




8.5 ADJUSTMENTS

This section describes the electrical adjustments of the equipment as the adjustment procedures to be carried out by service persons at the time of installation.

 **CAUTION**

-  **Do not carry out the adjustments of the equipment except authorized service persons. If wrong setting is carried out, this may cause unstable operation.**

-  **Do not carry out the adjustments during navigation. Otherwise, the radar performance may be affected, resulting in an accident or trouble.**

Tuning, bearing and range adjustments can be made from the operation panel. Start the adjustment mode in the following procedures.

How to open the Adjust Menu

Procedures

- 1 Continue to press [RADAR MENU] key.

The Code Input Menu will appear.

- 2 Press [0] key.

- 3 Move the cursor onto the "ENT" button in the Code Input menu, and press [ENT] key.

The Adjust Menu will appear.

Code Input
Press "0" and "ENT"
to Adjust Menu

1	2	3
4	5	6
7	8	9
+	0	-
CLR	ENT	

4 Press [1] key.

The Equipment Setup Menu will appear.

Adjust Menu
1. Equipment Setup
2. Maintenance Menu
9. SP/ATA INIT Setup
0. EXIT

Equipment Setup	
1. Bearing Adjustment	0.0°
2. Range Adjustment	0
3. Tune Adjustment	0
4. TRX Setting	
5. COM Port Setting	
6. NAV Setting	
7. Sector Blank	
8. Ship's Type	MERCHANT
9. Language	ENGLISH
0. EXIT	

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Tuning Adjustment

Procedures

- 1 **Open the Equipment Setup Menu.**
- 2 **Press [3] key.**
The Code Input Menu will appear.
- 3 **Using numeric pad, enter the value and then press “ENT” button, and press “EXIT” button to determine the value.**
The multi-function control can also be used to enter the value.
- 4 **Repeat Step 3, and adjust the bar-graph of the tuning indicator on the upper left of the display so that it becomes the longest.**

Exit

- 1 **Press [RADAR MENU] key.**
The Main Menu will reappear.

Equipment Setup	
1. Bearing Adjustment	<input type="text" value="0.0°"/>
2. Range Adjustment	<input type="text" value="0"/>
3. Tune Adjustment	<input type="text" value="0"/>
4. TRX Setting	<input type="text"/>
5. COM Port Setting	<input type="text"/>
6. NAV Setting	<input type="text"/>
7. Sector Blank	<input type="text"/>
8. Ship's Type	<input type="text" value="MERCHANT"/>
9. Language	<input type="text" value="ENGLISH"/>
0. EXIT	<input type="text"/>

Bearing Adjustment

Adjust the bearing so that bearing of the target measured with the ship's compass matches that of the target echo on the radar display.

Procedures

- 1 Press **AZI MODE** to select the relative bearing presentation [H UP] mode. Set **Image Processing to OFF**.

[AZI MODE] → Button ⑤ on the Radar Menu
Image Processing → Button ⑫ in the Radar Menu

- 2 Measure the bearing of an adequate target (for example, a ship at anchor, a breakwater or a buoy) relative to own ship's heading.

- 3 Open the **Equipment Setup Menu**.

- 4 Press **[1]** key.

The Code Input Menu will appear.

- 5 Using numeric pad, enter the value and then press **"ENT"** button, and press **"EXIT"** button to determine the value.

The multi-function control can also be used to enter the value.

- 6 Repeat Step 5 above, and adjust to display the target measured in Step 2 to the measured bearing.

Equipment Setup	
1. Bearing Adjustment	<input type="text" value="0.0°"/>
2. Range Adjustment	<input type="text" value="0"/>
3. Tune Adjustment	<input type="text" value="0"/>
4. TRX Setting	<input type="text"/>
5. COM Port Setting	<input type="text"/>
6. NAV Setting	<input type="text"/>
7. Sector Blank	<input type="text"/>
8. Ship's Type	<input type="text" value="MERCHANT"/>
9. Language	<input type="text" value="ENGLISH"/>
0. EXIT	<input type="text"/>

Exit

- 1 Press **[RADAR MENU]** key.

The Main Menu will reappear.

Range Adjustment

Adjust the range so that the range of the target on the radar video is indicated correctly.

Procedures

1 Search the radar display for a target of which range is already known.

2 Open the Equipment Setup Menu.

3 Press [2] key.

The Code Input Menu will appear.

4 Using numeric pad, enter the value and then press “ENT” button, and press “EXIT” button to determine the value.

The multi-function control can also be used to enter the value.

5 Repeat step 4, and adjust until the target range measured in step 1 and the range on the radar display become identical.

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Equipment Setup	
1. Bearing Adjustment	<input type="text" value="0.0°"/>
2. Range Adjustment	<input type="text" value="0"/>
3. Tune Adjustment	<input type="text" value="0"/>
4. TRX Setting	
5. COM Port Setting	
6. NAV Setting	
7. Sector Blank	
8. Ship's Type	<input type="text" value="MERCHANT"/>
9. Language	<input type="text" value="ENGLISH"/>
0. EXIT	

Antenna Height Adjustment

Set the antenna height above the sea level, but change this setting carelessly.

Procedures

1 Measure the height from the sea level to the antenna in advance.

2 Open the Equipment Setup Menu.

3 Press [4] key.

The TRX Setting Menu will appear.

4 Press [1] key.

The Antenna Height Set Value window will appear.

5 Select the antenna height measured in step 1 from the pull-down menu by pressing the numeric key [1] to [4].

The antenna height will be determined.

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

TRX Setting	
1. Antenna Height	<input type="text" value="5-10m"/>
2. Tune Peak Adjust	<input type="text" value="0"/>
3. Tune Indicator Adjust	<input type="text" value="0"/>
4. PM Adjustment	<input type="text" value="0"/>
5. MBS Level	<input type="text" value="0"/>
6. MBS Area	<input type="text" value="0"/>
7. Output Pulse	<input type="text" value="2048"/>
8. Antenna Location	<input type="text" value="0m"/> <input type="text" value="0m"/>
<input type="text" value="0. EXIT"/>	

Bearing Pulse Output Adjustment (Output Pulse)

Set the output value of bearing pulse. This radar can set the output value to 2048 pulses and 4096 pulses. This setting is allowed only when a 26 kw antenna is used.

Procedures

- 1 **Open the Equipment Setup Menu.**
- 2 **Press [4] key.**
The TRX Setting Menu will appear.
- 3 **Press [7] key.**
- 4 **Select a set value to be used.**

Exit

- 1 **Press [RADAR MENU] key.**
The Main Menu will reappear.

TRX Setting	
1. Antenna Height	<input type="text" value="5-10m"/>
2. Tune Peak Adjust	<input type="text" value="0"/>
3. Tune Indicator Adjust	<input type="text" value="0"/>
4. PM Adjustment	<input type="text" value="0"/>
5. MBS Level	<input type="text" value="0"/>
6. MBS Area	<input type="text" value="0"/>
7. Output Pulse	<input type="text" value="2048"/>
8. Antenna Location	<input type="text" value="0m"/> <input type="text" value="0m"/>
<input type="text" value="0. EXIT"/>	

Scanner Antenna Location Adjustment (Antenna Location)

Set the position at which the scanner is installed.

Procedures

1 Open the Equipment Setup Menu.

3 Press [4] key.

The TRX Setting Menu will appear.

4 Press [8] key.

The Antenna Location Menu will appear.

TRX Setting	
1. Antenna Height	<input type="text" value="5-10m"/>
2. Tune Peak Adjust	<input type="text" value="0"/>
3. Tune Indicator Adjust	<input type="text" value="0"/>
4. PM Adjustment	<input type="text" value="0"/>
5. MBS Level	<input type="text" value="0"/>
6. MBS Area	<input type="text" value="0"/>
7. Output Pulse	<input type="text" value="2048"/>
8. Antenna Location	<input type="text" value="0m"/> <input type="text" value="0m"/>
<input type="text" value="0. EXIT"/>	

Antenna Location

1. SET

Set Location Roughly

0. EXIT

a:	35m
b:	-5m
(-500 to 500 [m])	

1	2	3
4	5	6
7	8	9
-	0	+
CLR	ENT	

5 Enter two values, a and b.

With $a > 0$, the antenna is installed in the ship's heading direction.

With $a < 0$, the antenna is installed in the ship's stem direction.

With $b > 0$, the antenna is installed in the ship's starboard side direction.

With $b < 0$, the antenna is to be installed in the ship's port side direction.

Pressing **T**, **LT**, **L**, **LB**, **B**, **RB**, **R**, or **RT** in the own ship gives \pm sign, appropriate to the place, to values a and b.

Press CLR for cancellation. Press ENT to determine the value.

6 Press [0] key.

Entry will end.

Exit**1 Press [RADAR MENU] key.**

The Main Menu will reappear.

COM Port Setting

External sensor signals are to be entered to this radar via a COM port. This radar has five COM ports. Input of signals from sensors or output of signals to sensors needs to adjust the COM port in accordance with the sensors.

[I] Baud Rate Setting

Set the baud rate of the signal to be entered into the COM port.

Procedures

1 Open the Equipment Setup Menu.

2 Press [5] key.

The COM Port Setting Menu will appear.

3 Press [1] key.

The Baud Rate Setting Menu will appear.

4 Select the port number you want to set, pressing the numeric keys [1] to [5].

The Baud Rate Selection menu will appear.

5 In the selection menu, select the baud rate you want to set, pressing the numeric key.

Selection value

- | | |
|--------------------|--------------------------------|
| 1. COM1 (GPS): | 1200/4800/*38400 bps |
| 2. COM2 (PC): | 1200/4800/
38400/115200 bps |
| 3. COM3 (NAV1): | 1200/4800/38400 bps |
| 4. COM4 (NAV2): | 1200/4800/*38400 bps |
| 5. COM5 (COMPASS): | 4800/38400 bps |

* If COM1/COM4 is set to 38400 bps, signals can only be transmitted. The baud rate for reception can be set to up to 4800 bps.

COM5 can be used for receive port only. It is dedicated for COMPASS signal. This means that the port is unavailable for other signals.

The GPS, PC, NAV1, NAV2, COMPASS in the parentheses are the standard ports connecting to the external sensors.

Baud Rate	
1. COM1 (GPS)	4800bps
2. COM2 (PC)	1. 1200bps
	2. 4800bps
	3. 38400bps
3. COM3 (NAV1)	384000bp
4. COM4 (NAV2)	4800bps
5. COM5 (COMPASS)	4800bps
0. EXIT	

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

[II] Reception Sentence Setting (RX Sentence)

Set signal sentences to be received from sensors.

Procedures

1 Open the Equipment Setup Menu.

2 Press [5] key.

The COM Port Setting Menu will appear.

3 Press [2] key.

The RX Sentence Menu will appear.

4 Select the signal you want to set, pressing the numeric keys [1] to [3].

The Setting Menu for each signal will appear.

Settable signal

- 1. GPS (LL/COG/SOG)
- 2. GPS (WPT/Time)
- 3. Depth

5 Select whether or not you want to use sentence for the signal.

Types of sentences to be used

GPS (LL/COG/SOG): GGA/RMC/RMA/GNS/
GLL/VTG

GPS (WPT/Time): GGA/RMC/RMB/
BWC/BWR/ZDA

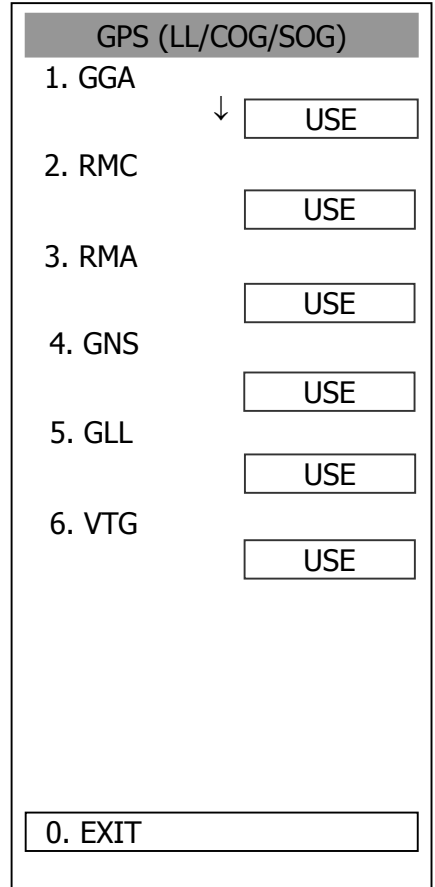
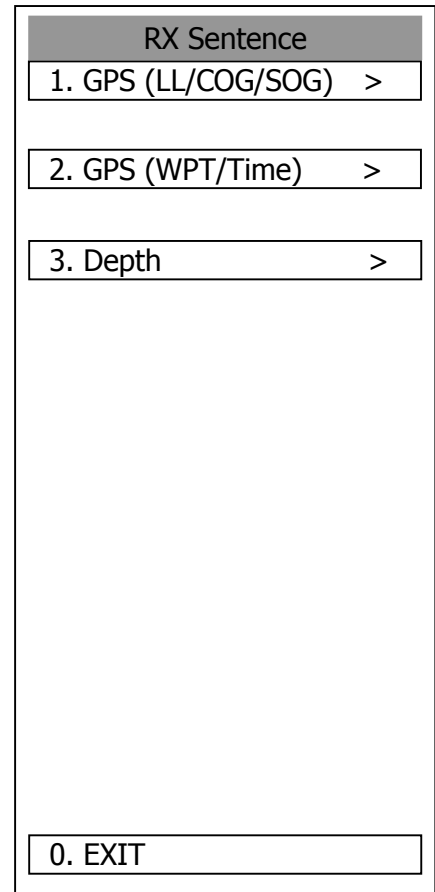
Depth: DPT/DBK/DBT/DBS

After having selected a signal, choose the number of the sentence for which you want to set whether or not it is used, pressing the numeric key.

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.



[III] Transmission Port Setting (TX Port)

Set the number of the port via which signals are transmitted to sensors.

Procedures

1 Open the Equipment Setup Menu.

2 Press [5] key.

The COM Port Setting Menu will appear.

3 Press [4] key.

The TX Port Menu will appear.

4 Select the signal you want to set, pressing the numeric keys [1] to [8].

The Output Port Setting Menu for each signal will appear.

Settable signals

- 1. TTM (ATA Target)
- 2. TLL (ATA Target)
- 3. OSD
- 4. RSD
- 5. ALR
- 6. AIS
- 7. TTM (AIS Target)
- 8. TLL (AIS Target)

5 Select which port you want to use for output.

Types of ports to be used

- 1. OFF
- 2. COM1 (GPS)
- 3. COM2 (PC)
- 4. COM3 (NAV1)
- 5. COM4 (NAV2)

Select the number of the port to be used, pressing the numeric key.

TX Port	
1. TTM (ATA Target)	OFF
2. TLL (ATA Target)	1. OFF
	2. COM1 (GPS)
3. OSD	3. COM2 (PC)
	4. COM3 (NAV1)
	5. COM4 (NAV2)
4. RSD	OFF
5. ALR	OFF
6. AIS	AUTO
7. TTM (AIS Target)	OFF
8. TLL (AIS Target)	OFF
0. EXIT	

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

* Note that, if you set COM1 and COM4 for transmission, they cannot be used as reception ports.

[IV] Reception Port Setting (RX Port)

Set the number of the port via which signals are received from sensors.

Procedures**1 Open the Equipment Setup Menu.****2 Press [5] key.**

The COM Port Setting Menu will appear.

3 Press [3] key.

The RX Port Menu will appear.

4 Select the signal you want to set, pressing the numeric keys [1] to [6].

The Reception Port Setting Menu for each signal will appear.

Settable signals

1. GPS
2. DLOG
3. Depth
4. Temperature
5. Wind
6. Current

5 Select which port you want to use for output.**Types of ports to be used**

1. AUTO
2. COM1 (GPS)
3. COM2 (PC)
4. COM3 (NAV1)
5. COM4 (NAV2)

RX Port	
1. GPS	AUTO
2. DLOG	1. AUTO
	2. COM1 (GPS)
3. Depth	3. COM2 (PC)
	4. COM3 (NAV1)
	5. COM4 (NAV2)
4. Temperature	AUTO
5. Wind	AUTO
6. Current	AUTO
0. EXIT	

* For AUTO, the initial value will be selected.

Select the number of the port to be used, pressing the numeric key.

Exit**1 Press [RADAR MENU] key.**

The Main Menu will reappear.

Navigator Setting (NAV Setting)

JRC's GPS adopts connector connections on the backside of the processing unit. However, a GPS produced by other manufacturers uses terminal strip inputs in the processing unit. To do so, input area settings are needed. In addition, GPS antenna installation position can be set.

[1] Navigator Setting (Sel NAL Equipment)

Set whether the navigator to be connected is to be installed inside (JRC's GPS) or outside (other manufacturer's GPS).

Procedures

1 Open the Equipment Setup Menu.

2 Press [6] key.

The NAV Setting Menu will appear.

3 Press [1] key.

Switching between inside and outside is done each time the key is pressed.

INT GPS: JRC's GPS (connection on the backside of the processing unit)

EXT: Other manufacturer's GPS (Terminal strip connection inside the processing unit)

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

NAV Setting	
1. Sel NAV Equipment	
INT GPS	
2. GPS ANT. Location	
0m	0m
0. EXIT	

[II] GPS Antenna Location Setting (GPS ANT. Location)

Set the GPS antenna installation position.

Procedures

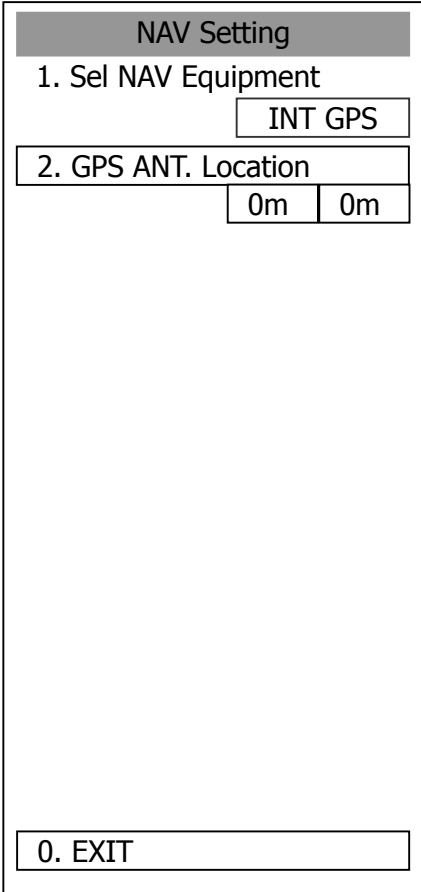
1 Open the Equipment Setup Menu.

2 Press [6] key.

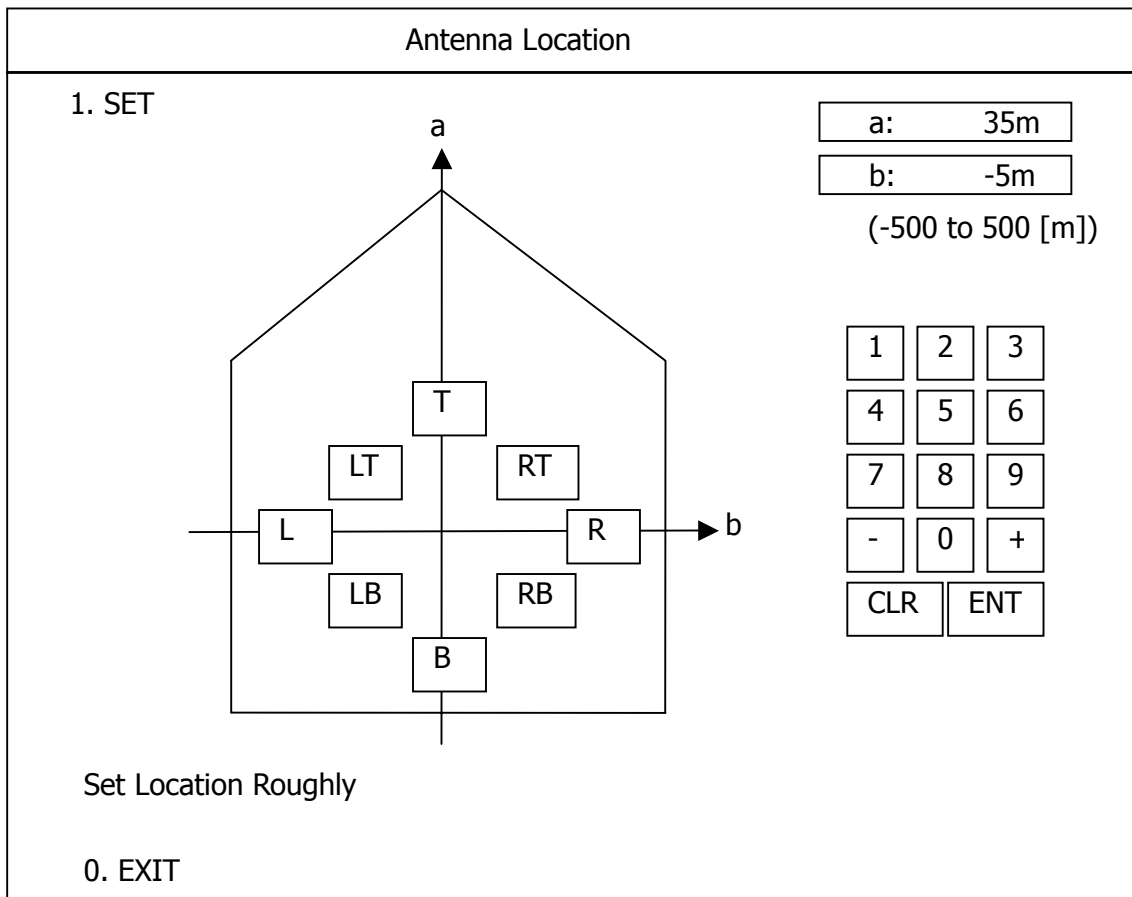
The NAV Setting Menu will appear.

3 Press [2] key.

The GPS Antenna Location Menu will appear.



NAV Setting	
1. Sel NAV Equipment	INT GPS
2. GPS ANT. Location	0m 0m
0. EXIT	



5 Enter two values, a and b.

With $a > 0$, GPS antenna is installed in the ship's heading direction.
 With $a < 0$, GPS antenna is installed in the ship's stem direction.
 With $b > 0$, GPS antenna is installed in the ship's starboard side direction.
 With $b < 0$, GPS antenna is to be installed in the ship's port side direction.

Pressing **T**, **LT**, **L**, **LB**, **B**, **RB**, **R**, or **RT** in the own ship gives \pm sign, appropriate to the place, to values a and b.

Press CLR for cancellation. Press ENT to determine the value.

6 Press [0] key.

Entry will end.

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Sector Blank Function (Sector Blank)

Set a fan leaf range, preventing displaying the radar echo only within the area. Three types of fan leaf can be created.

[I] Turning ON/OFF the Sector function (Sector 1, 2 and 3)

Procedures

1 Open the Equipment Setup Menu.

2 Press [7] key.

The Sector Blank Menu will appear.

3 Select the number you want executed sector blank, Pressing the numeric keys [1] to [3].

Switching between ON and OFF is done each time the key is pressed.

ON: Execution of sector blank

OFF: Cancel

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Note: This function can be performed only when the scanner is connected to NKE-2252 and 1075/A.

Sector Blank	
1. Sector 1	<input type="button" value="ON"/>
2. Sector2	<input type="button" value="ON"/>
3. Sector3	<input type="button" value="ON"/>
4. Make Sector 1	
5. Make Sector 2	
6. Make Sector 3	
7. ENT	
0. EXIT	

[II] Making Sector Function (Make Sector 1, 2, 3)

Procedures

1 Open the Equipment Setup Menu.

2 Press [7] key.

The Sector Blank Menu will appear.

3 Select the number you want to make sector blank, pressing the numeric keys [4] to [6].

The sector blank for the numeric key pressed will be made.

4 Set the start point of the sector blank by operating the [EBL] dial, and then press ENT.

The start angle of the sector blank will be set.

5 Set the end point of the sector blank by operating the [EBL] dial, and then press ENT.

The end angle of the sector blank will be set.

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Sector Blank	
1. Sector 1	<input type="checkbox"/> ON
2. Sector2	<input type="checkbox"/> ON
3. Sector3	<input type="checkbox"/> ON
4. Make Sector 1	
5. Make Sector 2	
6. Make Sector 3	
7. ENT	
0. EXIT	

Language Setting (Language)

You can switch between Japanese and English.

Procedures

1 Open the Equipment Setup Menu.

2 Press [9].

The Language Selection window will appear.

3 Select the language you want to display, pressing the numeric keys [1] to [3].

1. English
2. Japanese
3. Other

“Other” in 3. is a language corresponding to characters created in overseas agents.

To confirm whether or not your language is supported, contact overseas agents or our sales department.

To make the set language effective, turn off the power supply and then restart.

Exit


1 Press [RADAR MENU] key.


The Main Menu will reappear.


Baud Rate							
1. Bearing Adjustment	0.0°						
2. Range Adjustment	503						
3. Tune Adjustment	32						
4. TRX Setting	>						
5. COM Port Setting	>						
6. Nav Setting	>						
7. Sector Blank	>						
9. Language Selection	<table border="1"> <tbody> <tr> <td>1.</td> <td>ENGLISH</td> </tr> <tr> <td>2.</td> <td>JAPANESE</td> </tr> <tr> <td>3.</td> <td>OTHER</td> </tr> </tbody> </table>	1.	ENGLISH	2.	JAPANESE	3.	OTHER
1.	ENGLISH						
2.	JAPANESE						
3.	OTHER						
	ENGLISH						
0. EXIT							

Maintenance Menu (Maintenance Menu)

This item is provided for equipment maintenance, including settings of antenna safety switch, master reset, etc.

 **CAUTION**

-  **Only our service engineers are to make the adjustment. Neglecting this caution may cause accidents and failures.**

-  **Do not make the adjustments during navigation. Otherwise, adjustments may affect the radar functions, causing accidents and failures.**

[1] Scanner Safety Switch Setting (Safety Switch)

Procedures

1 Open the Adjust Menu.

2 Press [2] key.

The Maintenance Menu will appear.

3 Press [1] key.

Setting items for the scanner safety switch will appear.

4 Select the item you want to set, pressing the numeric key [1] to [4].

1. TX OFF: Stops transmission. (The screen remains in the transmission status.)
2. STBY: Stops transmission. (The screen switches to the standby status)
3. TX-ON: Continues transmission without changes. (However, errors in bearing signals etc. are to occur due to safety switch-off.)
4. IGNORE ERROR: Continues transmission without changes.(Errors in bearing signals etc. due to safety switch-off are also ignored.)

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Maintenance Menu

1. Safety Switch

STBY

2. Partial Master Reset

3. All Master Reset

4. Internal To Card 2

5. Card2 To Internal

0. EXIT

[II] Partial Master Reset**Procedures****1 Open the Maintenance Menu.****2 Press [2] key.**

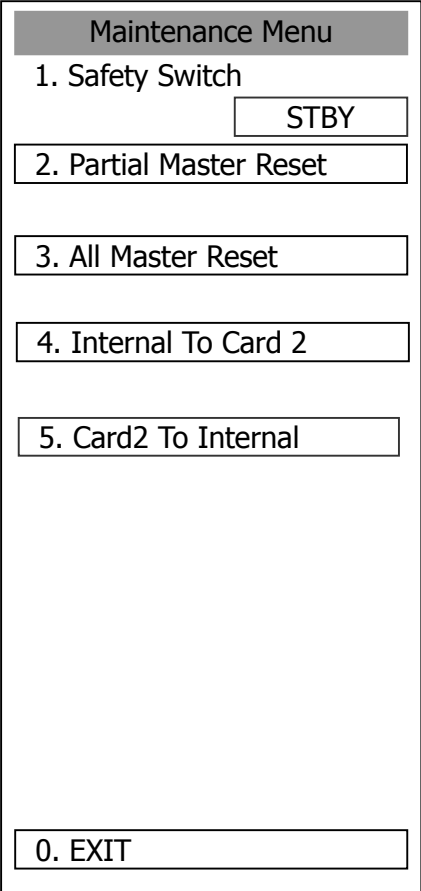
The Partial Master Reset Execution Check window will appear.

- 1 YES: Execution of Partial Master Reset
- 2 NO: Cancellation

Partial Master Reset resets items except for those set in the initialization menu.

Exit**1 Press [RADAR MENU] key.**

The Main Menu will reappear.



Maintenance Menu

- 1. Safety Switch
- 2. Partial Master Reset
- 3. All Master Reset
- 4. Internal To Card 2
- 5. Card2 To Internal

0. EXIT

[III] All Master Reset (All Master Reset)

- Procedures**
- 1 Open the Maintenance Menu.**
 - 2 Press [3] key.**

The All Master Reset Execution Check window will appear.

- 1 YES: Execution of All Master Reset
- 2 NO: Cancellation

All Master Reset resets items except for those set in the initialization menu.

- Exit**
- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

Maintenance Menu

1. Safety Switch

STBY

2. Partial Master Reset

3. All Master Reset

4. Internal To Card 2

5. Card2 To Internal

0. EXIT

[IV] Copy Internal Settings to Card 2 (Internal To Card 2)

Execution of this item requires a memory flash card (option).

Procedures

- 1 Insert a flash memory card into the CARD slot 2.**
- 2 Open the Maintenance Menu.**
- 3 Press [4] key.**

The execution check widow will open to check whether or not you want to copy the internal settings to Card 2.

- 1 YES: Execution of copy
- 2 NO: Cancellation

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

Maintenance Menu

1. Safety Switch STBY

2. Partial Master Reset

3. All Master Reset

4. Internal To Card 2

5. Card2 To Internal

0. EXIT

[V] Read internal settings from Card 2.

Execution of this item requires a memory flash card (option).

Procedures

1 Insert the memory flash card, in which internal settings have been saved, into Card slot 2.

2 Open the Maintenance Menu.

3 Press [5] key.

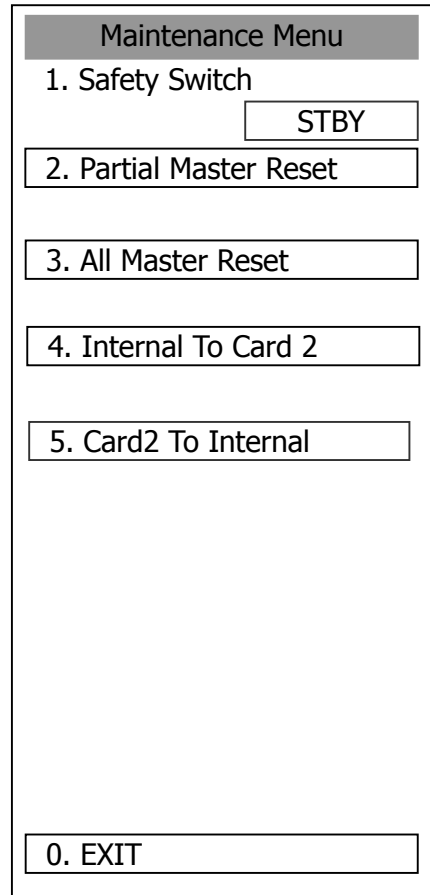
The execution check widow will open to check whether or not you want to read the internal settings from Card 2.

- 1 YES: Read
- 2 NO: Cancellation

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.



Noise Level Setting (Noise Level)

[1] Setting the noise level for signal processing (Main)

Procedures

- 1 **When the Adjust Menu appears, press [9] key.**

The SP/ATA INIT Setup Menu will appear.

- 2 **Press [1] key.**

The Noise Level Menu will appear.

- 3 **Press [1] key.**

The Code Input Menu will open to change the noise level value.

- 4 **Change the value to display echo correctly.**

In addition to the entry on the Code Input menu, the Multi-functional Dial Control is available to change the value.

Exit

- 1 **Press [RADAR MENU] key.**

The Main Menu will reappear.

Noise Level	
1. Main	140
3. Setting Mode	OFF
0. EXIT	

[II] Noise Level Adjustment Mode (Setting Mode)

Procedures

- 1 When the Adjust Menu appears, press [9] key.**

The SP/ATA INIT Setup Menu will appear.

- 2 Press [1] key.**

Options for Setting Mode will appear.

- 3 Press [3] key.**

Switching between Setting Mode ON and OFF is done each time the key is pressed.

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

Noise Level	
1. Main	<input type="text" value="140"/>
2. ATA	<input type="text" value="140"/>
3. Setting Mode	<input type="text" value="OFF"/>
<input type="text" value="0. EXIT"/>	

Vector Constant

Attention

- **Do not change the set value carelessly.**
The vector constant shall be set to 5 normally. If the vector constant value is higher, a target's vector will be better followed up when the target and own ship change their course or speed, but the vector accuracy will be lower on the contrary.

Procedures

- 1 Press [9] key while the Adjust Menu is open.

The SP/ATA INIT Setup Menu will appear.

- 2 Press [2] key.

The ATA Menu will appear.

- 3 Press [1] key.

The window for setting vector constants will appear.

- 4 Select the value you want to set, pressing the numeric keys [1] to [8].



Exit

- 1 Press [RADAR MENU] key.

The Main Menu will reappear.

ATA	
1. Vector Const	<input type="text" value="5"/>
2. Video TD Level	<input type="text" value="15"/>
3. Video High Level	<input type="text" value="8"/>
4. Video Low Level	<input type="text" value="1"/>
5. Gate Size	<input type="text" value="NARROW"/>
6. Limit Ring	<input type="text" value="OFF"/>
<input type="text" value="0. EXIT"/>	

Video TD Level

 CAUTION	
	Do not change the set quantization level carelessly. If the level deviates from the proper value, the ARPA acquisition and tracking functions will deteriorate. Otherwise, this may cause accidents.

The quantization level determines the minimum signal level of the input video to the ARPA target detection circuit. In this test, the value of the quantization level can be set in a range of 1 to 63. If the value is set to a lower level, weak target echoes will be inputted to the ARPA target detection circuit, but much radar noise will also be inputted to the circuit together, and target acquisition and tracking may be disabled. Therefore, it is important to set a value that is 4 or 5 higher than the detected noise level.

Procedures

- 1 Press [9] key while the Adjust Menu is open.**

The SP/ATA INIT Setup Menu will appear.

- 2 Press [2] key.**

The ATA Menu will appear.

- 3 Press [2] key.**

The Code Input Menu will appear.

- 4 Enter the Video TD Level value.**

The multi-function control can also be used to enter the value.

After having entered the value, press ENT.

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

ATA	
1. Vector Const	5
2. Video TD Level	15
3. Video High Level	8
4. Video Low Level	1
5. Gate Size	NARROW
6. Limit Ring	OFF
0. EXIT	

Main Bang Suppression Level Adjustment (MBS Level)

Main Bang Suppression is adjusted to suppress main bang, a reflection signal from 3D circuit including wave guide tube, that generally appears as a circular image focusing on the center of the radar display. Optimum adjustment allows main bang image to remain lightly on the display.

 **CAUTION**

 **Do not change this adjusted level carelessly.**
Incorrect adjustment may erase targets in point-blank range and cause collision, resulting in death or serious injury.

This adjustment is made for settings in the processing circuit of the display unit.

Procedures

1 Perform the following operation before setting.

- Set the range to 0.125 nm.
- Set the radar video enhance function.
- Set the correlation processing function to OFF.
- Rotate the [AUTO-SEA] control to achieve the strength with which main bang can be judged.
- Rotate [AUTO-RAIN] control to the minimum position (counterclockwise fully).
- Rotate [GAIN/PL] control to the maximum position (clockwise fully).

2 Display the SP/ATA INIT Setup Menu.

3 Press [3] key.

The MBS Menu will appear.

4 Press [1] key.

The Code Input Menu will appear.

5 Enter the Main Bung Suppression Level value.

Adjust the value to erase the main bang.

MBS

1. MBS Level

2. MBS Area

0. EXIT



Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Main Bang Suppression Area Adjustment (MBS Area)

Adjust the main bang suppression area.

 CAUTION
 Do not change this adjusted level carelessly. Incorrect adjustment may erase targets in point-blank range and cause collision, resulting in death or serious injury.

Procedures

1 Perform the following operation before setting.

- Set the range to 0.125 nm.
- Set the radar video enhance function.
- Set the correlation processing function to OFF.
- Rotate the [AUTO-SEA] control to achieve the strength with which main bang can be judged.
- Rotate [AUTO-RAIN] control to the minimum position (counterclockwise fully).
- Rotate [GAIN/PL] control to the maximum position (clockwise fully).

2 Display the SP/ATA INIT Setup Menu.

3 Press [3] key.

The MBS Menu will appear.

4 Press [1] key.

The Code Input Menu will appear.

5 Enter the Main Bang Suppression Level value.

Adjust the value to erase the main bang.

MBS	
1. MBS Level	<input type="text" value="0"/>
2. MBS Area	<input type="text" value="0"/>
<input type="text" value="0. EXIT"/>	

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

Adjustment of NSK Unit to GYRO Compass and Log

The NSK Unit of the radar equipment is designed to be compatible with almost all types of gyro compass by switch operation (For the step motor type, 24 VDC to 100 VDC, and for the synchro-motor type, the primary excitation voltage is 50 VAC to 115 VAC).

Before power-on operation, the switches S1, S2, S5 and jumper JP1 on the NSK Unit (PC4201) shall be set to the type of gyro compass in use in accordance with the procedures as described below. The gyro select switch on the NSK Unit is set to the gyration ratio of 360X and to be compatible with the synchro type before delivery from factory.

Check the type of the gyro compass used in own ship and make settings in the procedures below.

(1) Set the switches of the NSK Unit (PC4201) before turning on the radar equipment.

- S1: Set it to [OFF].
- S2: There are two types of gyro compasses: a compass of one type outputs a step signal, and the other outputs a synchro signal. Make sure of the type of gyro compass used with the own ship before setting S2.

[SYNC] Synchro signal
 [STEP]..... Step signal

- S5: Set S5 depending on the type of the gyro compass currently in use, according to the S5 setting table.

S5-1:Set this switch assembly according to the particular type of gyro.

[OFF]..... Synchro signal
 [ON] Step signal

S5-2, -3..... Gyration ratio

	360X	180X	90X	36X
S5-2	OFF	OFF	ON	ON
S5-3	OFF	ON	OFF	ON

S5-4..... Gyration direction

[OFF]..... Normal (clockwise)
 [ON] Reverse (counterclockwise)

S5-5..... Log type-1

[OFF]..... Pulse signal
 [ON] Synchro signal

S5-6..... Not used



S5-7, -8..... Log ratio

	Pulse/NM (pulse signal)			
	800	400	200	100
	Gyration/NM (synchro signal)			
	360X	180X	90X	36X
S5-7	OFF	OFF	ON	ON
S5-8	OFF	ON	OFF	ON

- S6:Log test. Set it to [NORMAL].
- S7: Normal or BSH(IMO) specifications selection. Set it to [NORMAL].
- Set JP1 according to the particular gyro.

[SYNC]..... Synchro signal
 [STEP] Step signal

- (2) Connect the gyro signal and the log signal cables to the NSK Circuit. (PC4201)
- (3) Set S1 to [ON].

* After power-on operation, the switch S5-4 shall be set to [ON] if the radar video and the indicated value of COURSE (own ship's true bearing) is reversed.

Table 8-17 Gyro and Log Select Switches (S5 Dip Switch)

S5 Setting Table

		1	2	3	4	5	6	7	8
GYRO SIG.	SYNC	0							
	STEP	1							
	360X		0	0					
	180X		0	1					
	90X		1	0					
	36X		1	1					
	DIRECTION	Normal (NOR)				0			
	Reverse (REV)				1				
LOG SIG.	TYPE	PULSE				0			
		SYNCHRO				1			
							0		
	PULSE/NM	800P/360X						0	0
		400P/180X						0	1
		200P/90X						1	0
	100P/30X						1	1	

8.6 SETTING

True Bearing Setting (Set GYRO)

Adjust the bearing that the bearing angle of the radar is the same as that of the gyro.

Procedures

- 1 Press [RADAR MENU] key twice.

The Main Menu will appear.

- 2 Press [7] key.

The NAV Equipment Setting Menu will appear.

- 3 Press [1] key.

The Code Input Menu will appear.

- 4 Adjust true bearing value.

Adjust the bearing that the bearing angle of the radar is the same as that of the gyro.

The multi-function control can also be used to enter the value.

After having entered the value, press ENT.

Exit

- 1 Press [RADAR MENU] key.

The menu will be closed.

NAV Equipment Setting	
1. Set GYRO	<input type="text" value="0.0°"/>
2. Heading Equipment	<input type="text" value="GYRO"/>
3. Speed Equipment	<input type="text" value="MANUAL"/>
4. Manual Speed	<input type="text" value="0.0kts"/>
5. MAG Compass Setting	
6. Set/Drift Setting	
7. GPS Setting	
0. EXIT	

Ship Speed Equipment Setting (Speed Equipment)

Procedures

- 1 Press [RADAR MENU] key twice.

The RADAR Menu will appear.

- 2 Press [7] key.

The NAV Equipment Setting Menu will appear.

- 3 Press [3] key.

- 4 Select a ship speed sensor from the pull-down menu.

Types of selectable speed sensors:

- 1: Manual
- 2: Log
- 3: 2-axis log (NMEA signal: Speed over water)
- 4: 2-axis log (NMEA signal: Speed over ground)

Exit

- 1 Press [RADAR MENU] key.

The menu will be closed.

NAV Equipment Setting	
1. Set GYRO	<input type="text" value="0.0°"/>
2. Heading Equipment	<input type="text" value="GYRO"/>
3. Speed Equipment	<input type="text" value="MANUAL"/>
4. Manual Speed	<input type="text" value="0.0kts"/>
<input type="text" value="5. MAG Compass Setting"/>	
<input type="text" value="6. Set/Drift Setting"/>	
<input type="text" value="7. GPS Setting"/>	
<input type="text" value="0. EXIT"/>	

Attention

- The manually entered speed is effective only when “MANUAL” is set.
- 2-axis log cannot be effective when the sentence VBW of NMEA0183 is not entered.

Manual Speed Setting (Manual Speed)

Procedures

1 Press [RADAR MENU] key twice.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [4] key.

The Code Input menu will appear.

4 Pressing a numeric key, enter the value and select "ENT."

The multi-function control is also available for the entry.

Note: The manually entered speed is effective only when "MANUAL" is set.

NAV Equipment Setting	
1. Set GYRO	<input type="text" value="0.0°"/>
2. Heading Equipment	<input type="text" value="GYRO"/>
3. Speed Equipment	<input type="text" value="MANUAL"/>
4. Manual Speed	<input type="text" value="0.0kts"/>
5. MAG Compass Setting	
6. Set/Drift Setting	
7. GPS Setting	
0. EXIT	

MAG Compass Setting

Set the MAG compass.

Procedures

- 1 Press [RADAR MENU] key twice.

The Radar Menu will appear.

- 2 Press [7] key.

NAV Equipment Setting Menu will appear.

- 3 Press [5] key.

MAG Compass Setting Menu will appear.

- 4 Press [1] key.

This item is set as to whether or not the heading bearing is to be corrected. Switching between ON and OFF is done each time you press [1] key.

- 5 Press [2] key.

The Code Input Menu will appear.

- 6 Pressing a numeric key, enter the value. Select "ENT" and then determine the value.

The correction direction and angle will be set. On the screen, press "+" to make correction in the eastern direction, and press "-" to make correction in the western direction. Also enter a correction angle, pressing the numeric key. The multi-function control is also available for the entry. To do so, enter the correction direction, press the multi-function control, enter the correction angle, and then set ENT in order.

MAG Compass Setting

1. Heading Correction
OFF
2. Correct Value
E0.0°

0. EXIT

Exit

- 1 Press [RADAR MENU] key.

The menu will be closed.

Current Correction (SET/DRIFT) Setting

The current set and drift will be set.

Attention

- **The manually entered speed is effective only when 1. MANUAL or 2. 1AXIS is set in 2. SELECT SPEED of SETTING1 Menu.**

Procedures

- 1 Press [RADAR MENU] key twice.**

The RADAR Menu will appear.

- 2 Press [7] key.**

The NAV Equipment Setting Menu will appear.

- 3 Press [6] key.**

The Set/Drift Setting Menu will appear.

- 4 Press [1] key to enable Correction.**

The setting of Correction is switched back and forth between ON and OFF each time [1] key is pressed.

- 5 Press [2] key.**

The Code Input Menu will appear.

- 6 Enter the direction of tendency.**

The direction of tendency will be set. The multi-function control is also available for the entry.
After having entered the direction, press ENT.

Set/Drift Setting	
1. Correction	<input type="text" value="OFF"/>
2. Set	<input type="text" value="0.0°"/>
3. Drift	<input type="text" value="0.0kts"/>
<input type="text" value="0. EXIT"/>	

7 Press [3] key.

The Code Input Menu will appear.

8 Enter the speed of tendency.

The speed of tendency will be set. The multi-function control is also available for the entry.
After having enter the value, press ENT.

Exit

1 Press [RADAR MENU] key.

The menu will be closed.

Setting in GPS Receiver (GPS Process Setting)

Set an initial value in the GPS receiver (our GPS receiver).

[I] Own ship position setting

Procedures

- 1 Press [RADAR MENU] key twice.

The Radar Menu will appear.

- 2 Press [7] key.

NAV Equipment Setting Menu will appear.

- 3 Press [7] key.

GPS Setting Menu will appear.

- 4 Press [1] key.

GPS Process Setting Menu will appear.

- 5 Press [1] key.

The Code Input menu will appear.
Enter the latitude, press ENT, enter the longitude, and then press ENT in order.
The multi-function control is also available to enter the values.

- 6 After having entered the values, press [9] key, and transmit the setting contents to the GPS receiver.

Exit

- 1 Press [RADAR MENU] key.

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	00'00.000
E	000'00.000
2. Exclusion	
00 00 00 00 00 00	
3. Geodetic	
00	WGS-84
4. Antenna Height	
	0m
5. Fix Mode	
	2D
6. DOP Level	
	Up to 5
7. Position Average	
	LONG
8. Master Reset	
	OFF
9. Send Data	
0. EXIT	

[II] Setting of Banned Satellite (Excltion)

- Procedures**
- 1 Press [RADAR MENU] key twice.**
The Radar Menu will appear.
 - 2 Press [7] key.**
NAV Equipment Setting Menu will appear.
 - 3 Press [7] key.**
GPS Setting Menu will appear.
 - 4 Press [1] key.**
GPS Process Setting Menu will appear.
 - 5 Press [2] key.**
The Code Input menu will appear.
Enter the number of the banned satellite.
The multi-function control is also available to enter the values.
 - 6 After having entered the value, press [9] key, and transmit the setting contents to the GPS receiver.**

- Exit**
- 1 Press [RADAR MENU] key.**
The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	00'00.000
E	000'00.000
2. Exclution	
00 00 00 00 00 00	
3. Geodetic	
00	WGS-84
4. Antenna Height	
0m	
5. Fix Mode	
2D	
6. DOP Level	
Up to 5	
7. Position Average	
LONG	
8. Master Reset	
OFF	
9. Send Data	
0. EXIT	

[III] Geodetic System Setting (Geodetic)

Set the geodetic system in which the own ship is currently existent.

Procedures**1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [1] key.

GPS Process Setting Menu will appear.

5 Press [3] key.

The Code Input menu will appear.

Enter the geodetic system in accordance with the table on the following page.

The multi-function control is also available to enter the values.

6 After having entered the values, press [9] key to transmit the setting contents to the GPS receiver.**Exit****1 Press [RADAR MENU] key.**

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	<input type="text" value="00'00.000"/>
E	<input type="text" value="000'00.000"/>
2. Exclusion	
<input type="text" value="00 00 00 00 00 00"/>	
3. Geodetic	
<input type="text" value="00"/>	<input type="text" value="WGS-84"/>
4. Antenna Height	
<input type="text" value="0m"/>	
5. Fix Mode	<input type="text" value="2D"/>
6. DOP Level	
<input type="text" value="Up to 5"/>	
7. Position Average	
<input type="text" value="LONG"/>	
8. Master Reset	
<input type="text" value="OFF"/>	
9. Send Data	
<input type="text" value="0. EXIT"/>	

List of Geodetic Systems

No.	Name
0	WGS-84
1	WGS-72
2	Japan
3	North American 1927(U.S)
4	North American 1927(Canada & Alaska)
5	European 1950 (Europe)
6	Australian geodetic 1966 (Australia)
7	Ordance Survery of Great Britain (England)
8	NAD-83
9	- (No Use)
10	- (No Use)
11	ADINDAN (Etiopia & Sudan)
12	ARC 1950 (Botswana)
13	AUSTRALIAN GEODETIC 1984 (Australia)
14	BERMUDA 1957 (the Bermudas)
15	BOGOTA OBSERVATORY (Columbia)
16	CAMPO INCHAUSPE
17	CHATHAM 1971
18	CHUAASTRO (Paraguay)
19	CORREGO ALEGRE (Brazil)
20	DJAKARTA (VATAVIA) (Sumata)
21	EUROPEAN 1979 (Europe)
22	GEODETIC DATUM 1949 (New Zeland)
23	GUAM 1963 (Guam)
24	HAYFORD 1910 (Finland)
25	HJORSEY 1955 (Ice land)
26	INDIAN (India & Nepal)
27	IRELAND1965 (Ireland)
28	KERTAU 1948 (West Malaysia)
29	L.C.5 ASTRO (Cayman Black Island)
30	LIBERIA 1964 (Liberia)
31	LUZON (Philippines)
32	MERCHICH (Morocco)
33	MINNA (Cameroon)
34	NAHRWAN (Oman)
35	NAPARIMA, BWI (Trinidad & Tobago)
36	OLD EGYPTIAN (Egypt)
37	OLD HAWAIIAN (Hawaii)
38	PCO DE LAS NIEVES (Canary)
39	PROVISIONAL SOUTH AMERICAN 1956 (South America)
40	PROVISIONAL SOUTH CHILEAN 1963 (South Chile)
41	PUERTO RICO (Puerto Rico & Virgin Islands)
42	QORNOQ (South Greenland)
43	RT90 (Sweden)
44	SANTA BRAZ (San Miguel island & Saint Mary islands)
45	SOUTH AMERICAN 1969 (South America)
46	SOUTHWEST BASE (Faial & Sao Jorge & Pico & Graciosa & Terceira island)
47	TIMBALAI 1948 (Brunei & East Malaysia)
49	- (No Use)

[IV] Antenna Height Setting (Antenna Height)**Procedures**

- 1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

- 3 Press [7] key.**

NAV Equipment Setting Menu will appear.

- 4 Press [7] key.**

GPS Setting Menu will appear.

- 5 Press [1] key.**

GPS Process Setting Menu will appear.

- 6 Press [4] key.**

The Code Input menu will appear.
Enter the antenna height of the own ship.
The multi-function control is also available to enter the values.

- 7 After having entered the value, press [9] key, and transmit the contents of the settings to the GPS receiver.**

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	00'00.000
E	000'00.000
2. Exclusion	
00 00 00 00 00 00	
3. Geodetic	
00	WGS-84
4. Antenna Height	
	0m
5. Fix Mode	
	2D
6. DOP Level	
	Up to 5
7. Position Average	
	LONG
8. Master Reset	
	OFF
9. Send Data	
0. EXIT	

[V] Fix Mode Setting (Fix Mode)

Set the GPS fix mode.

Procedures

- 1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

- 2 Press [7] key.**

NAV Equipment Setting Menu will appear.

- 3 Press [7] key.**

GPS Setting Menu will appear.

- 4 Press [1] key.**

GPS Process Setting Menu will appear.

- 5 Press [5] key.**

From the pull-down menu, you can select the following modes.

2D: 2D positioning only. Height cannot be acquired.

3D: 3D positioning can be done with height acquired.

AUTO: 2D positioning and 3D positioning can automatically be selected with optimum.

- 7 After having entered the values, press [9] key to transmit the setting contents to the GPS receiver.**

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	00'00.000
E	000'00.000
2. Exclusion	
00 00 00 00 00 00	
3. Geodetic	
00	WGS-84
4. Antenna Height	
0m	
5. Fix Mode	
2D	
6. DOP Level	
Up to 5	
7. Position Average	
LONG	
8. Master Reset	
OFF	
9. Send Data	
0. EXIT	

[VI] HDOP Level Setting (DOP Level)

Set the HDOP level of the GPS receiver.

Procedures**1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [1] key.

GPS Process Setting Menu will appear.

5 Press [6] key.

From the pull-down menu, you can select a desired level. As the value is smaller, the precision becomes higher, but positioning grows more difficult.

6 After having entered the values, press [9] key to transmit the setting contents to the GPS receiver.**Exit****1 Press [RADAR MENU] key.**

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	<input type="text" value="00'00.000"/>
E	<input type="text" value="000'00.000"/>
2. Exclusion	
<input type="text" value="00 00 00 00 00 00"/>	
3. Geodetic	
<input type="text" value="00"/>	<input type="text" value="WGS-84"/>
4. Antenna Height	
<input type="text" value="0m"/>	
5. Fix Mode	<input type="text" value="2D"/>
6. DOP Level	<input type="text" value="Up to 5"/>
7. Position Average	<input type="text" value="LONG"/>
8. Master Reset	<input type="text" value="OFF"/>
9. Send Data	
0. EXIT	

[VII] Average Level Setting (Position Average)

Set the time to average position information etc. output from the GPS receiver.

Procedures

- 1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

- 2 Press [7] key.**

NAV Equipment Setting Menu will appear.

- 3 Press [7] key.**

GPS Setting Menu will appear.

- 4 Press [1] key.**

GPS Process Setting Menu will appear.

- 5 Press [7] key.**

From the pull-down menu, select the following:
LONG,
STANDARD, and
NONE.

The degree of average becomes small in order of LONG, STANDARD and NONE. As the degree of average is smaller, the update speed of position information is higher but dispersion is larger.

- 6 After having entered the values, press [9] key to transmit the setting contents to the GPS receiver.**

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	00'00.000
E	000'00.000
2. Exclusion	
00 00 00 00 00 00	
3. Geodetic	
00	WGS-84
4. Antenna Height	
0m	
5. Fix Mode	
2D	
6. DOP Level	
Up to 5	
7. Position Average	
LONG	
8. Master Reset	
OFF	
9. Send Data	
0. EXIT	

[VII] Master Reset (Master Reset)

Transmit the master reset to the GPS receiver to initialize the GPS receiver.

Procedures**1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [1] key.

GPS Process Setting Menu will appear.

5 Press [8] key.

Switching between ON and OFF is done each time you press [8] key Select ON to transmit the reset.

6 After having entered the values, press [9] key to transmit the setting contents to the GPS receiver.**Exit****1 Press [RADAR MENU] key.**

The Main Menu will reappear.

GPS Process Setting	
1. Position	
N	00'00.000
E	000'00.000
2. Exclusion	
00 00 00 00 00 00	
3. Geodetic	
00	WGS-84
4. Antenna Height	
0m	
5. Fix Mode	
2D	
6. DOP Level	
Up to 5	
7. Position Average	
LONG	
8. Master Reset	
OFF	
9. Send Data	
0. EXIT	

Setting in DGPS Receiver (DGPS Setting)

Set an initial value in the DGPS receiver (our DGPS receiver).

[I] DGPS Mode Setting (Mode)

Procedures

- 1 Press [RADAR MENU] key twice.

The Radar Menu will appear.

- 2 Press [7] key.

NAV Equipment Setting Menu will appear.

- 3 Press [7] key.

GPS Setting Menu will appear.

- 4 Press [2] key.

DGPS Setting Menu will appear.

- 5 Press [1] key.

Each time [1] key is pressed, AUTO/MANUAL is toggled.

Auto: Automatically sets the working frequency of Beacon station.

Manual: Manually sets the working frequency.
(From the next page)

- 6 After having entered the value, press [5] key to transmit the setting contents to the DGPS receiver.

Exit

- 1 Press [RADAR MENU] key.

The Main Menu will reappear.

DGPS Setting	
1. Mode	<input type="text" value="AUTO"/>
2. Frequency	<input type="text" value="275.0KHz"/>
3. Baud Rate (BPS)	<input type="text" value="50"/>
4. DGPS Mode	<input type="text" value="ON"/>
<input type="text" value="5. Send Data"/>	
Status	
No Beacon RCV connection	
<input type="text" value="Frequency"/>	<input type="text" value="--- KHz"/>
<input type="text" value="Baud Rate"/>	<input type="text" value="--- Baud"/>
<input type="text" value="RSSI"/>	<input type="text" value="---"/>
<input type="text" value="0. EXIT"/>	

[II] Setting of Working Frequency of Beacon Station (Frequency)

This setting can be made only when Manual is selected in 1. Mode.

Procedures**1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [2] key.

DGPS Setting Menu will appear.

5 Press [2] key.

The Code Input menu will appear.

Enter the working frequency of the Beacon station.

The multi-function control is also available for the entry.

6 After having entered the value, press [5] key to transmit the setting contents to the DGPS receiver.**Exit****1 Press [RADAR MENU] key.**

The Main Menu will reappear.

DGPS Setting	
1. Mode	<input type="text" value="AUTO"/>
2. Frequency	<input type="text" value="275.0KHz"/>
3. Baud Rate (BPS)	<input type="text" value="50"/>
4. DGPS Mode	<input type="text" value="ON"/>
<input type="text" value="5. Send Data"/>	
Status	
No Beacon RCV connection	
<input type="text" value="Frequency"/>	<input type="text" value="--- KHz"/>
<input type="text" value="Baud Rate"/>	<input type="text" value="--- Baud"/>
<input type="text" value="RSSI"/>	<input type="text" value="---"/>
<input type="text" value="0. EXIT"/>	

[III] Setting of Communication Baud Rate with Beacon Station (BPS)

This setting can be made only when Manual is selected in 1. Mode.

Procedures

- 1 Press [RADAR MENU] key twice.**
The Radar Menu will appear.
- 3 Press [7] key.**
NAV Equipment Setting Menu will appear.
- 4 Press [7] key.**
GPS Setting Menu will appear.
- 5 Press [2] key.**
DGPS Setting Menu will appear.
- 6 Press [3] key.**
From the pull-down menu, you can select the following transmission speeds.

50bps
100bps
200bps

Set the desired communication speed.
- 7 After having entered the value, press [5] key to transmit the setting contents to the DGPS receiver.**

Exit

- 1 Press [RADAR MENU] key.**
The Main Menu will reappear.

DGPS Setting	
1. Mode	AUTO
2. Frequency	275.0KHz
3. Baud Rate (BPS)	50
4. DGPS Mode	ON
5. Send Data	
Status	
No Beacon RCV connection	
Frequency	--- KHz
Baud Rate	--- Baud
RSSI	---
0. EXIT	

[IV] DGPS Mode Setting (DGPS Mode)

Set the DGPS mode to ON/OFF. Setting the mode to ON allows you to acquire highly precise position information by using information from the Beacon station. Setting the mode to OFF allows you to acquire position information with the same precision as that of GPS.

Procedures**1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [2] key.

DGPS Setting Menu will appear.

5 Press [4] key.

Switching between ON and OFF is done each time you press [4] key.

6 After having entered the value, press [5] key to transmit the setting contents to the DGPS receiver.**Exit****1 Press [RADAR MENU] key.**

The Main Menu will reappear.

DGPS Setting	
1. Mode	AUTO
2. Frequency	275.0KHz
3. Baud Rate (BPS)	50
4. DGPS Mode	ON
5. Send Data	
Status	
No Beacon RCV connection	
Frequency	--- KHz
Baud Rate	--- Baud
RSSI	---
0. EXIT	

Setting in WAAS Receiver (WAAS Setting)

Make settings in the WAAS receiver (our WAAS receiver).

Because the information the WAAS receiver receives from the satellite also includes the same information as that from DGPS Beacon station, it can perform positioning with higher precision than GPS.

[I] WAAS Mode Setting (Mode)

Set whether or not differential information of the WAAS receiver is acquired from the Beacon or satellite.

Procedures

1 Press [RADAR MENU] key twice.

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [3] key.

WAAS Setting Menu will appear.

5 Press [1] key.

From the pull-down menu, select the following:
BEACON,
WAAS, or
AUTO.

6 After having made entry, press [6] key to transmit the setting contents to the WAAS receiver.

Exit

1 Press [RADAR MENU] key.

The Main Menu will reappear.

WAAS Setting	
1. Mode	<input type="text" value="AUTO"/>
2. Ranging	<input type="text" value="ON"/>
3. NG WAAS	<input type="text" value="NOT USE"/>
4. WAAS Select Mode	<input type="text" value="AUTO"/>
5. WAAS No.	<input type="text" value="120"/>
<input type="text" value="6. Send Data"/>	
<input type="text" value="0. EXIT"/>	

[II] Positioning Satellite Selection/Setting (Ranging)

Set whether or not the WAAS satellite is to be used as a positioning satellite.

Procedures**1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

2 Press [7] key.

NAV Equipment Setting Menu will appear.

3 Press [7] key.

GPS Setting Menu will appear.

4 Press [3] key.

WAAS Setting Menu will appear.

5 Press [2] key.

Switching between ON (use) and OFF (not use) is done each time you press [2] key.

6 After having made entry, press [6] key to transmit the setting contents to the WAAS receiver.**Exit****1 Press [RADAR MENU] key.**

The Main Menu will reappear.

WAAS Setting	
1. Mode	AUTO
2. Ranging	ON
3. NG WAAS	NOT USE
4. WAAS Select Mode	AUTO
5. WAAS No.	120
6. Send Data	
0. EXIT	

[III] Setting of Availability of Banned Satellite (NG WAAS)

Set whether or not the information from the banned WAAS satellite is to be used.

Procedures

- 1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

- 2 Press [7] key.**

NAV Equipment Setting Menu will appear.

- 3 Press [7] key.**

GPS Setting Menu will appear.

- 4 Press [3] key.**

WAAS Setting Menu will appear.

- 5 Press [2] key.**

Switching between USE (use) and NOT USE (not use) is done each time you press [2] key.

- 6 After having made entry, press [6] key to transmit the setting contents to the WAAS receiver.**

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

WAAS Setting	
1. Mode	AUTO
2. Ranging	ON
3. NG WAAS	NOT USE
4. WAAS Select Mode	AUTO
5. WAAS No.	120
6. Send Data	
0. EXIT	

[IV] Satellite Number Setting (WAAS Select Mode)

Set the number of the WAAS satellite to be used.

Procedures

- 1 Press [RADAR MENU] key twice.**
The Radar Menu will appear.
- 2 Press [7] key.**
NAV Equipment Setting Menu will appear.
- 3 Press [7] key.**
GPS Setting Menu will appear.
- 4 Press [3] key.**
WAAS Setting Menu will appear.
- 5 Press [4] key.**
Switching between Auto and Manual is done each time you press [4] key.
- 6 After having made entry, press [6] key to transmit the setting contents to the WAAS receiver.**

Exit

- 1 Press [RADAR MENU] key.**
The Main Menu will reappear.

WAAS Setting	
1. Mode	<input type="text" value="AUTO"/>
2. Ranging	<input type="text" value="ON"/>
3. NG WAAS	<input type="text" value="NOT USE"/>
4. WAAS Select Mode	<input type="text" value="AUTO"/>
5. WAAS No.	<input type="text" value="120"/>
<input type="text" value="6. Send Data"/>	
<input type="text" value="0. EXIT"/>	

[V] Satellite Number Setting (WAAS Select Mode)

Set the number of the WAAS satellite to be used.

Procedures

- 1 Press [RADAR MENU] key twice.**

The Radar Menu will appear.

- 2 Press [7] key.**

NAV Equipment Setting Menu will appear.

- 3 Press [7] key.**

GPS Setting Menu will appear.

- 4 Press [3] key.**

WAAS Setting Menu will appear.

- 5 Press [5] key.**

The Code Input menu will appear.
Enter numeric values between Nos.120 and 138.

The multi-function control is also available to enter the values.

- 6 After having made entry, press [6] key to transmit the setting contents to the WAAS receiver.**

Exit

- 1 Press [RADAR MENU] key.**

The Main Menu will reappear.

The screenshot shows a menu titled "WAAS Setting" with the following items and their corresponding input fields:

- 1. Mode:
- 2. Ranging:
- 3. NG WAAS:
- 4. WAAS Select Mode:
- 5. WAAS No.:
- 6. Send Data:
- 0. EXIT:

GPS Reception Status Display (GPS Status)

Display the reception status of the GPS receiver (GPS, DGPS and WAAS receivers) currently connected.
Seize the status of satellites that are currently performing positioning.

Procedures

- 1 **Press [RADAR MENU] key twice.**

The Radar Menu will appear.

- 2 **Press [7] key.**

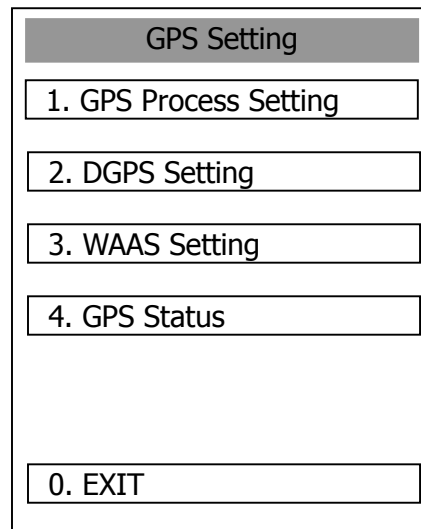
NAV Equipment Setting Menu will appear.

- 3 **Press [7] key.**

GPS Setting Menu will appear.

- 4 **Press [4] key.**

GPS Status Menu will appear.



Exit

- 1 **Press [0] key.**

The Status Menu will be closed.

- 2 **Press [RADAR MENU] key.**

The menu will be closed.



GPS STATUS						
DATE /TIME (UTC)	---	---	---	---	---	---
L/L	---	---	---	---	---	---
FIX MODE	---	---	---	---	---	---
ALT	---	---	---	---	---	---
DOP LEVEL	---	---	---	---	---	---
SATELLITE No.	---	---	---	---	---	---
FIX	---	---	---	---	---	---
AZIMUTH	---	---	---	---	---	---
ELEVATE	---	---	---	---	---	---
LEVEL	---	---	---	---	---	---
STATUS	---	---	---	---	---	---
SATELLITE No.	---	---	---	---	---	---
FIX	---	---	---	---	---	---
AZIMUTH	---	---	---	---	---	---
ELEVATE	---	---	---	---	---	---
LEVEL	---	---	---	---	---	---
STATUS	---	---	---	---	---	---
RSSI	---	---	---	---	---	---
0. EXIT						

GPS Status Display

The following items are to appear on the Status display.

DATE/TIME	:	Local date and time
(UTC)	:	Greenwich Mean Time
L/L	:	Current latitude and longitude
FIX MODE	:	Fix Mode (2D positioning/3D positioning)
ALT	:	Altitude of own ship. Setting the Fix Mode to 2D displays the antenna height initially set.
DOP LEVEL	:	Precision of positioning results. As the value is smaller, the indicated precision is higher.
SATELLITE No.	:	Satellite No.
FIX	:	Is positioning data used?
AZIMUTH	:	Azimuthal angle of satellite
ELEVATE	:	Elevation angle of satellite
LEVEL	:	Reception signal level
STATUS	:	Current status of satellite
RSSI	:	Reception intensity of Beacon station

Time/Day Display Setting (Day Time Setting)

In displaying the time, it is necessary to set the LOCAL TIME, LOCAL DATE and GMT+/-.

Procedures

1 Press [RADAR MENU] key twice.

The RADAR Menu will appear.

2 Press [8] key.

The RADAR SUB Menu will appear.

3 Press [4] key.

The Date/Time Setting Menu will appear.

4 Press [1] key.

will be selected.

The setting is switched back and forth between UTC (Coordinate Universal Time) and LOCAL (local time) each time [1] key is pressed.

5 Press [2] key.

The Code Input Menu will appear.

6 Enter the date.

The date will be set. The multi-function control is also available for the entry.

After having enter the date, press ENT.

7 Press [3] key.

The Code Input Menu will appear.

Date/Time Setting	
1. UTC/LOCAL	<input type="text" value="OFF"/>
2. Local Date	<input type="text" value="1971/01/01"/>
3. Local Time	<input type="text" value="00:00"/>
4. Time Zone	<input type="text" value="+00:00"/>
<input type="text" value="0. EXIT"/>	

8 Enter the time.

The time will be set. The multi-function control is also available for the entry.

After having enter the time, press ENT.

9 Press [4] key.

The Code Input Menu will appear.

10 Enter the time difference.

The time difference will be set. The multi-function control is also available for the entry.

After having enter the value, press ENT.

Exit**1 Press [RADAR MENU] key.**

The menu will be closed.

Attention

- **Time correction is not available when the “ZDA” sentence of NMEA0183 is not received.**

Adjustment of Performance Monitor (NJU-63/64)

* Execution of this item needs a PM unit (option).

Procedures

- 1 Set the radar to Master Radar when the Interswitch is installed.
- 2 Press VRM1 key to display VRM1 and set the range of VRM1 to 10-18* NM.

* Set the range to 10 to 18 NM when a waveguide is installed between the scanner unit and the transmitter-receiver unit. (X band radar)

* Set the monitor for long range when the transmitter-receiver unit is incorporated in the scanner unit or in case of operating the S band radar.

- 3 The Equipment Setup Menu will appear in accordance with the instructions of section 8.5.

- 4 Press [4] key.

The TRX Setting Menu will appear.

- 5 Press [4] key.

The Code Input Menu will appear.

- 6 Enter a set value.

Adjust the PM pattern so that its outer edge is within 10 to 18 NM. The multi-function control is also available for the entry. After having enter the value, press ENT.

- 7 Attach the INFORMATION LABEL provided with the performance monitor to an appropriate position on the display unit.

TRX Setting	
1. Antenna Height	<input type="text" value="5-10m"/>
2. Tune Peak Adjust	<input type="text" value="0"/>
3. Tune Indicator Adjust	<input type="text" value="0"/>
4. PM Adjustment	<input type="text" value="0"/>
5. MBS Level	<input type="text" value="0"/>
6. MBS Area	<input type="text" value="0"/>
7. Output Pulse	<input type="text" value="2048"/>
8. Antenna Location	<input type="text" value="0m"/> <input type="text" value="0m"/>
<input type="text" value="0. EXIT"/>	

8 Press [RADAR MENU] key twice.

The RADAR Menu will appear.

9 Press [8] key.

The RADAR Sub Menu will appear.

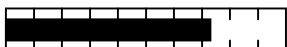
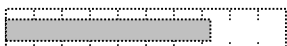
10 Press [9] key.

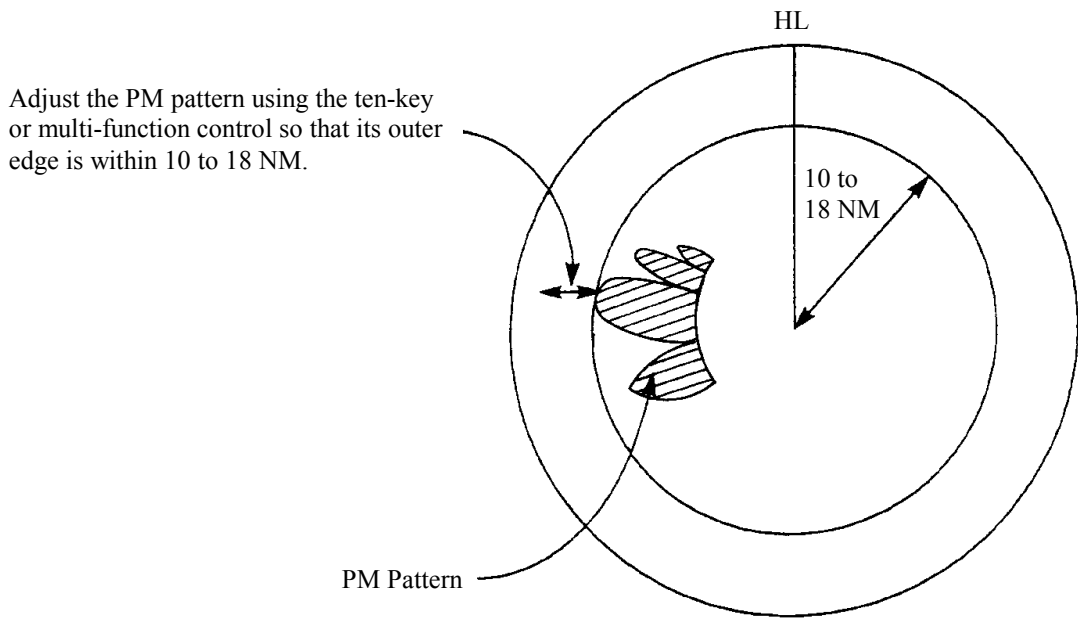
The Test Menu will appear.

11 Press [4] key, and set PM Display to ON.

The PM bar will appear.

12 Write the value indicated by the PM bar and the check date to the INFORMATION LABEL you have attached to the display unit in step 7.

Test Menu	
1. Self Test	
2. Monitor Test	
3. Panel Test	
4. PM Display	ON
5. Error Logging	
6. System INFO	
MAGI	
PM	
0. EXIT	



Exit

1 Press [RADAR MENU] key.

The menu will be closed.

- Note:**
- All target acquisitions by ARPA functions will be cancelled when PM is ON. The target acquisition cancelled will not be recovered.
 - The radar image is suppressed to make the PM image easier to see. Therefore, the PM Display should be turned OFF after PM check is completed.