Overview Of Software Update For FR10 and FR12

Date: Nov 2023

Model: **FR10**

Model: **FR12**

New Software Version 01.08
(includes v1.06 changes not released by FUSA)

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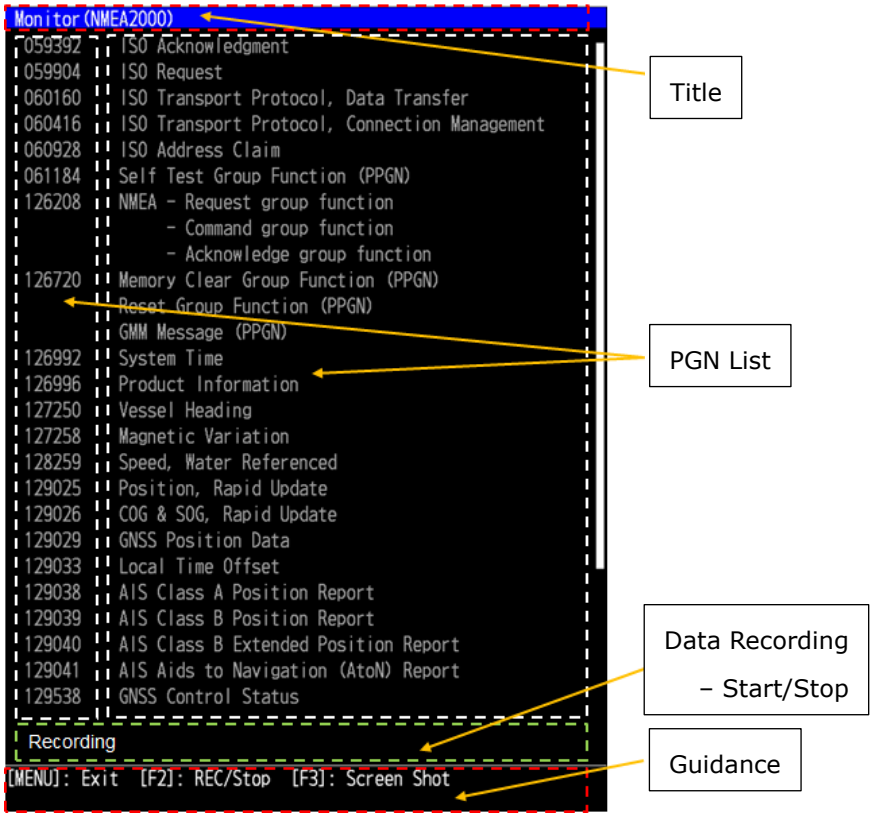
1. Improved NMEA2000 Network

1.1. AIS Input via NMEA2000

AIS data can be input to the FR10/12 via **NMEA2000**. While a variety of sensor data is available in NMEA2000, an AIS receiver or transponder such as the **FA40** or **FA70** can now be connected to the backbone for use by the display.

1.2. NMEA2000 Monitor
1.3. NMEA2000 Log Export to USB

- The description shown using the NMEA2000 monitor has been improved. It can be utilized to see the currently input PGN data. NMEA2000 input log recording can be exported to a USB memory like NavNet TZtouch2/3 series MFDs. This feature can be used for troubleshooting and sending data to Furuno support. For export, press [F2] key while showing NMEA2000 Monitor.



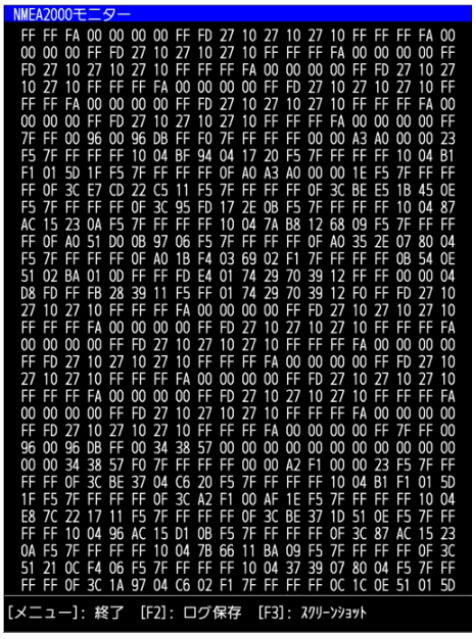
Title

PGN List

Data Recording – Start/Stop

Guidance

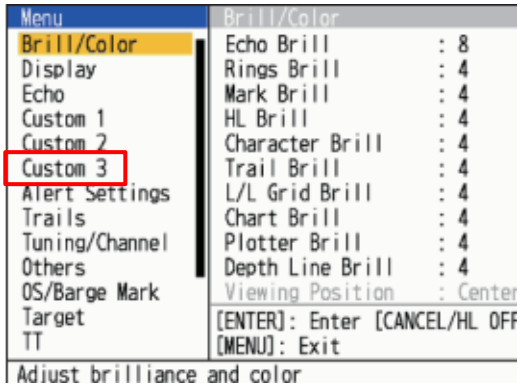
Previous: Showing binary data only



2. Custom 3 defaulted for Small Targets at Short Ranges

The default setting on **Custom 3** menu is optimized for detection of small targets at short ranges, especially when using **magnetron, open array types**.

E.g., Menu Screen – Access [Menu] – [Custom 3]



New Default of Custom 3:

(**Red**: Changed with V01.06)

No	Settings	Default - NEW Menu Item: Value	Default - Previous Menu Item: Value
1	Gain Mode	Manual	Manual
2	Manual Gain	**90**	80
3	Sea Mode	Manual	Manual
4	Manual Sea	**20**	0
5	Auto Sea	Advanced	Advanced
6	Rain Mode	Manual	Manual
7	Manual Rain	**8**	0
8	Auto Rain (*2)	Moderate	Moderate
9	A/C Auto (*3)	**On**	Off
10	Pulse Length (*4)	Normal	Normal
11	Echo Stretch	**2**	Off
12	Echo Average	**1**	3
13	Int Rejector	On	On
14	Display-Dynamic (*4)	Normal (*1)	Normal (*1)
15	Display-Curve	**3** (*1)	2 (*1)
16	Low Level Echo	0	0
17	Target Analyzer (*5)	Off	Off
18	T.A. Mode (*6)	Target	Target
19	RezBoost (*5)	Off	Off

Notes: *

(1) Echo images on the screen will vary depending on the combination of display-dynamic and -curve.

(2) With DRS4DL+, this menu cannot be set; the setting is fixed to [Moderate].

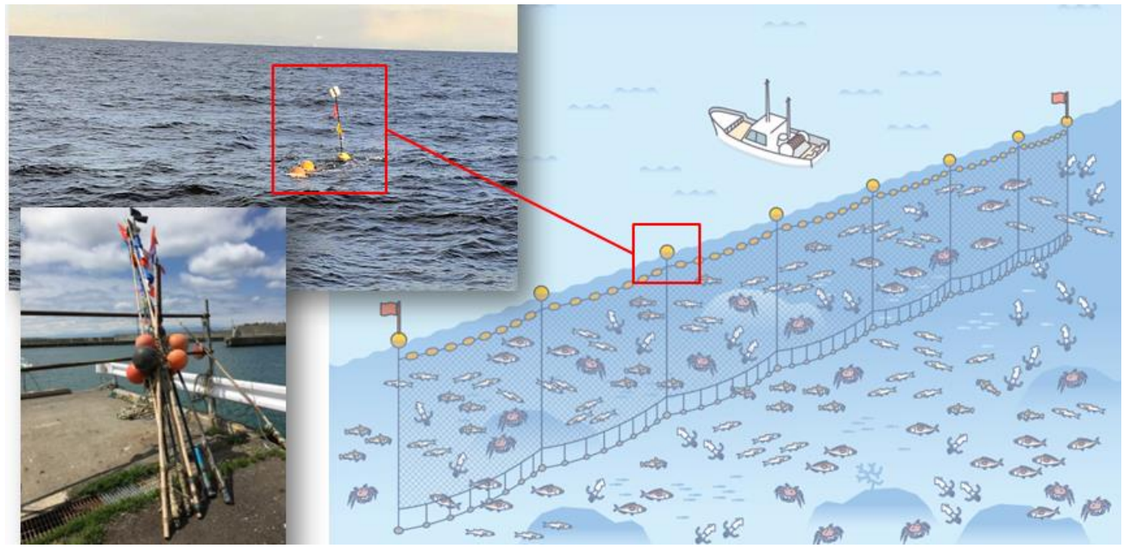
(3) With DRS-NXT series and DRS4DL+, this menu cannot be set; the setting is fixed to [Off].

(4) With DRS4DL+, this menu cannot be set; the setting is fixed to [Normal].

(5) With DRS X-Class series and DRS4DL+, this menu cannot be set; the setting is fixed to [Off].

(6) With DRS X-Class series and DRS4DL+, this menu cannot be set; the setting is fixed to [Target].

The next page shows a suitable usage of the refined Custom 3.



Custom 3 is well-tuned to detect small targets in short ranges such as buoys and floats over the sea surface.

The new default setting has been verified on a gill-net fishing vessel. The illustration with photos at left shows how buoys and floats are deployed over the sea. Some of them are with a flag and others are profiled very low without a flag. For navigation at night or dusk, it is difficult to identify them without well-tuned Radar. Although points and boundaries are entered on a plotter, the location of buoys can vary by tidal current or wind, so that Radar is the primary solution to monitor these targets. The refined Custom 3 is a good option to operate around these types of targets.

Recommended Radar sensors: Magnetron, open array types

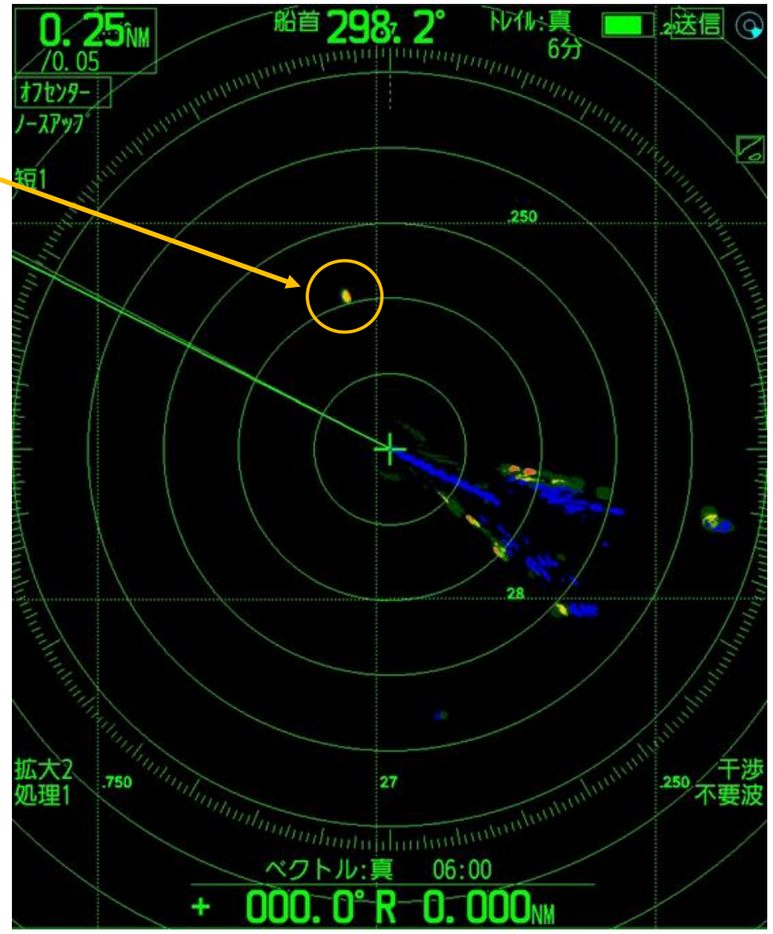
- DRS6A X-Class
- DRS12A X-Class
- DRS25A X-Class

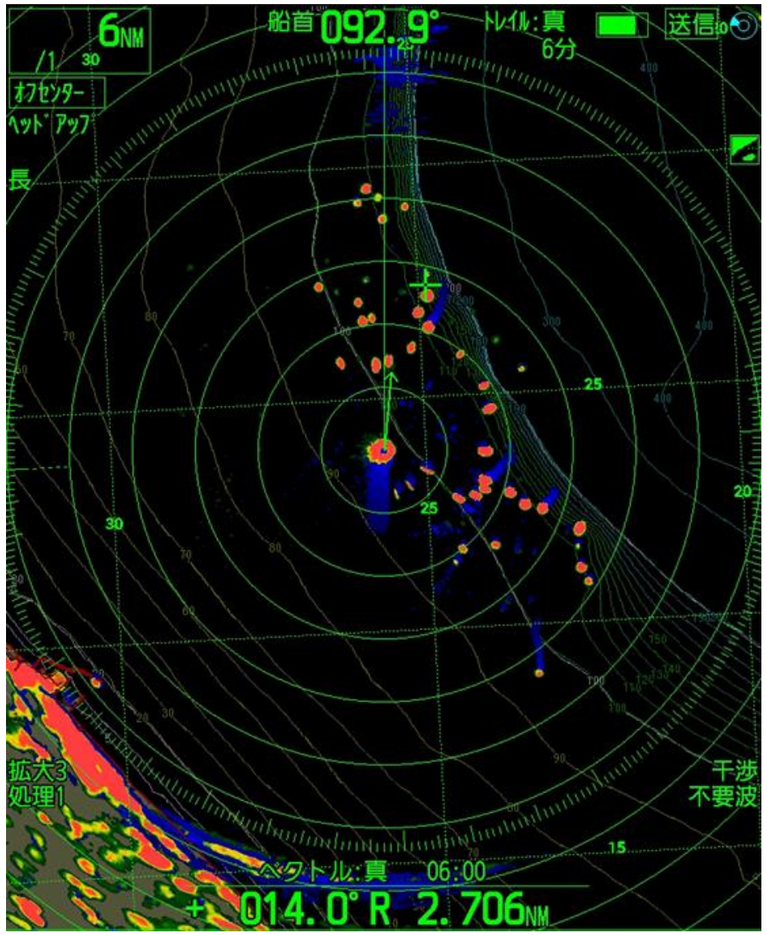
E.g., Gill-net and buoys

Case 1 – FR12 with DRS6A X-Class

Range Scale: 0.25 NM

A buoy located around 200 to 300 m is clearly shown on the screen with sea clutter suppressed.





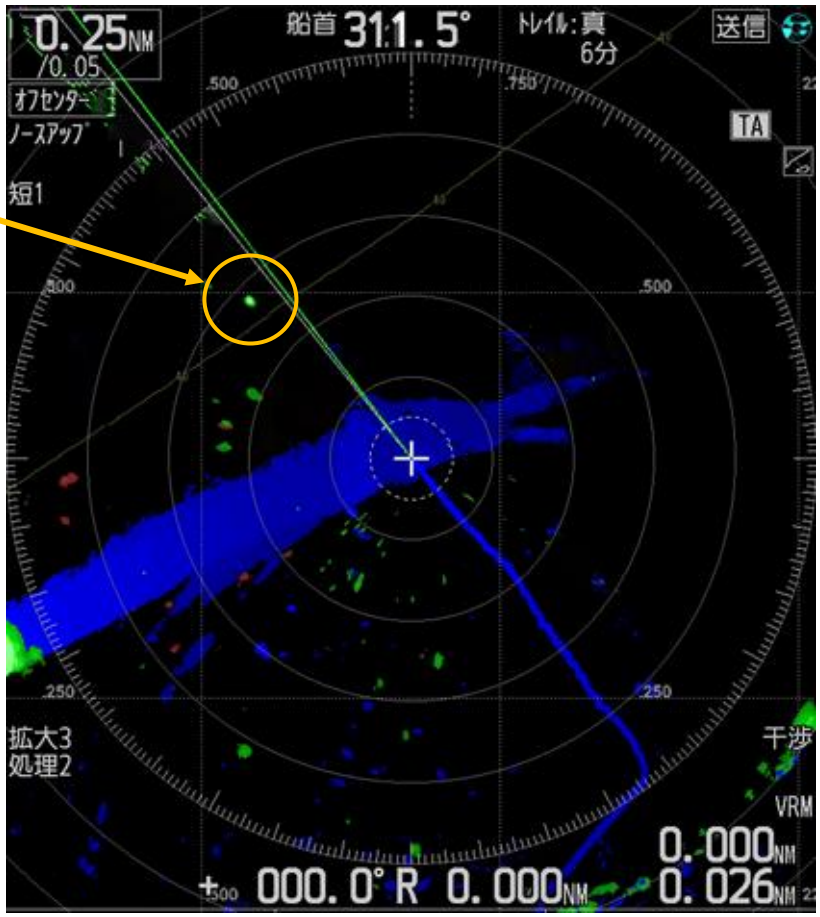
Range Scale: 6 NM

The FR12 is embedded with a plotter board (RP board) to show depth contour lines on the Radar screen.

Buoys at 2 to 4 NM are shown. You can observe the location and distribution of nets along the contour line.

Note:

Echo Trail is turned on. Targets with blue trails are vessels operating around the nets. Targets without trails are buoys over the nets.



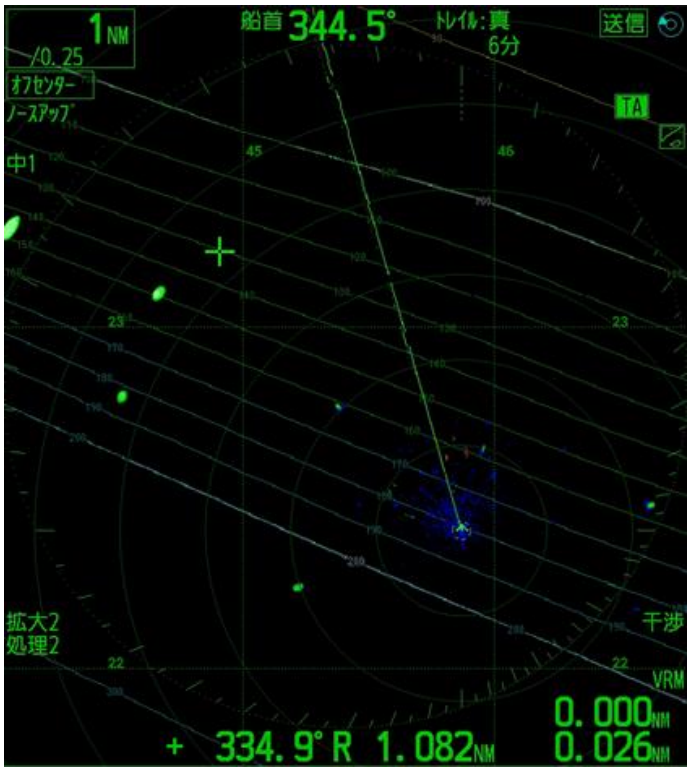
Case 2 – DRS6A-NXT

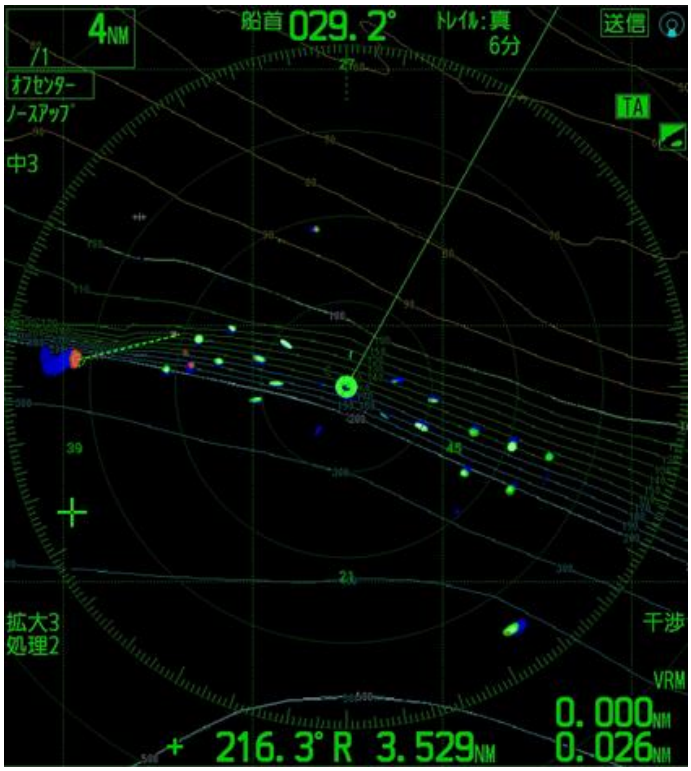
(Solid-State, open array type)

The small target is shown on the screen.

Buoys with flags are well-detected up to 2 NM. For further targets, magnetron types show more thicker echoes.

In the following examples in Range Scales: 1 NM and 4 NM, while targets are reasonably shown on the screen, buoys with flags are shown in thick echoes and ones without flags are in thinner or lighter.





3. Details of Software Versions

The following table shows the detailed indications of updated items on the FR10/12.

Unit	Program Type	Previous	New
FR10/12 MAIN Board (03P9699)	Starter	0359520-01.01	0359520-01.01 (No Change)
	Booter	0359521-01.01	0359521-01.**02**
	Application	0359522-01.05	0359522-01.**08**
	FPGA	0359523-01.04	0359523-01.04 (No Change)
	FontROM	0359524-01.02	0359524-01.**04**
	Language	0359525-01.02	0359525-01.**03**
	Package	0359526-01.05	0359526-01.**08**
FR12 RP Board (03P9705)	1st Booter	0359527-01.01	0359527-01.01 (No Change)
	2nd Booter	0359528-01.01	0359528-01.01 (No Change)
	Android OS	0359529-01.03	0359529-01.**04**
	Application	0359530-01.03	0359530-01.**04**

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