greater ±1° 60 MHz
<b>4.</b> 4.1 4.2	PROCESSOR UNIT Warm-up time Presentation mode	90 s approx. (FAR-1513) 3 minutes approx. (FAR-1523) Head-up, STAB Head-up, North-up (TM/RM), Course-up, Stern-up
4.3	Marks	Cursor, Radar ring, Heading mark, North mark, Bearing line, Vector, Map mark, Zoom, VRM, EBL, Acquisition zone
4.4 4.5	Target tracking (TT) AIS	Auto or manual acquisition: 50 targets in 0.2-32 NM Tracking: 5/10 pts on all target Time of vector: 0 to 60 minutes Display capacity: 300 targets, Tracking: 5/10 pts on activated target
4.6	Echo trail	Time of vector: 0 to 60 minutes True/Relative, Trail length: 0 to 30 minutes (30 s steps) or continue
4.7 4.8	Radar map Interswitch function	5,000 pts selectable from menu
5. 5.1	INTERFACE Number of ports on pro Heading Serial	<b>Decessor unit</b> 1 port: AD-10 format or IEC61162-2 2 ports: AIS/HDG (IEC61162-2) 4 ports: GPS/I OG/AMS/FCDIS (IEC61162-1)

Heading	1 port: AD-10 format or IEC61162-2
Serial	2 ports: AIS/HDG (IEC61162-2)
	4 ports: GPS/LOG/AMS/ECDIS (IEC61162-1)
Contact closure	6 output ports: 4ch, System Fail, Power fail
	1 input port: Remote ACK
Remote display	2 ports: Signal: HD, BP, Trigger and Video
LAN	1 port: Ethernet 100Base-TX
DVI	1 port: DVI-D for main display
RGB	1 port: VDR or RGB monitor
Data sentences	ABK, ACK, ACN, ALR, BWC, BWR, CUR, DBK, DBS,
Input	DBT, DPT, DTM, GBS, GGA, GLL, GNS, HBT, HDG,
	HDM, HDT, MTW, MWV, RMB, RMC, RTE, THS, VBW,
	VDM, VDO, VDR, VHW, VTG, VWR, VWT, WPL, ZDA
Output	ABM, ACK, ALC, ALF, ALR, ARC, BBM, EVE, HBT,
	OSD, RSD, TLB, TLL, TTD, TTM, VSD
	Serial Contact closure Remote display LAN DVI RGB Data sentences Input

#### 6. POWER SUPPLY

7.1

6.1 Processor unit FAR-1513 (-BB) 24 VDC: 5.0 A max. (24 rpm), 5.6 A max. (48 rpm) FAR-1523 (-BB) 24 VDC: 6.4 A max. (24 rpm), 7.0 A max. (48 rpm) 6.2 Rectifier (RU-1746B-2, option) 100-115/200-230 VAC, 1 phase, 50/60Hz

#### **ENVIRONMENTAL CONDITIONS** 7

Beware of similar products

Ambient temperature Antenna unit -25°C to +55°C (storage: +70°C or less) Processor unit -15°C to +55°C 7.2 Relative humidity 93% or less at +40°C 7.3 Degree of protection Antenna unit IP26 Processor unit IP20 (IP22: option) Control unit IP22 7.4 Vibration IEC 60945 Ed.4

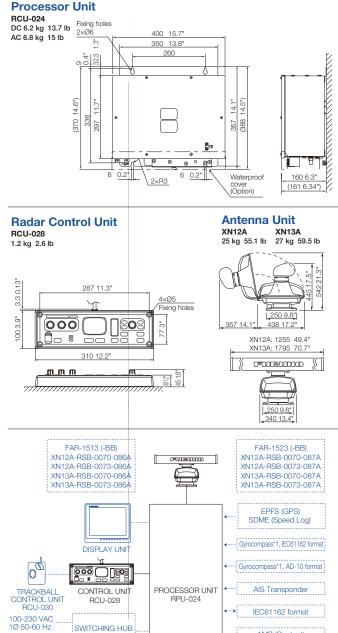
#### EQUIPMENT LIST

#### Standard 1. Processor Unit RPU-024

- Control Unit RCU-028
  Antenna Unit with cable, 10/15/20/30 m (Specify when ordering)
- 4. Standard Spare Parts and Installation Materials

#### Option

- Display Unit MU-150HD or MU-190, customer supply.
  Trackball Control Unit RCU-030
- 3. AD Converter AD-100
- S. AC-DC Power PR-240, PR-850A
  Bectifier RU-3423/RU-1746B-2/RU-3424
- Radar signal cable (1 m/5 m/10 m/15 m) RW-4864 1M/RW-4864 5M/RW-4864 10M/RW-4864 15M 8. For Display Unit, DVI cable (10 m) DVI-D/D S-LINK 10M 9. Switching Hub HUB-100



······ Optional supply

AMS (Contact)

Sub Display 1

Sub Display 2

All brand and product names are registered trademarks, trademarks or service marks of their respective holders.

HUB-100

RECTIFIER

RU-1746B-2

RU-3424

INTERSWITCH

100/110/115

1Ø 50-60 Hz

200/220/230 VAC