

# MDC-7900(P) / 7000(P) Series

# KODEN



Koden MDC-7900(P)/MDC-7000(P)  
Functional Highlights

# MDC-7900/7000 General



## **General Information of the Radar**

The Koden radar MDC-7912P/MDC-7012P is IMO, Wheelmark approved and can be used with the CAT1 and CAT 2 approval on all sizes of SOLAS vessels. The MDC-7000P / 7900P series radars is a conventional professional radar. The hardware as well as the real time operating system is specially designed from Koden for use in radars.

One advantage of this technology is, that an uninterruptable power supply is not necessary. The MDC-7000P / 7900P feature Koden's latest DSP (Digital Signal Processing) technology which provides a new level of performance to marine radars. Mariners have the option of manually adjusting parameters such as Gain, Sea and Rain Clutter or using the radars Auto Settings. In Auto Gain the radar will continually make adjustments, even when in harbor to give the optimum picture for both land targets and sea targets.

With Auto STC in heavy waves and rain the radar picture is automatically adjusted so that waves and rain clouds are removed yet genuine radar targets are still shown. Auto STC even compensates for differing wave shapes to Leeward and Windward of the vessel. Koden's radars are renowned for their excellent performance in adverse sea and rain conditions and the latest DSP technology makes it even easier for mariners to have the optimum radar picture despite the weather conditions thus enhancing vessel safety.

# MDC-7900/7000 General



C-Map charts, even as they are not usable for navigation, can be optionally displayed and underlaid to the radar picture.

TT (Target Tracking / ARPA) and AIS (Automatic Identification System) interfaces are provided as standard with 900 AIS targets and 100 TT capabilities. A “Target Association” feature helps declutter the screen, instead of having two separate symbols for AIS and TT targets. By interfacing to other navigation equipment such as ECDIS, GPS, AIS & Gyro, a new NMEA auto setting mode in the MDC-7000P / 7900P makes life easier for the installation engineer.

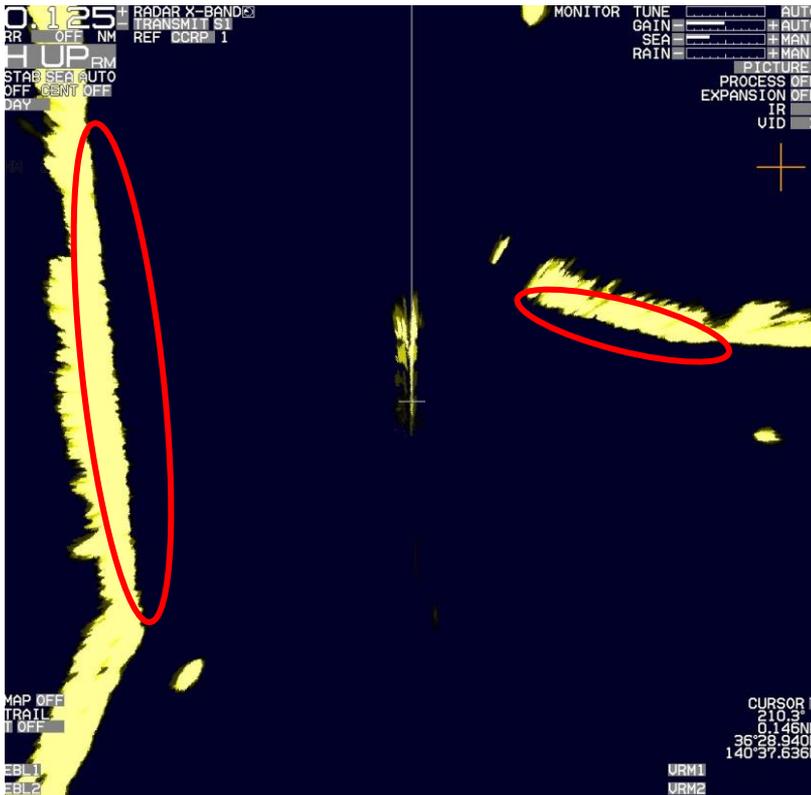
The brand Koden stands for very high quality and long life time.

# MDC-7900/7000 Features

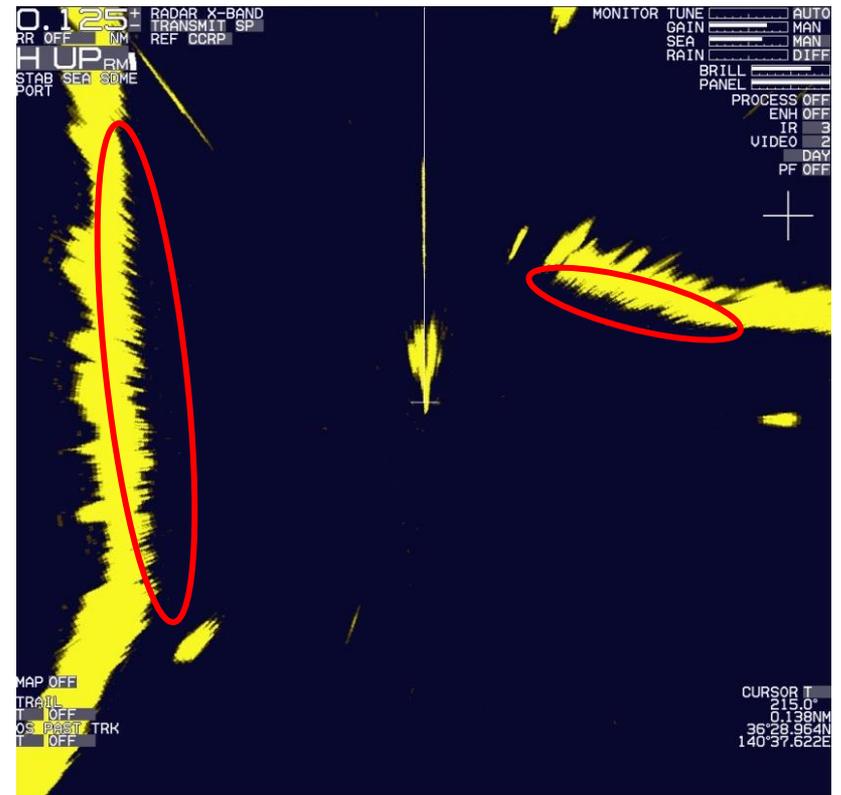


- Improvement on the image in short range
- Auto function is added on GAIN/STC
- GAIN/SEA/RAIN knobs are encoder type
- USB mouse can be used. => Remote control available
- Enhanced cursor access function
- System and setting backup
- Easy software update procedure

# Improvement on the Image in Short Range



MDC-7900  
0.125NM range



MDC-2900  
0.125NM range

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# Auto Function Added for GAIN/STC

- Auto Gain

Detect the input signal level and adjust the Gain automatically. It makes the visible image by adjusting the Gain for land and sea side each even at pier.

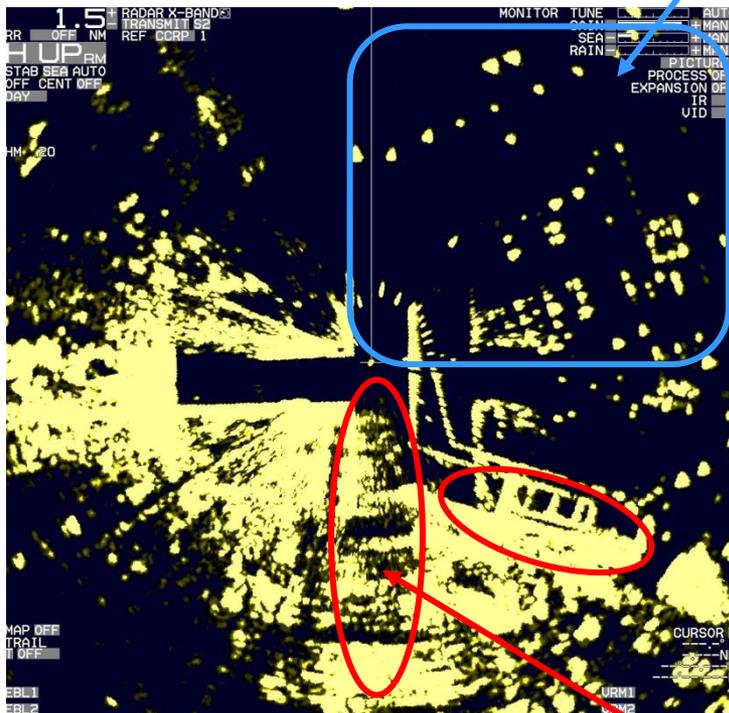
- Auto STC

Detect the wave form of input signal and make the best STC curve.

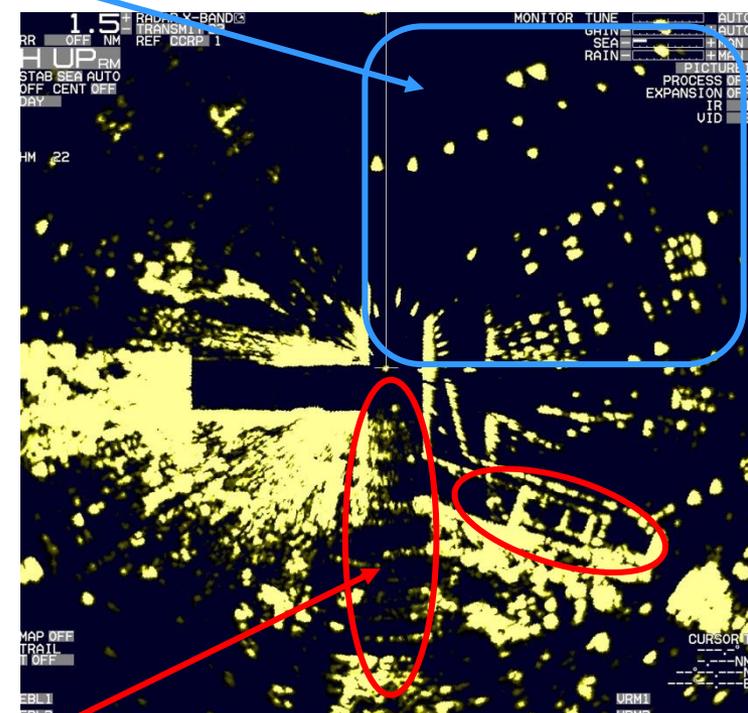
It's available even when the curve is changed by wind direction.

# Auto Gain

The targets in the sea can be seen at the same level.



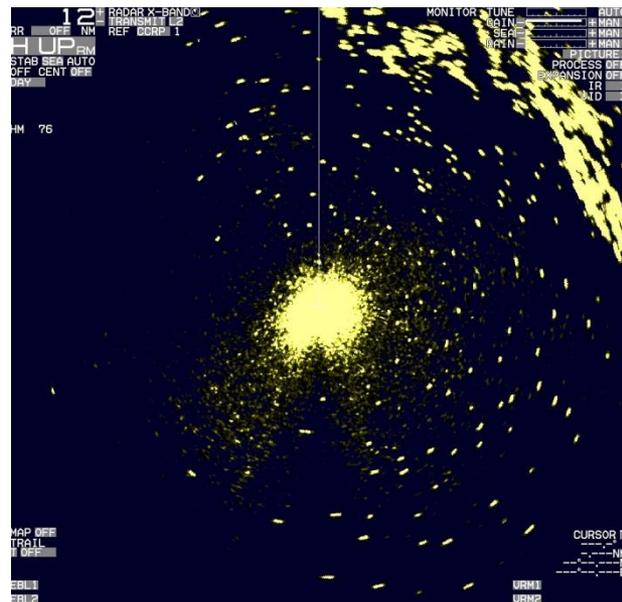
Manual Gain



Auto Gain

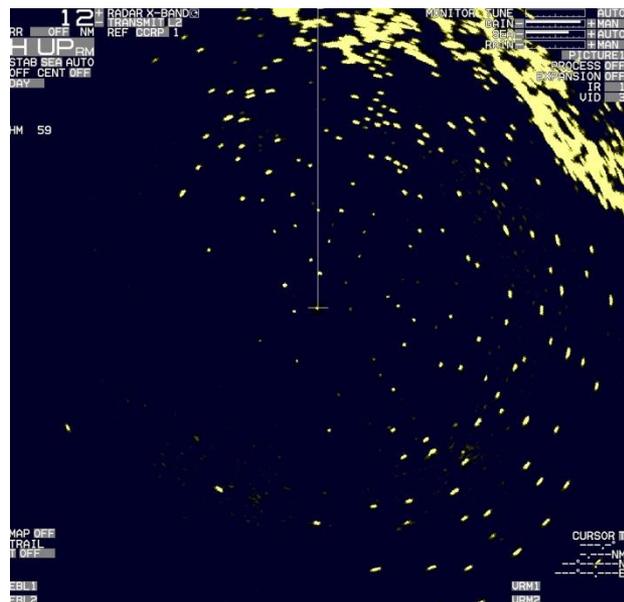
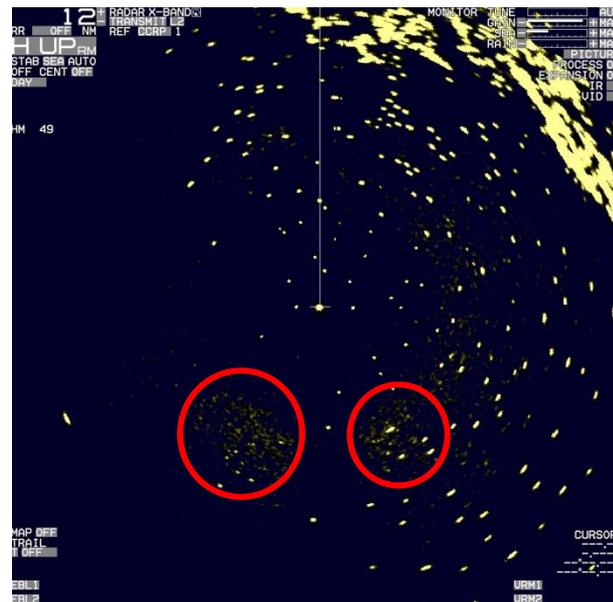
The Gain in land is adjusted with "Auto Gain".

# Auto STC Curve



## Manual STC

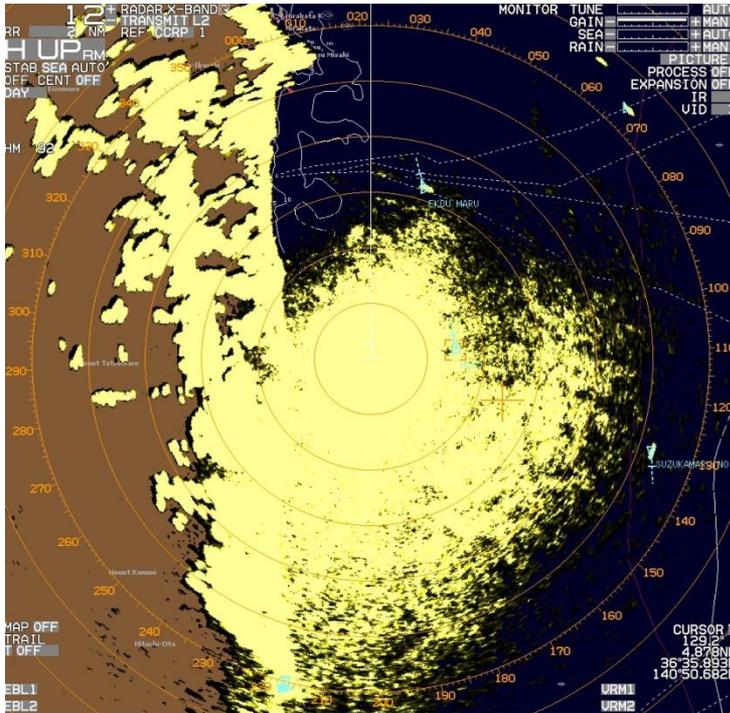
Wave shapes at Leeward are different from Windward. So, it may not disappear or may sometimes disappear completely.



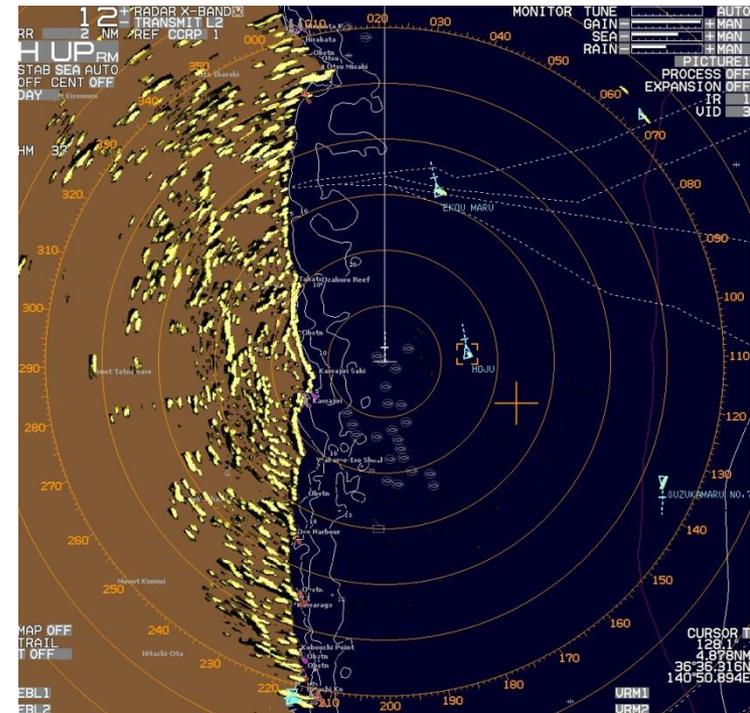
## Auto STC

STC curve is adjusted for all directions. It is useful at every environment.

# Adjustment on GAIN/SEA/RAIN KODEN



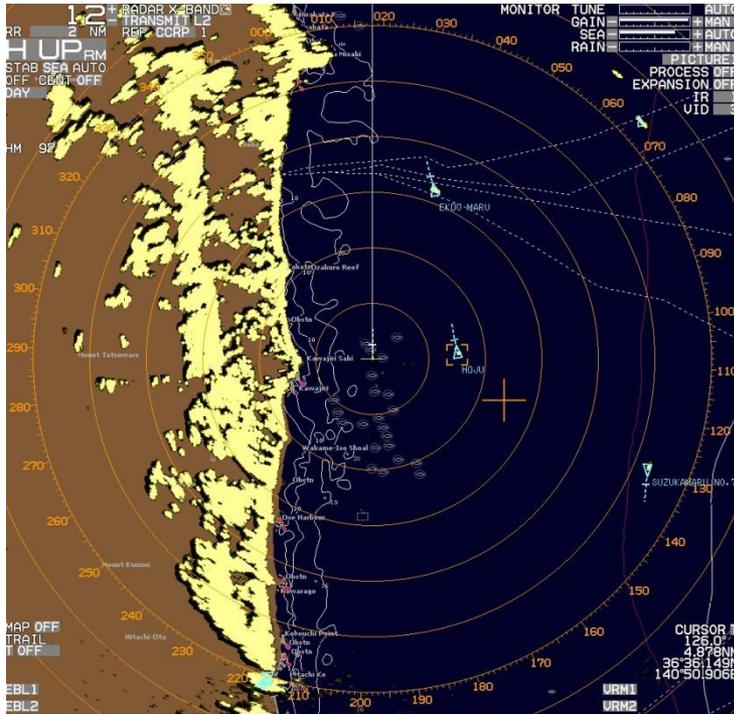
Wind and rain clouds



Manual STC + RAIN

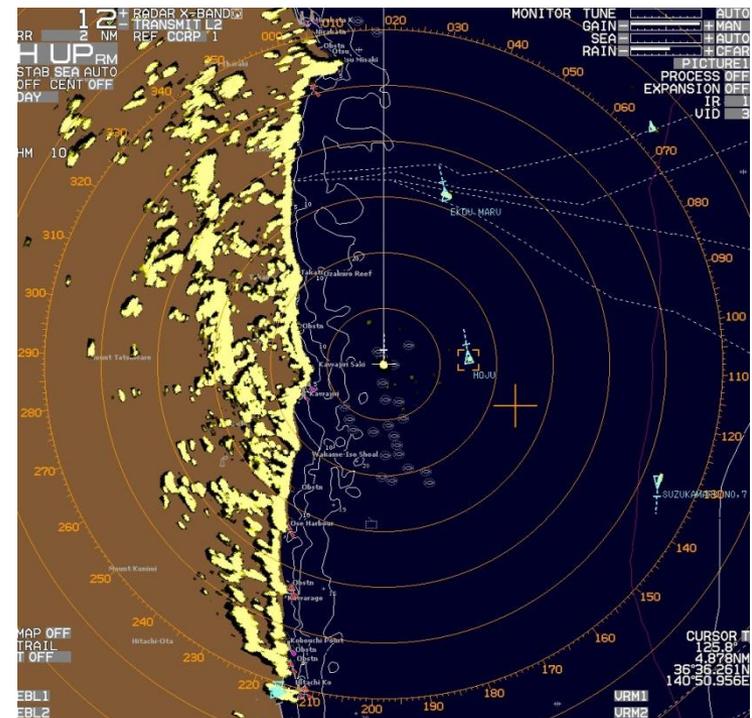
Rain clouds may not be eliminated by manual STC only.

# Adjustment on GAIN/SEA/RAIN **KODEN**



## Auto STC

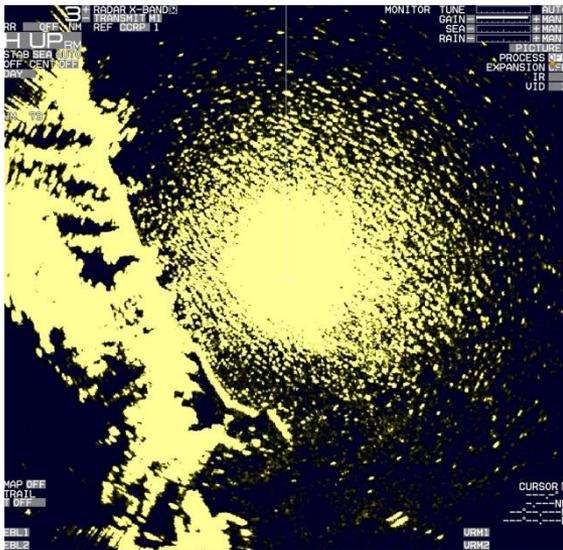
Since the curve is adjusted automatically, waves and rain clouds near the vessel disappear. The land appears thicker.



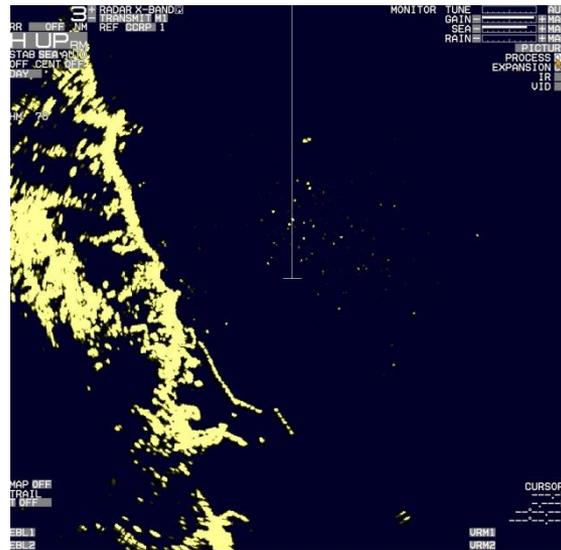
## CFAR

Waves and rain clouds disappear. The land appears thinner.

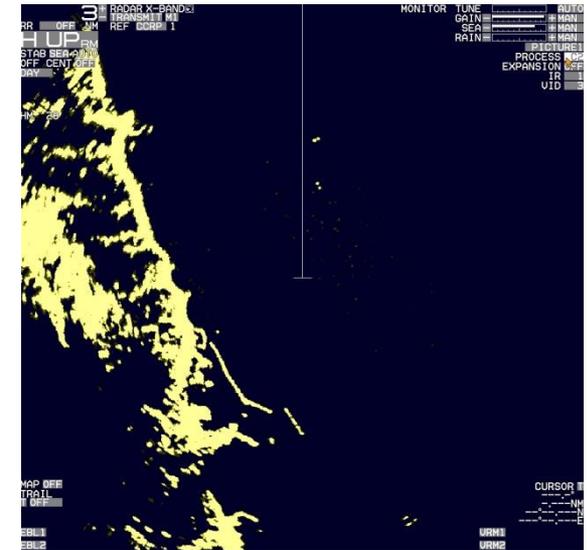
# PROCESS



Strong wave



STC cannot distinguish the target from not disappeared waves.

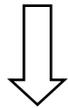


Only target will remain if "PROCESS" is used.

※When PROCESS is used during the rapid moving, the target may be disappeared.

# Connecting Trackball

Available to connect the trackball via USB



when you use with wireless type

You can operate at distant place (within the wireless coverage).

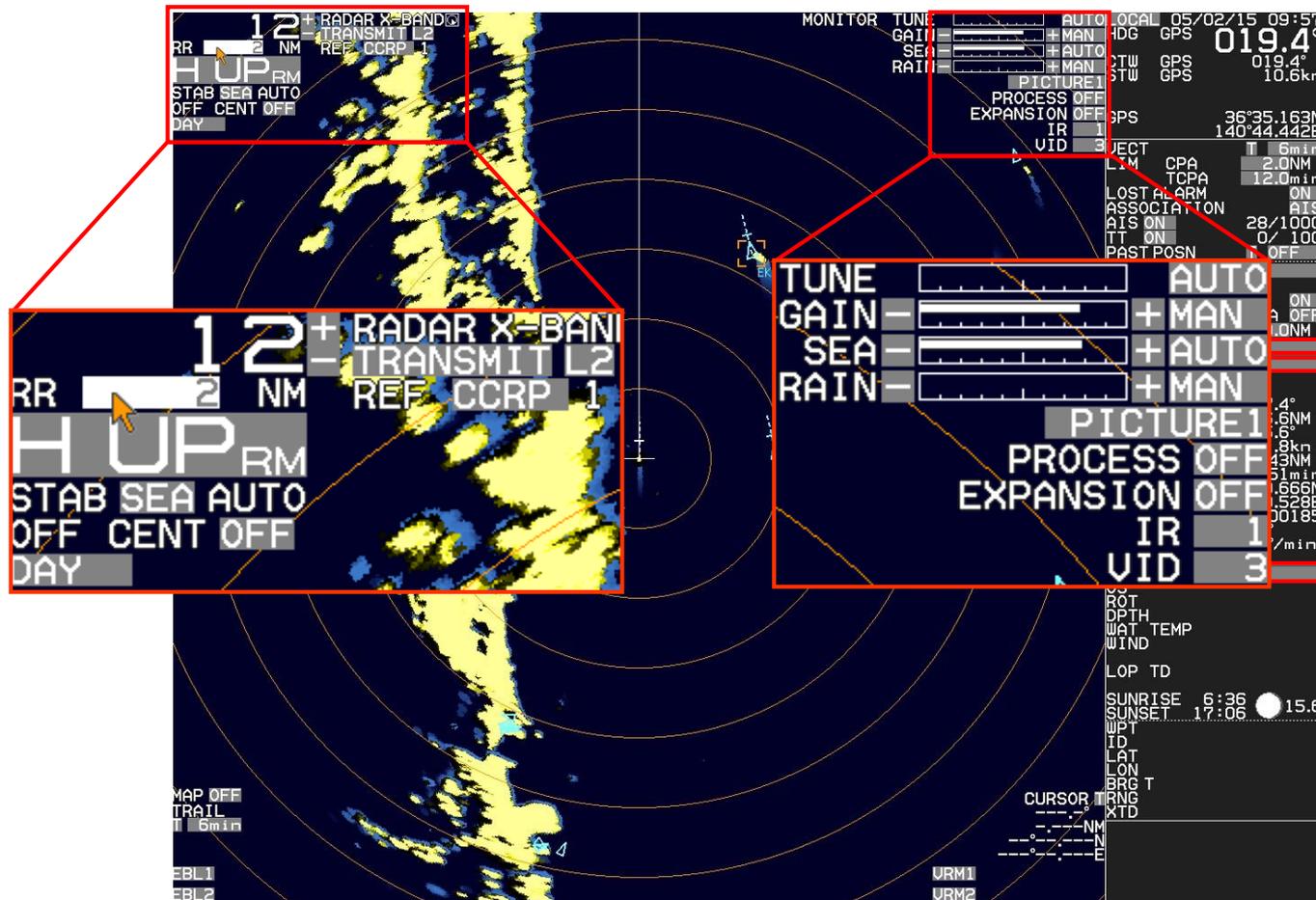


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# Cursor Access Function

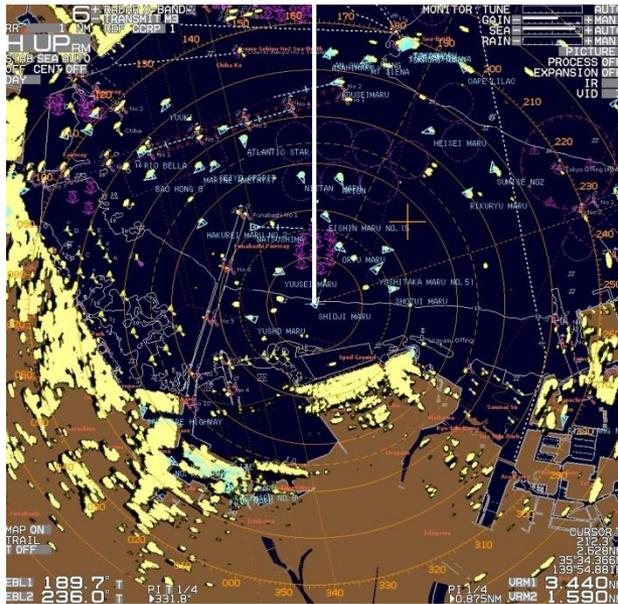


Easy operation by cursor access

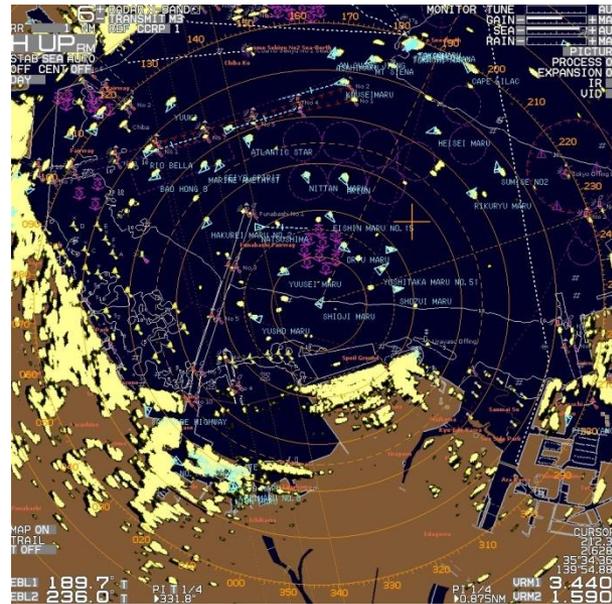


# How to Use OFF Key

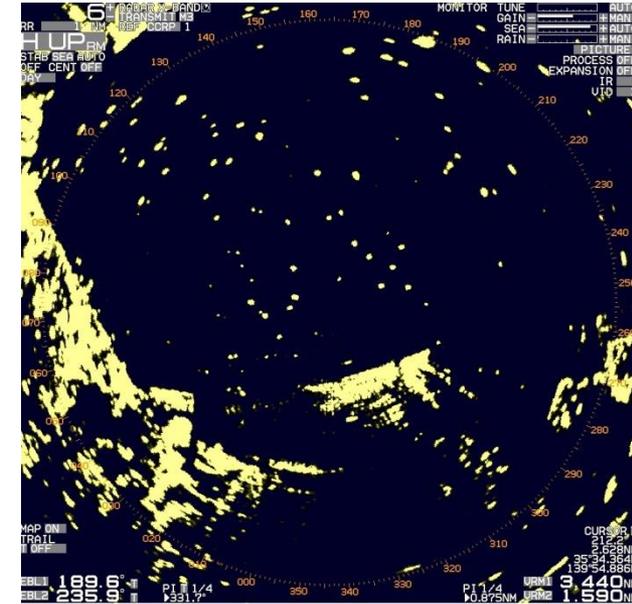
## HL OFF and Character OFF by OFF key



The radar image is not visible by chart overlay and navigation tools.



Heading line (HL) disappears by pressing OFF key.

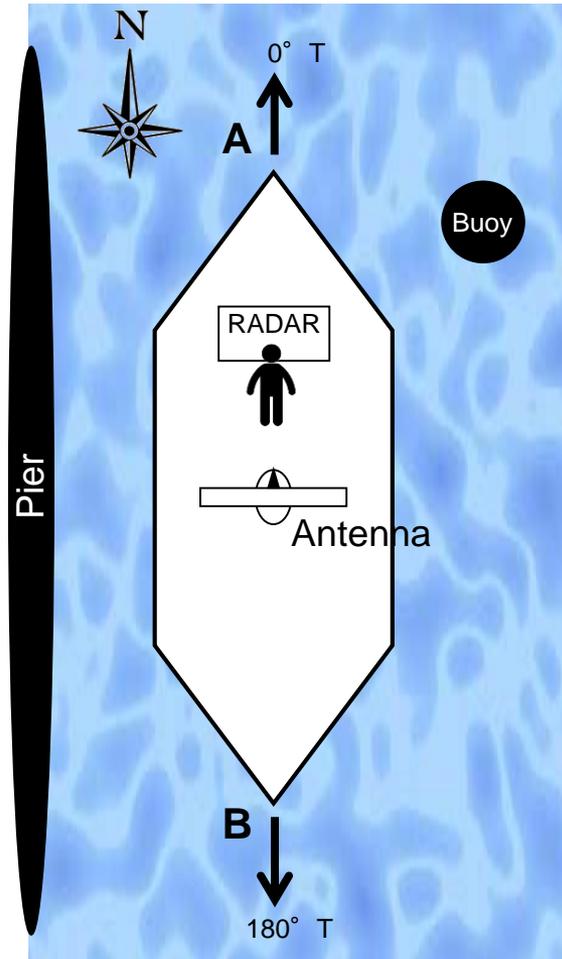
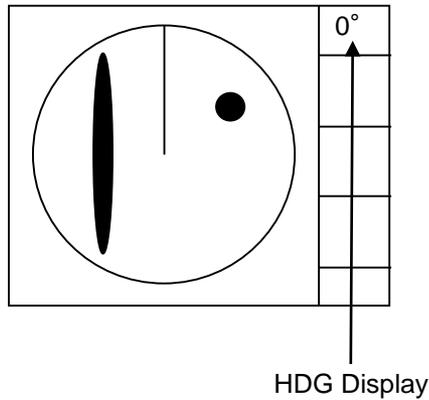


When OFF key is being pressed continuously, the almost all characters except radar echoes will disappear.

# Ferry Mode

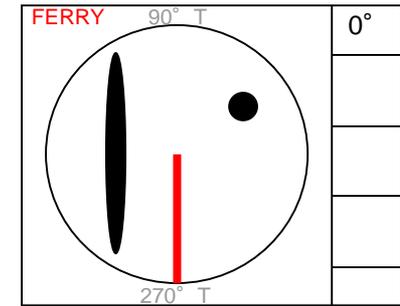
When the boat is moving to the direction "A"

FERRY MODE:OFF

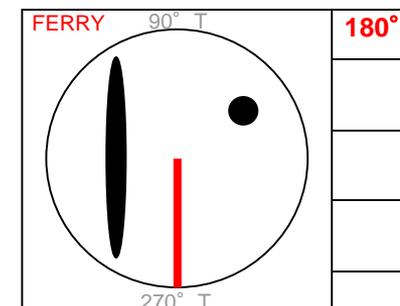


When the boat is moving to the direction "B"

FERRY MODE:ON



HDG:0°  
HEADING LINE:DOWN

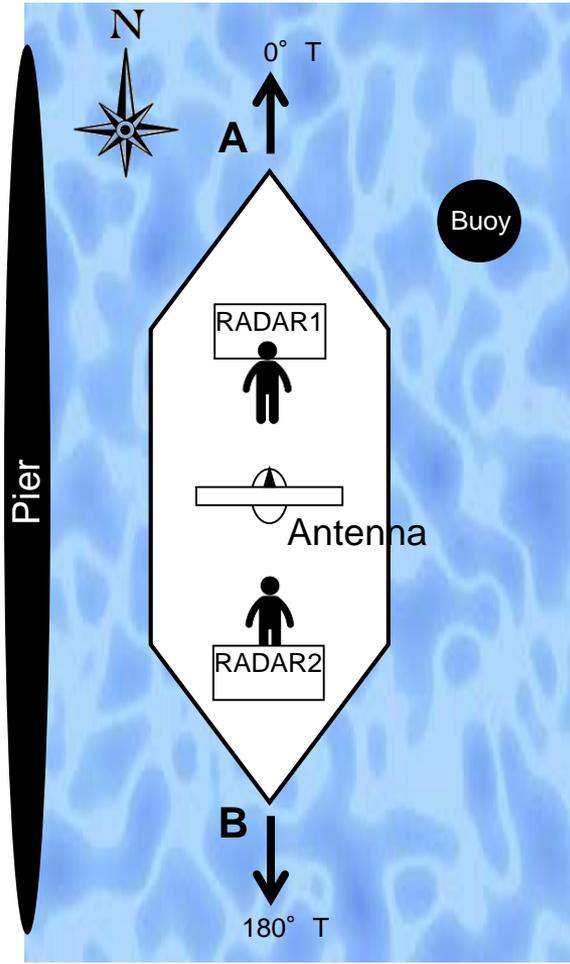
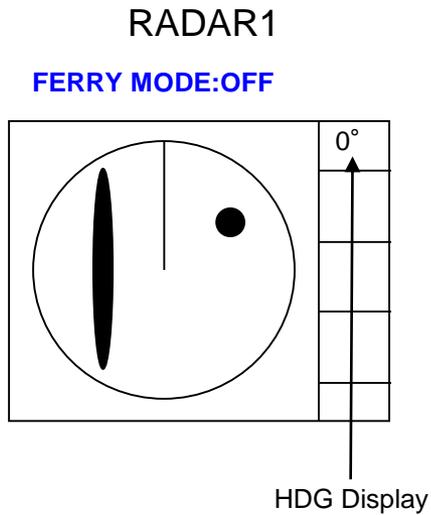


HDG:180°  
HEADING LINE:DOWN

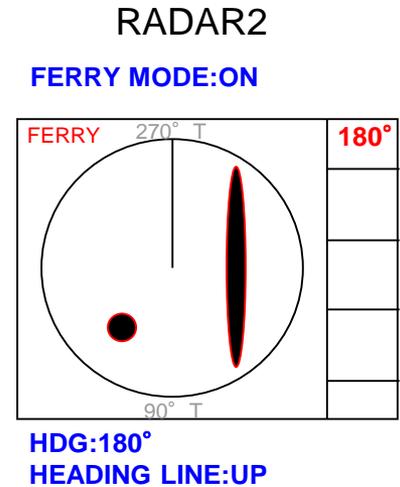
# Ferry Mode



When the boat is moving to the direction "A"



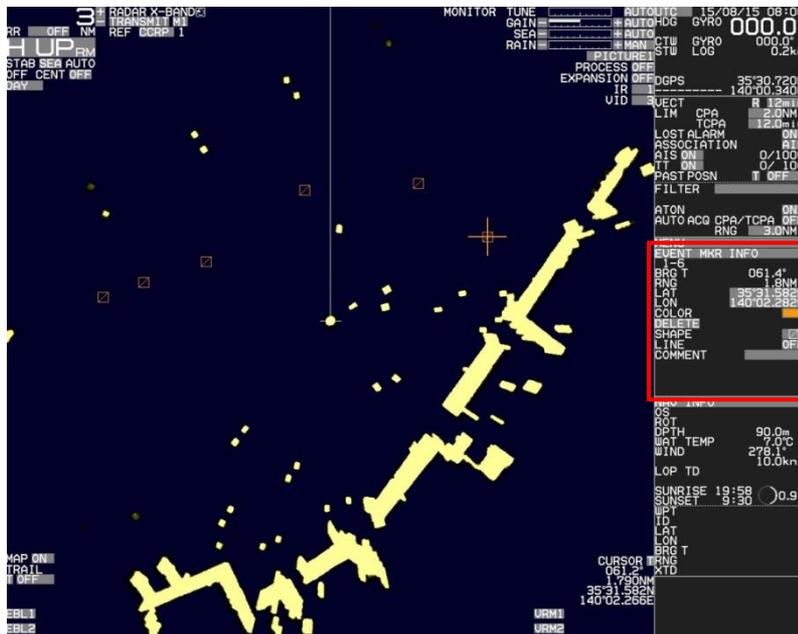
When the boat is moving to the direction "B"



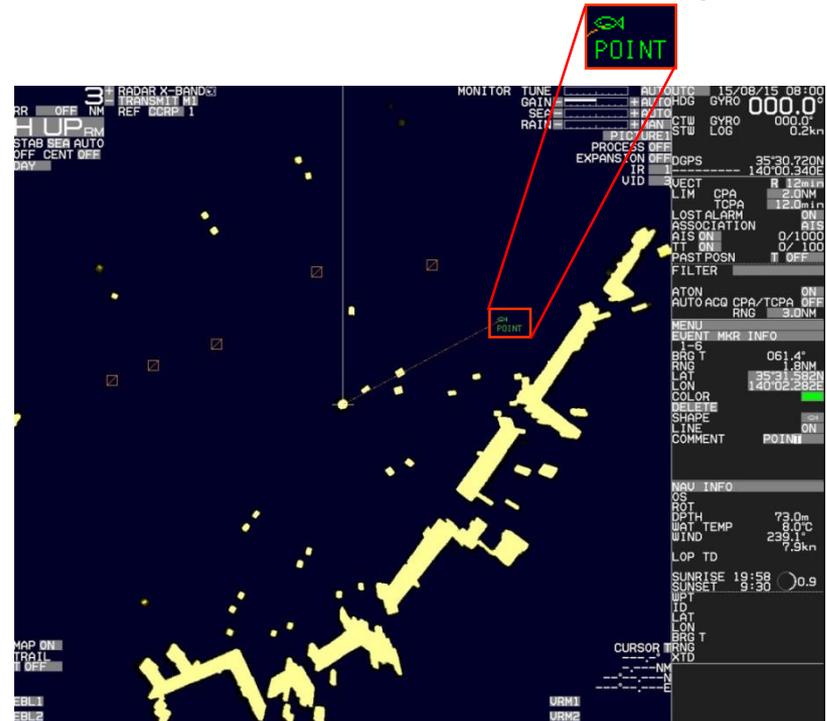
# Enhanced MAP

## Edit EVENT MARKER

(Same way for COAST LINE, NAV LINE, ROUTE, AREA)



Move the cursor to the mark on the display and press “ENT” key. EVENT MARKER INFO for selected mark is shown in the right hand side.



Color, shape, line from own ship and comment can be input in the EVENT MARKER INFO.

# Other Boat Tracking Function



## Procedure:

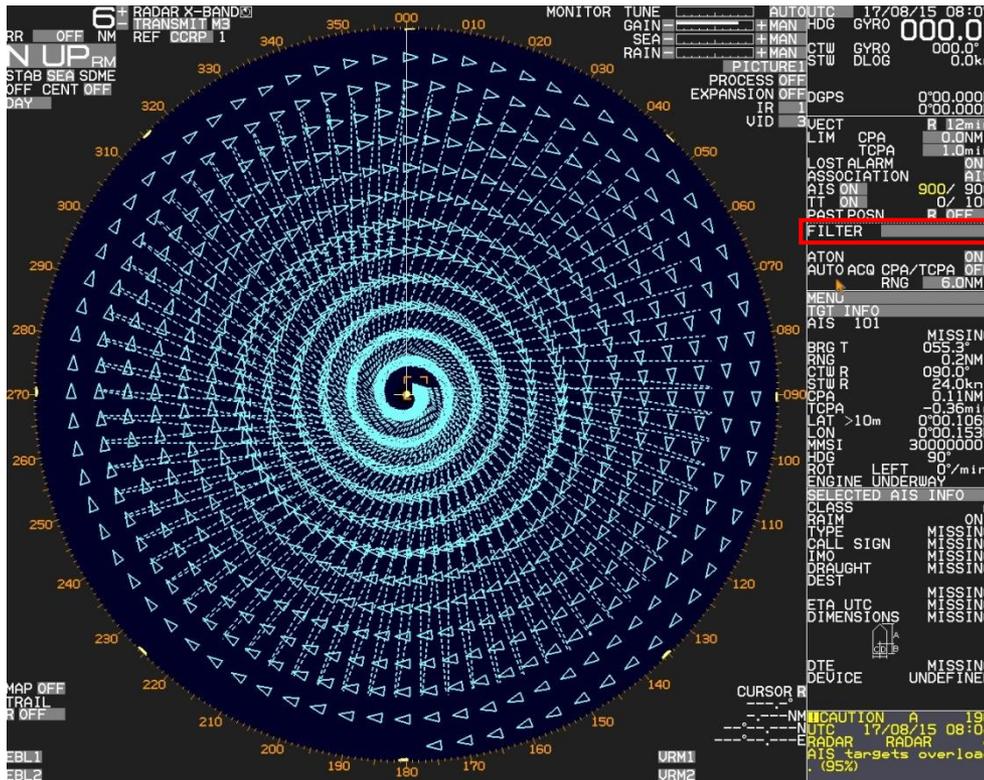
- Press ENT key and ACQ key simultaneously after the cursor move to TT or AIS symbol.
- The number next to ID is the trail number.
- Trail color can be changed by menu.
- Press “OFF key” after the cursor moves to TT or AIS symbol to finish the trail record.





# AIS Display

The number of AIS target is increased to 1,000 (900 for IMO model).  
If so many targets are showed on the screen, it may be very difficult to recognize the items on the screen.  
In such case, the target to show can be limited by using FILTER.



AIS filter indication

FILTER	
ATON	ON
AUTO ACQ	OFF
CPA/TCPA	OFF
RNG	0.0NM
05 >TARGET	
16 >AIS	
11 >AIS FILTER	
01 CLASS A	ON
02 CLASS B	ON
03 RNG	10.0NM
04 SPD	10.0kn
05 CPA/TCPA	ON
06 MOORED	ON
07 AT ANCHOR	ON
08 AGROUND	ON
09 NUC	ON
10 GZ	ON
11 ECHO ALARM	ON

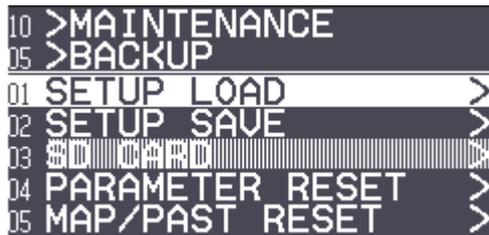
FILTER	
ATON	ON
AUTO ACQ	OFF
CPA/TCPA	OFF
RNG	0.0NM
05 >TARGET	
16 >AIS	
11 >AIS FILTER	
01 CLASS A	OFF
02 CLASS B	OFF
03 RNG	0.0NM
04 SPD	0.0kn
05 CPA/TCPA	OFF
06 MOORED	OFF
07 AT ANCHOR	OFF
08 AGROUND	OFF
09 NUC	OFF
10 GZ	OFF
11 ECHO ALARM	OFF

## Internal save of setup data

(1) To save data internally at the time of setup,  
[MAINTENANCE] > [BACKUP] > [SETUP SAVE] > [GO] and press ENT key.

(2) To restore from internal backup,  
[MAINTENANCE] > [BACKUP] > [SETUP LOAD] > [GO] and press ENT key.

**CAUTION: Cannot be performed while transmitting.**



# System Backup

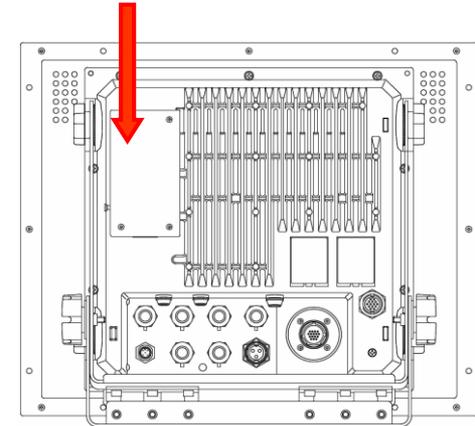


## External save of setup data

The external memory uses an SD memory card.

- (1) To perform external backup to SD card,  
 [MAINTENANCE] > [BACKUP] > [SD CARD] >  
 [XXX SAVE] > [GO] and press ENT key.
- (2) To restore from SD card backup,  
 [MAINTENANCE] > [BACKUP] > [SD CARD] >  
 [XXX LOAD] > [GO] and press ENT key.

Insert the SD card for back-up into upper SD card slot (1).



```

10 >MAINTENANCE
05 >BACKUP
01 SETUP LOAD
02 SETUP SAVE
03 SD CARD
04 PARAMETER RESET
05 MAP/PAST RESET
    
```

```

10 >MAINTENANCE
05 >BACKUP
01 SETUP LOAD
02 SETUP SAVE
03 SD CARD
04 PARAMETER RESET
05 MAP/PAST RESET
    
```

When SD memory card is not inserted, [SD CARD] menu is grayed out and cannot be operated.

```

10 >MAINTENANCE
05 >BACKUP
03 >SD CARD
01 SETUP LOAD
02 SETUP SAVE
03 MARK LOAD
04 MARK SAVE
05 TGT TRACK LOAD
06 TGT TRACK SAVE
07 OWN TRACK LOAD
08 OWN TRACK SAVE
    
```

When no data is found on the card, [XXX LOAD] menu is grayed out and cannot be operated.

```

10 >MAINTENANCE
05 >BACKUP
03 >SD CARD
02 >MARK SAVE
01 ALL
02 COAST LINE
03 NAV LINE
04 ROUTE
05 EVENT MKR
06 AREA
    
```

MARK data can be backed up by COAST LINE, NAV LINE, ROUTE, EVENT MKR, AREA or ALL.

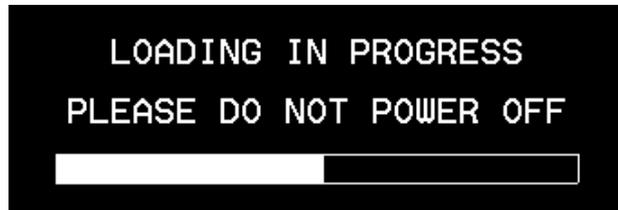
```

10 >MAINTENANCE
05 >BACKUP
03 >SD CARD
02 >MARK SAVE
01 >ALL
01 0
02 1
03 2
04 3
05 4
06 5
07 6
08 7
09 8
10 9
    
```

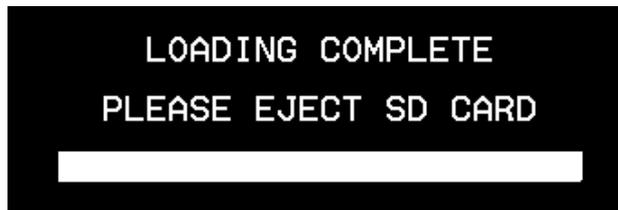
MAP data is saved block by block.

- How to upgrade the Firmware

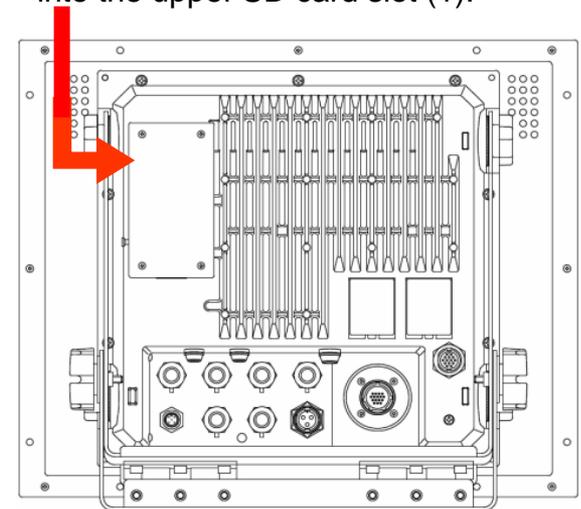
Turn on the radar after inserting the SD card with upgrading program (radar.mot) into the slot of the rear panel on display unit. It automatically starts upgrading.



The below is shown after approx.1.5 minute.



Insert the SD card with the program into the upper SD card slot (1).



After taking out the SD card, the radar starts to work normally.