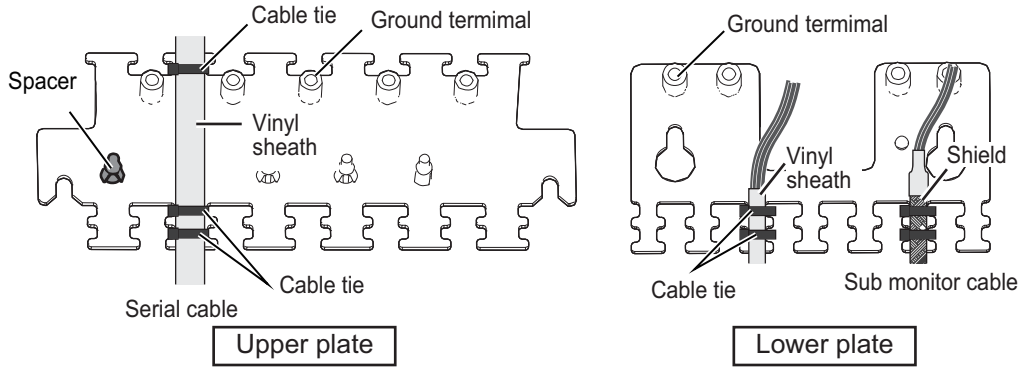


2. WIRING

- Fasten the cables to the post part of the plates with cable ties (local supply).

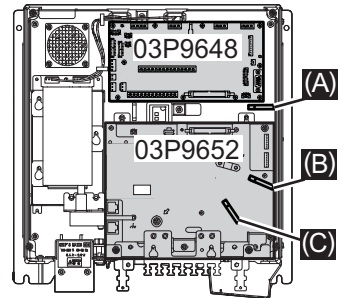
Note: Be sure the vinyl sheath on the post.



- Pass the cables to the TB board 03P9648 and 03P9562 through the locking wire saddles (A, B and C) in the figure shown right.

For the cables on the upper plate, use locking wire saddles (A and B).

For the cables on the lower plate, use locking wire saddles (A, B and C).

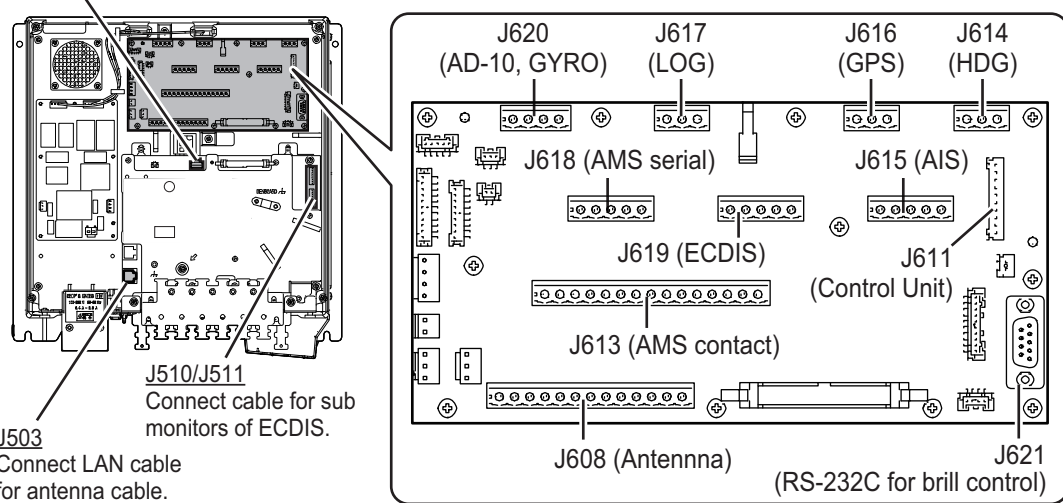


- Connect the connectors to the TB Board. referring to the interconnection diagram.

J508

Connect cable for USB mouse or USB keypad (local supply, max. 5 m).

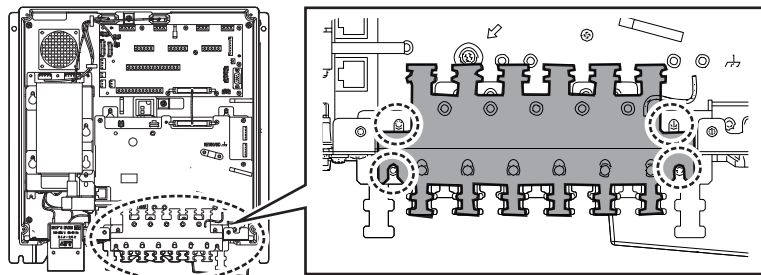
Note: Do not connect a USB device other than mouse.



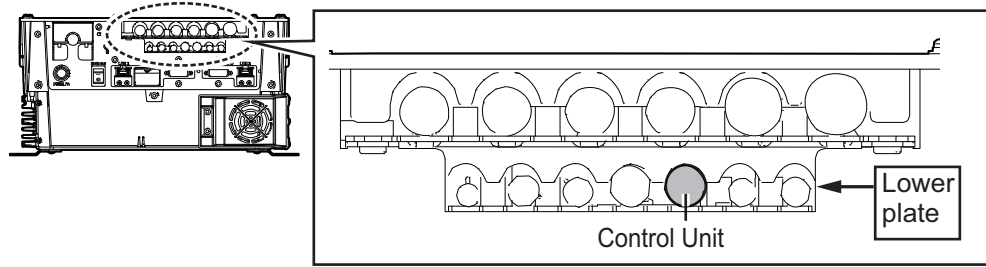
- Connect the ground wires of cables to the near ground terminals on the plates.

Connection of cables for Control Unit

- Unfasten the four bolts, indicated with dashed circles below, to remove the upper plate of the cable clamp.

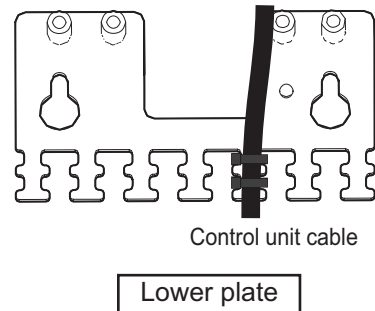


- Remove the appropriate spacer to pass the cable for Control Unit on the lower plate. The recommended cable entrance is shown as below.

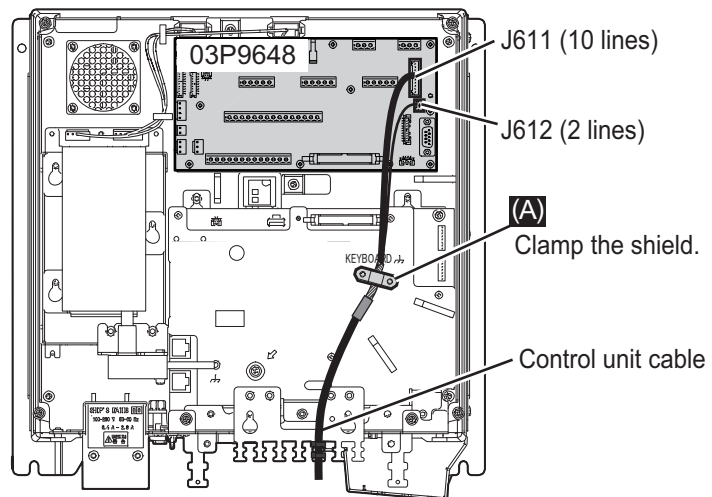


- Fasten the cable to the post part of the plate with a cable tie (local supply).

Note: Be sure the vinyl sheath on the post.



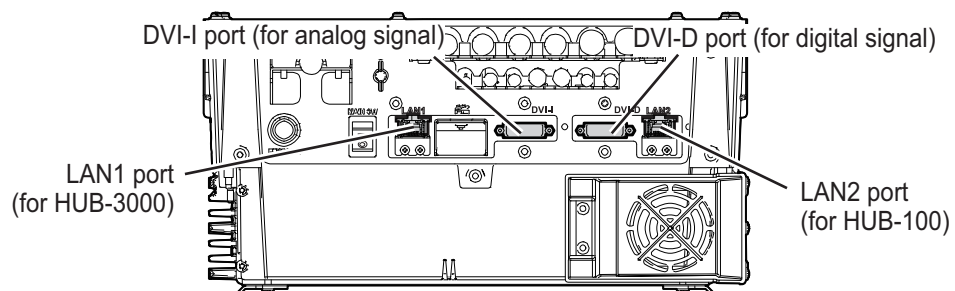
- Pass the cables to the TB board 03P9648 and clamp the shield of the cable with the cable clamp (A) shown in the following figure. Then, connect to J611 and J612.



Connection of cable of LAN, Monitor Unit, VDR

Connect the cables of Intelligent HUB (HUB-3000) and Switching HUB (HUB-100) to the LAN ports in front of the Processor Unit.

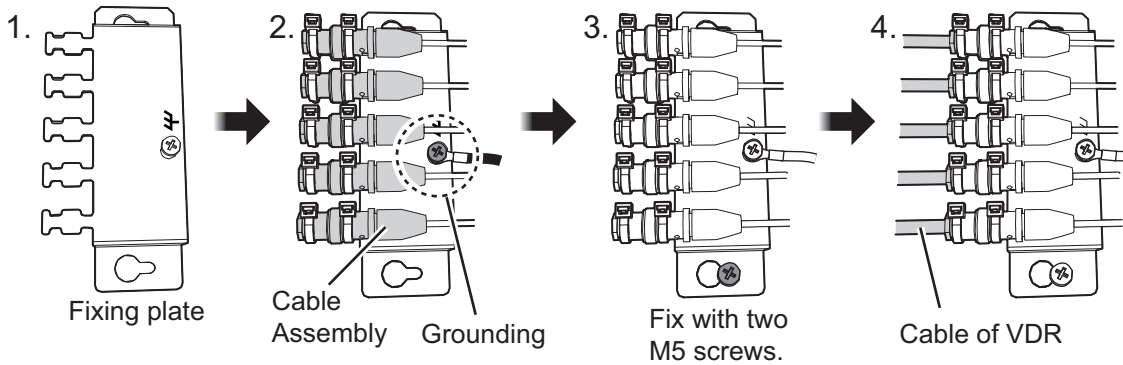
Connect the cables of Monitor unit or VDR to the DVI ports at the front of the Processor Unit.



2. WIRING

For VDR connection, the RGB signal can be output with using the optional DVI-BNC cable kit OP03-252 (Code No.: 001-496-900).

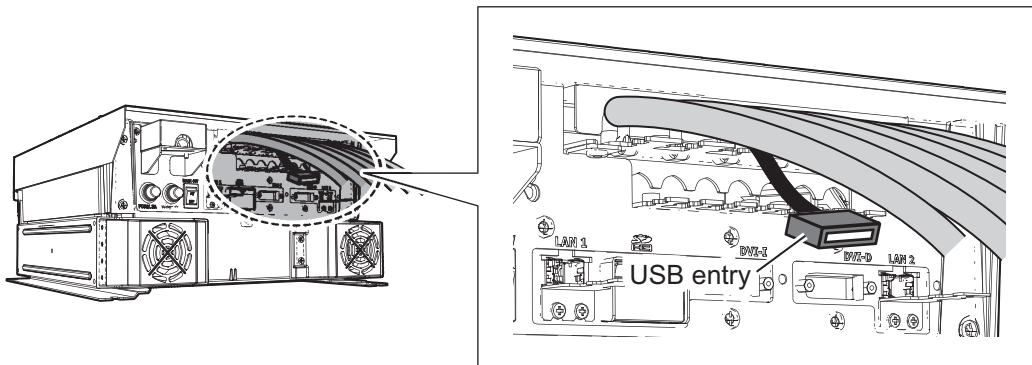
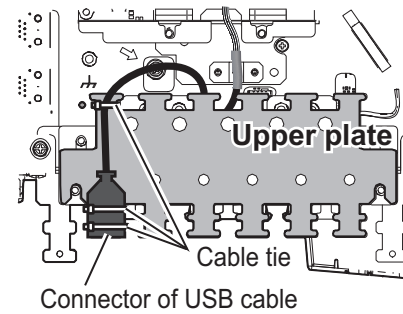
1. Attach the five connectors of the Cable Assembly (supplied) to the fixing plate (supplied) with cable ties as below.
2. Establish the ground system on the fixing plate.
3. Fix the cable assembly to the appropriate location with two screw (M5). The location must be within 200 cm of the Processor Unit.
4. Connect the VDR cables to the connectors of the cable assembly.



Fastening of USB connector (for C-type radars)

The USB connector of the RP board should be fastened as shown in the figure to the right. Use three cable ties (local supply) to secure the connector of the USB cable to the upper cable entrance of the Processor Unit.

If there is no extra space on the cable entrance of the Processor Unit and you can not secure the cable connector, pass the USB cable next to the thinnest cable (cable entrance with the most room to spare), then pull the USB connector towards the front of the Processor Unit. Place the USB cable beneath the other cables to prevent water intrusion into the USB cable. Secure the USB cable to the neighboring cable with the supplied cable ties.



2.9 Monitor Unit

For the wiring of the monitor unit, see the operator's manual supplied with the monitor unit.

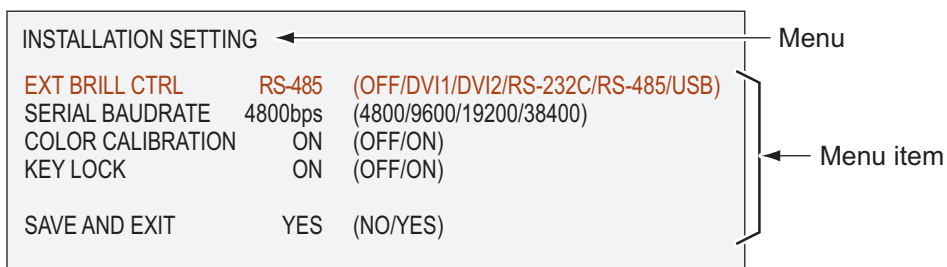
Mounting considerations

- Standard type
 - Connect the radar main monitor to the DVI1.
 - Connect the sub radar monitor to the DVI2.
- VDR connection

To connect a VDR, it is necessary to output data in analog format. To connect a VDR to the DVI-I port, use the optional DVI-BNCX5+GND-L2.0 cable to output the RGB signal from the DVI-I. See the operator's manual supplied with the VDR. Adjustment of the output is necessary.

Menu Setting

The [INSTALLATION SETTING] menu appears only when the power is turned on for the first time after installation of the monitor unit.



Adjust the settings referring to the following table.

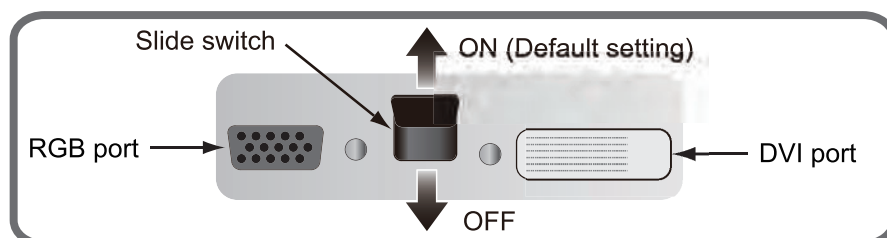
EXT BRILL CTRL	COLOR CALIBRATION	KEY LOCK	DVI PWR SYNC*
DVI	OFF	ON	ON

*: [DVI PWR SYNC] is the slide switch at the bottom rear of the monitor unit. Confirm that this switch is set to [ON] (default setting). See Slide switch below for details.

Slide switch

Set the slide switch to "ON" (default setting). This setting automatically powers the monitor unit on or off according to the DVI signal input. The power switch of the monitor unit is inoperative.

Note: The OFF position provides control of the monitor unit power with the power switch of the monitor unit.



How to open the [INSTALLATION SETTING] menu

Turn off the monitor unit. While you hold the **DISP** key, press the **BRILL** key to turn on the monitor unit. Keep the **DISP** key pressed until the [INSTALLATION SETTING] menu appears.

Note: When the [DVI PWR SYNC] slide switch is ON, turn on the connected external equipment while you press the **DISP** key to turn on the monitor unit.

2.10 LAN Signal Converter

The LAN Signal Converter allows the use of existing antenna cable RW-9600/6895/4873 for TR-UP radar.

If the LAN Signal Converter is not attached in the antenna and Processor Units, the LAN Signal Converter Kit (optional supply) is required.

For X-band radar only, you can select a specification with the LAN Signal Converter pre-installed at the factory.

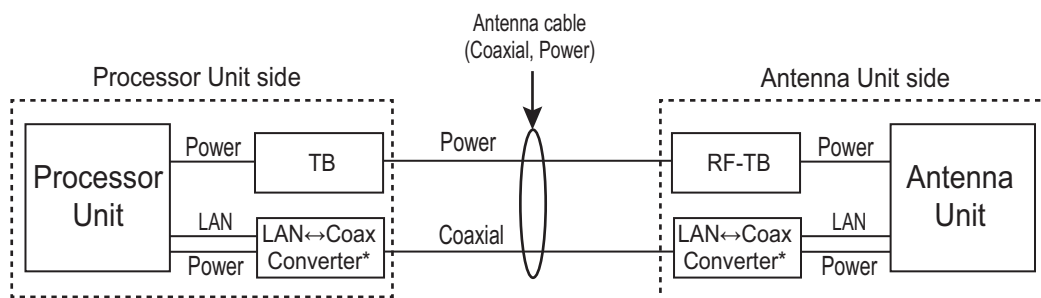
LAN Signal Converter Kit (option)

Radars	Type	Code No.
X-band magnetron radar	OP03-247-3	001-496-580
X-band solid state radar	OP03-247-4	001-568-890
S-band magnetron radar	OP03-247-2	001-496-570
S-band solid state radar	OP03-247-1	001-496-560

2.10.1 Application overview

The LAN Signal Converter has two applications.

Application 1: Use with existing antenna cable (retrofit)



* Installed inside respective unit.

Method 1: Using existing antenna cable (RW-9600/6895/4873)

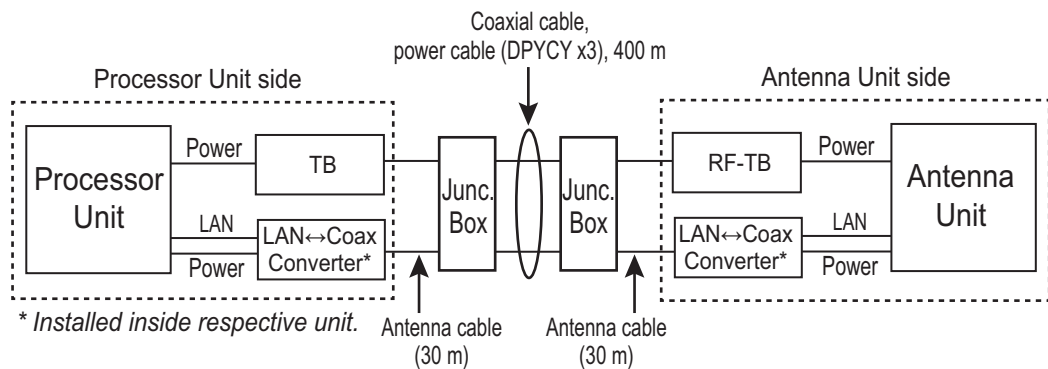
Note: Use with existing antenna cable (RW-9600/6895/4873) in case of retrofit. The maximum length of the antenna cable is 100 m for RW-9600, 50 m For RW-6895/4873.

Application 2: Foremast installation (for X-band radar only)

Foremast installation, where the distance between the Antenna Unit and the Processor Unit is more than 100 m (max. 460 m). In this case, two Junction Boxes RJB-001 are required (for antenna and Processor Units). See section 2.11 and the interconnection diagram for connections in the junction box.

The Cable Extension Kit (Type: OP03-224-3, Code No.: 001-254-410), comprised of two junctions boxes, one LAN Signal Converters and necessary hardware, is available as an optional extra.

Note: Only the RW-9600 cable can be used for foremast installation. The RW-6895/4873 cables are not available.



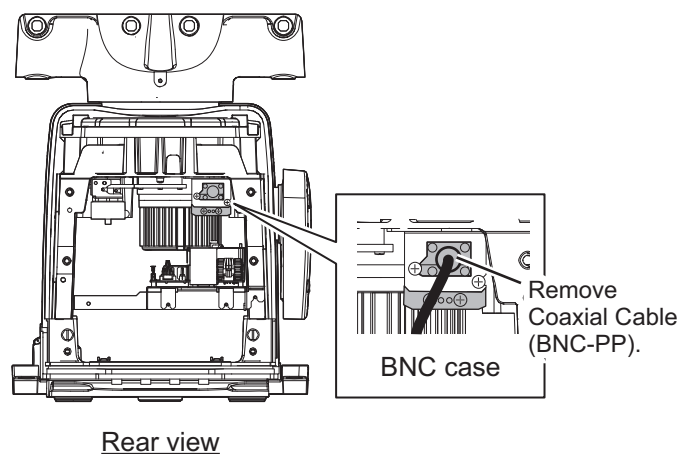
Method 2: Using antenna cable RW-9600

2.10.2 Wiring in the Antenna Unit with LAN Signal Converter pre-installed (X-band radar only)

Note: If the Antenna Unit does not include the LAN Signal Converter, the converter kit (available as an optional extra) is required. See "LAN Signal Converter Kit (option)" on page 2-64.

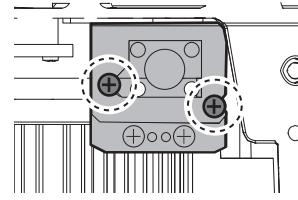
Dismount the transceiver unit in the Antenna Unit. See section 2.2.2, for details. Also, in the procedure, mainly figures of magnetron radar are shown.

1. Unfasten the coaxial cable from the converter in the Antenna Unit.

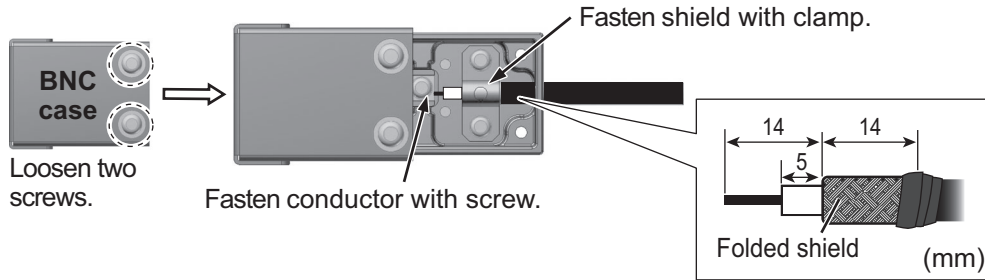


2. WIRING

2. Unfasten two screws to detach the BNC case from the Antenna Unit.



3. Loosen two screws on the BNC case. Attach the coaxial cable from the Antenna Unit then close the case.

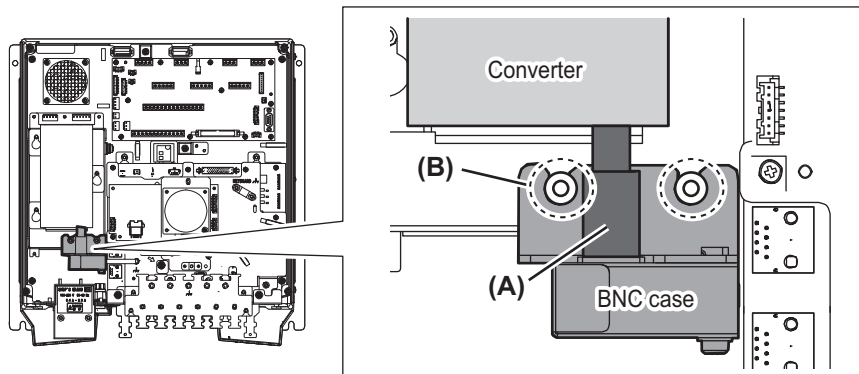


4. Fasten the BNC case to the original position in the Antenna Unit with original two screws, referring to step 2.
5. Mount the transceiver unit to the Antenna Unit.
6. Re-connect the coaxial cable (disconnected at step 1).

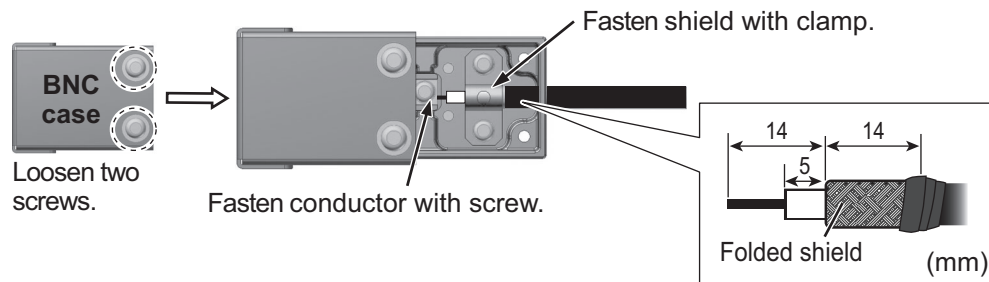
2.10.3 Wiring in the Processor Unit installed the LAN Signal Converter already (X-band radar only)

Some parts or wiring may have been omitted from the illustrations of the Processor Unit for clarity.

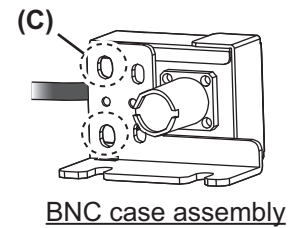
1. Disconnect the connection (A) between the converter and BNC case. Unfasten two screws (B) on the BNC case assembly to remove the BNC case assembly from the Processor Unit.



- Loosen two screws on the BNC case. Attach the coaxial cable from the Antenna Unit.



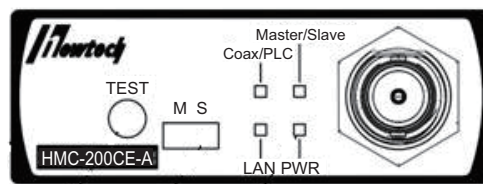
- Loosen the screws (C) on the BNC case assembly, then attach the BNC case assembly to the original position in the Processor Unit.



- After attaching, adjust the position of the BNC case, then fasten the two loose screws (C) tightly.

2.10.4 How to check the installation

Observe the LEDs on the converter to check for proper operation and troubleshooting.



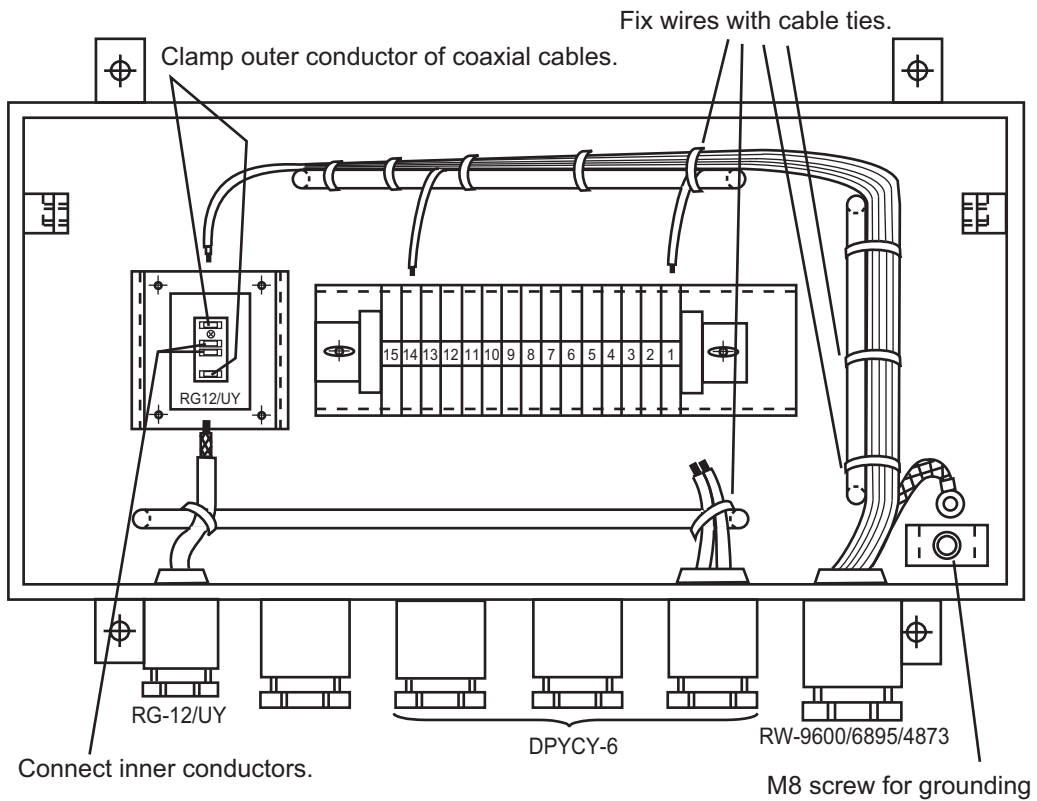
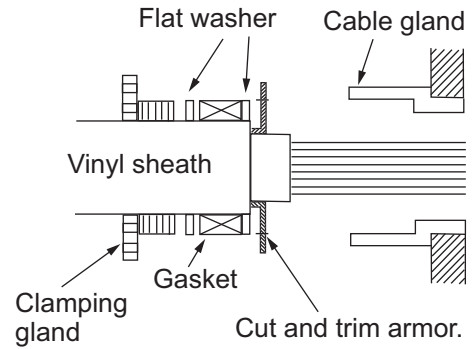
LED	State	Meaning
PWR	OFF	Power OFF
	Lighting green	Power ON
	Flashing orange	Test mode
LAN	OFF	Link down
	Lighting green	100 M link up
	Flashing green	100 M active
	Lighting orange	10 M link up
	Flashing orange	10 M active
Coax/PLC	OFF	Link down
	Lighting green	Link up
Master/Slave	Lighting green	Master mode
	Lighting orange	Slave mode

Note: The **TEST** button is for factory use. Do not operate the button.

2.11 Junction Box (option)

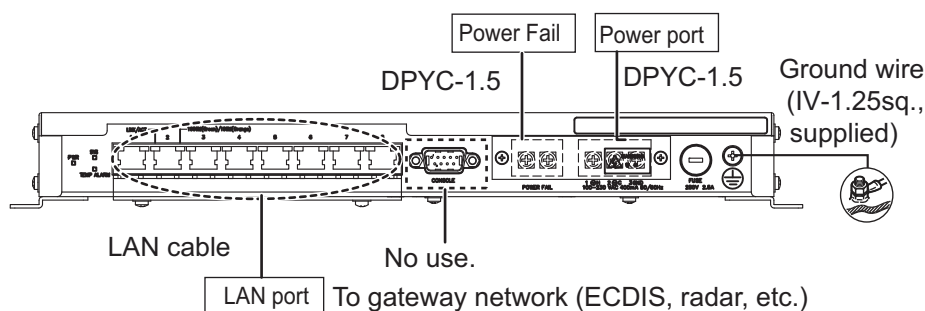
For FAR-2x18/2x28/2x38 X-band radars, the Junction boxes are required when the distance between the Antenna Unit and Processor Unit is greater than 100 meters (max. 460 meters); for example, the Antenna Unit is installed on the foremast. Use signal cable RW-9600 (×2), power cable DPYCY-6 (×3), and coaxial cable RG-12/UJ(×3).

Pass each cable through its cable gland as shown to the right.

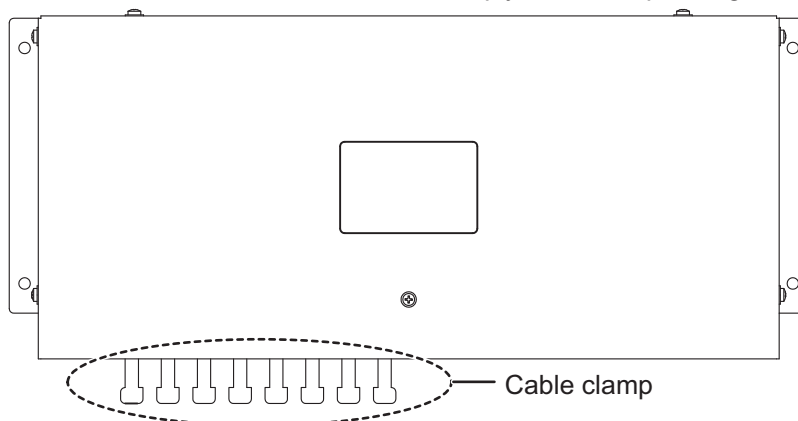


2.12 Intelligent HUB (option)

Secure the LAN cables to the cable clamps on the HUB-3000 with cable ties (supplied).



Attach the supplied LAN caps to unused connector holes to comply with waterproofing standard IPX2.



2.13 VDR Connection

The Processor Unit has the DVI-I port or the LAN port for connection of a VDR.

2.13.1 DVI-I (Analog RGB) port connection

- Use the optional RGB cable (DVI-BNCX5+GND-L2.0) to connect the VDR.
- The DVI-D port and DVI-I port have their own circuits. This prevents interruption of the radar picture shown on the main monitor connected to the DVI-D port, if a fault condition occurs at the DVI-I port.
- The Processor Unit continuously outputs video signals from its DVI-D and DVI-I ports. The operator cannot stop the output.

2.13.2 LAN2 port connection

- Connect a VDR complied to IEC-61162-450 standards to the LAN2 port.
- If the [VDR LAN OUTPUT] setting is set to [ON], the screenshot (JPEG-format) is output every 15 seconds through LAN2 port. See "[VDR LAN OUTPUT]" on page 3-23.
- The output image at the same resolution as the DVI-D port.
- The LAN2 port and DVI-D port have their own circuits. This prevents interruption of DVI-D port, if a fault condition occurs at the LAN2 port.

2. WIRING

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3. ADJUSTMENTS

Note: After completing the settings and adjustments, copy the setting data to a SD-card* (USB flash memory* for C-type radars), referring to the Operator's Manual. This will allow easy restoration of setting data after the MAIN Board is replaced, etc.

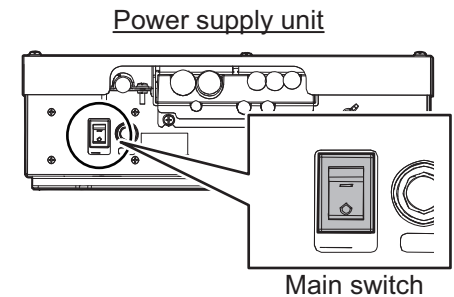
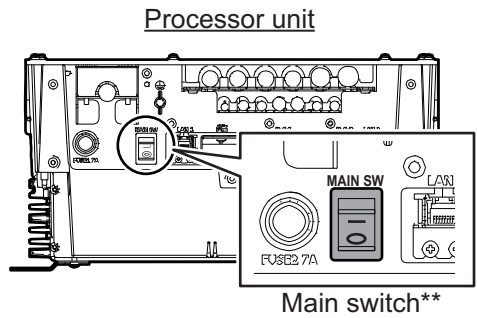
*: The SD card slot is in front of the Processor Unit, and the USB flash memory slot is connected to the RP board 03P9657.

At the first start-up after installation, turn on the Processor Unit with the main switch. Open the protected menus to adjust the radar. Follow the procedures in this chapter to complete the adjustment.

** : For DC power specifications, the Processor Unit does not have the main switch. To power on the Processor Unit for DC power specifications, turn on the ship's Mains.

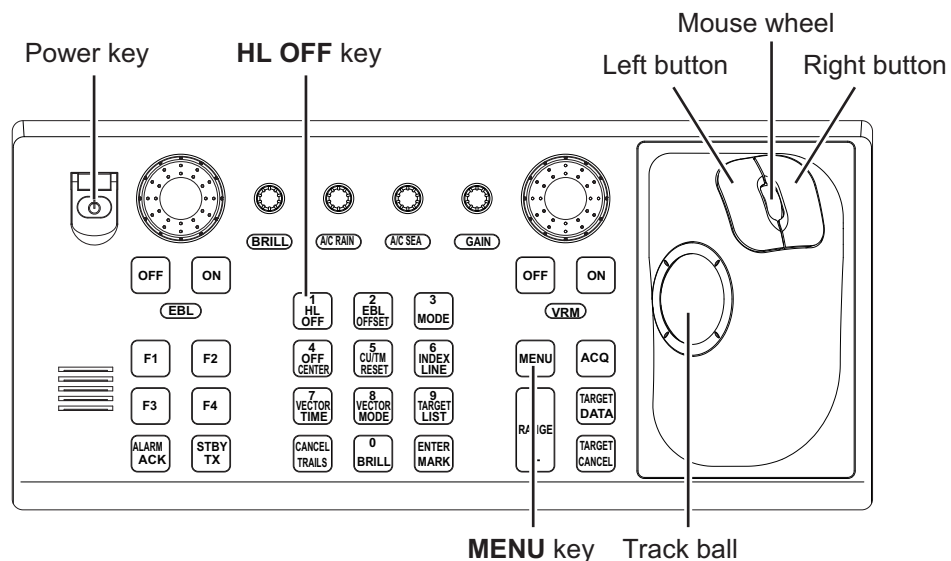
For FAR-2258/2268DS radars, turn on the Power Supply Unit also with the main switch.

Note: Turn the main switch of the Processor Unit off before turning the Power Supply Unit off. Further, both units should also be turned off at the ship's main switchboard.



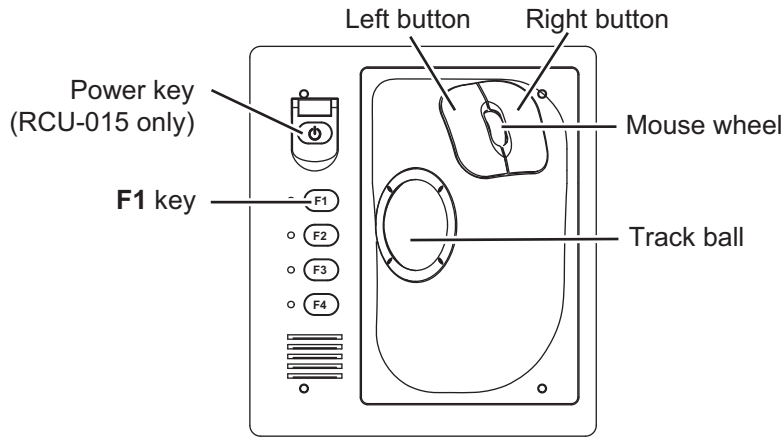
Below are the controls on the Control Unit RCU-014/015(or optional RCU-016) that are used to make the adjustments.

RCU-014

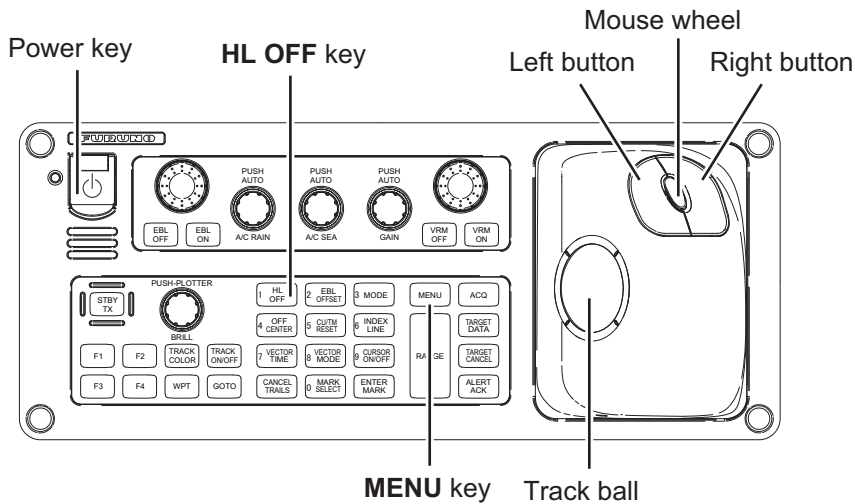


3. ADJUSTMENTS

RCU-015/016



RCU-031



How to Use the Menu

1. Press the Power key to turn on the unit.
2. Press the **MENU** key or click the [MENU] box to open the main menu.
The [RADAR INSTALLATION] menu does not appear when the unit is first turned on. It appears on the main menu after displaying it by following the procedures on the section 3.1 and is displayed until the unit is turned off.
3. Operate the track ball or the mouse wheel to select a menu item then click the left button.
4. Operate the track ball or the mouse wheel to select a menu option then click the left button. To return to above layer, select [BACK] then click the left button or right button.
5. If the menu option requires entry of numeric data, rotate the mouse wheel to set the value, then click the left button.
6. Close the menu by pressing the **MENU** key once or click the right button few times.

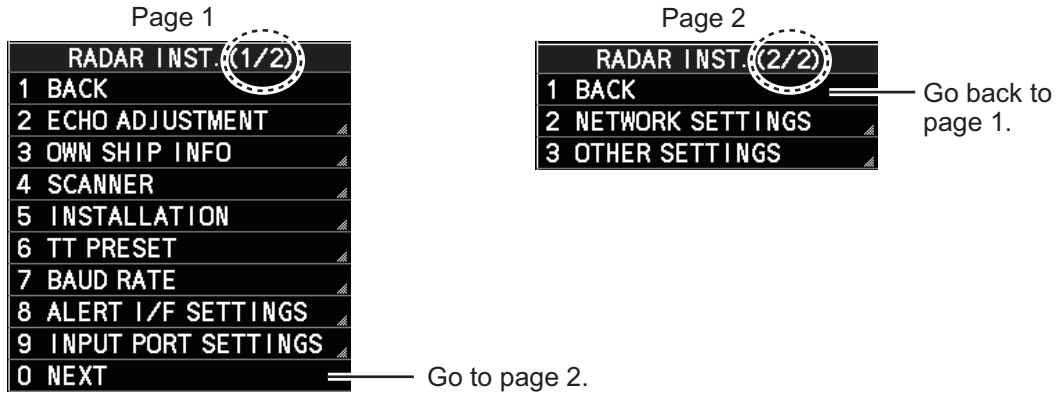
MAIN MENU	
1	ECHO
2	MARKS · CHARTS
3	NAV TOOLS
4	ALERTS
5	TT · AIS
6	FILES
7	INFORMATION BOX
8	NAV LINE · WPT
9	INITIAL SETTINGS

3.1 How to Open the Radar Installation Menu

The [RADAR INSTALLATION] menu has various items through two pages for adjustment of the radar. To show this menu;

For RCU-014: Press and hold the **HL OFF** key, then press the **MENU** key five times.

For RCU-015/016: Put the cursor on the [MENU] box. Press and hold the **F1** key, then right-click five times.



Tuning initialization

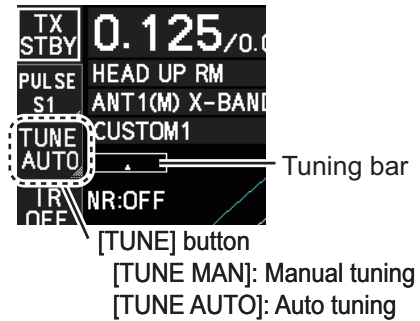
Tuning initialization is required before setting up the radar.

Open the main menu then select [ECHO]→ [TUNING INITIALIZE] to start initialization. "TUNE INIT" appears on the top of the display during the initialization.

After tuning is completed, right-click twice to close the menu.

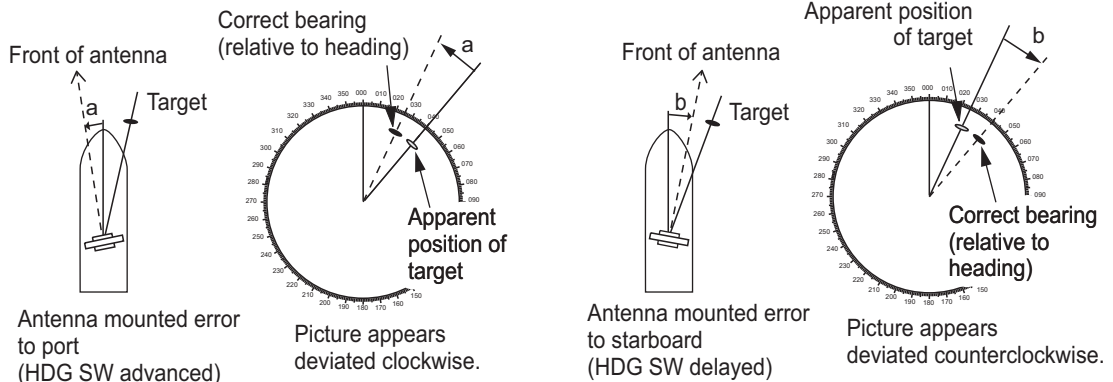
Note 1: In STBY, this menu is not available.

Note 2: For solid-state device radar, this menu is invalid.



3.2 How to Align the Heading

You have mounted the Antenna Unit facing straight ahead in the direction of the bow. Therefore, a small but conspicuous target dead ahead visually must appear on the heading line (zero degrees).



3. ADJUSTMENTS

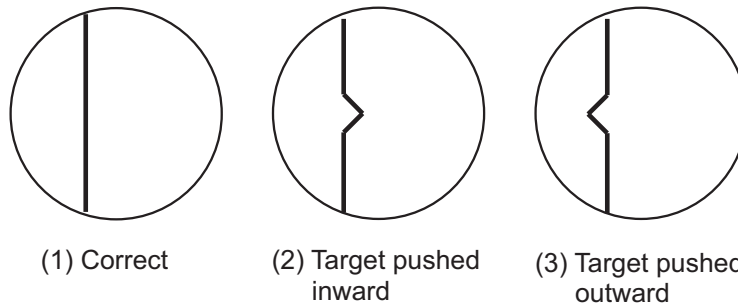
In practice, you will probably observe some small bearing error on the display because of the difficulty in achieving accurate initial positioning of the Antenna Unit. The following adjustment will compensate for this error.

1. Select a stationary target echo at a range between 0.125 and 0.25 NM, preferably near the heading line.
2. Operate the EBL control to bisect the target echo.
3. Read the target bearing.
4. Measure the bearing of the stationary target on a navigation chart and calculate the difference between the actual bearing and apparent bearing on the radar screen.
5. Show the [RADAR INSTALLATION] menu.
6. Select [ECHO ADJUSTMENT] followed by [HD ALIGN].
7. Key in the bearing difference. The setting range is 0° to 359.9° (default: 000.0°).
8. Confirm that the target echo is displayed at the correct bearing on the screen.

3.3 How to Adjust the Sweep Timing

Sweep timing differs with respect to the length of the signal cable between the Antenna Unit and the Processor Unit. Adjust sweep timing at installation to prevent the following symptoms:

- The echo of a "straight" target (for example, pier), on the 0.25 NM range, appears on the display as being pulled inward or pushed outward. See the figure below.



- The range of target echoes is incorrect.
 1. Set the GAIN, A/C SEA and A/C RAIN controls shown below.
GAIN: 80
A/C SEA: Fully counterclockwise (OFF)
A/C RAIN: Fully counterclockwise (OFF)
 2. Open the [RADAR INSTALLATION] menu, then select [ECHO ADJUSTMENT] menu.
 3. Select [TIMING ADJ VALUE] to set the value for adjustment timing manually. The setting range is 0000 to 4095. The default settings for each radar are shown below;
 - Default for magnetron radar: [325]
 - Default for solid state radar: [43]
 4. After the adjustment is completed, set the radar to the minimum range. Confirm that no echoes are "missing" at the center of the radar screen. If echoes are missing, do step 3 again.

3.4 How to Suppress Main Bang

Main bang is the clutter at the center of the screen that you typically see on the radar display, and it may mask close-in targets. If main bang appears at the screen center, suppress it as follows.

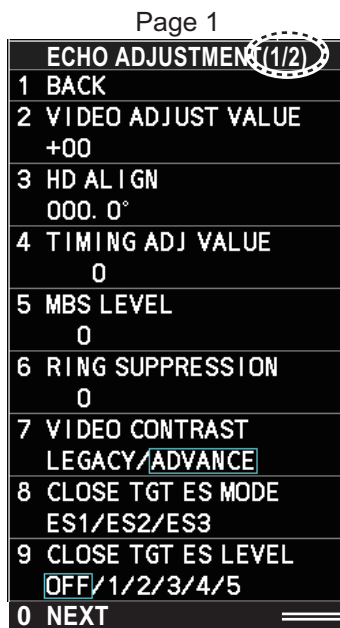
1. Transmit the radar on a long range and then wait ten minutes.
2. Adjust the gain to show a slight amount of noise on the display.
3. Select the 0.125 NM range, and turn off the **A/C SEA** and **A/C RAIN** controls.
4. Show the [RADAR INSTALLATION] menu, then select [ECHO ADJUSTMENT].
5. Select [MBS LEVEL], then set a value that causes the main bang to faintly disappear. The setting range is 0 to 255 (default: 0).

3.5 Other Settings

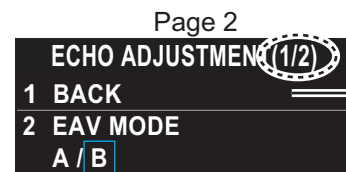
This section describes the menu items not previously described.

3.5.1 [ECHO ADJUSTMENT] menu

Open the main menu then select [RADAR INSTALLATION]→[ECHO ADJUSTMENT] to open the [ECHO ADJUSTMENT] menu.



Go to page 2.



Go back to page 1.

[VIDEO ADJUST VALUE]

Adjust the video level manually to remove noise.

Preset the radar as follows:

- Interference Rejector (IR): 2
- Gain: 80
- Echo Stretch (ES): OFF
- Echo Averaging (EAV): OFF
- Range: 24 NM
- Pulse Length: Long

3. ADJUSTMENTS

Set the value so that noise just disappears from the screen. The setting range is -32 to +32 (default: +32).

Note: The setting range is 0 to +31 (default: +12) when the [MODEL] setting is set to [50] or [60], see "[MODEL]" on page 3-12.

When using the number keys, the indication is first selected as a whole. At this time, you can toggle between plus "+" or minus "-". Press the **8** key for "-", press the **2** key for "+". If single digits are highlighted, toggle is not possible. In this case, press the **CANCEL/TRAILS** key to re-highlight the whole indication.

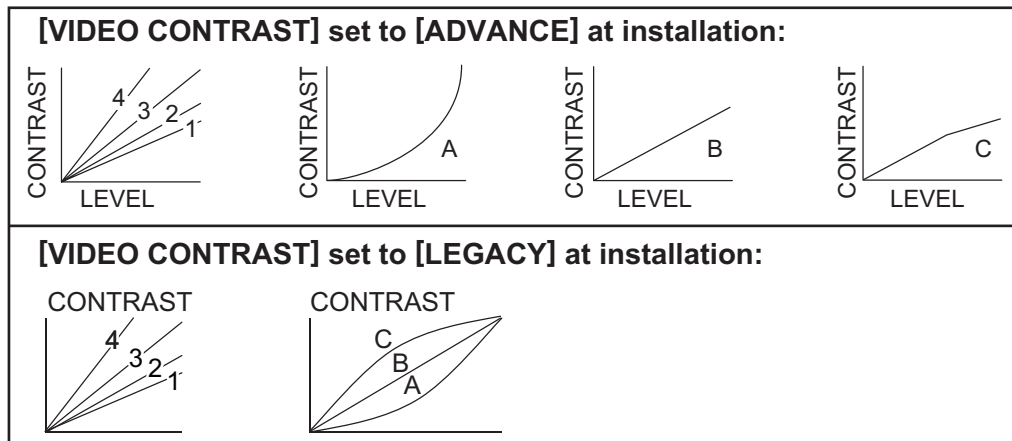
[RING SUPPRESSION]

Remove "ring" noise which appears with the waveguide type radars. Adjust so the rings disappear at the range of 0.125 m. The setting range is 0 to 255 (default: 1).

Note: This menu is **NOT** available when the [MODEL] setting is set to [50] or [60] (see "[MODEL]" on page 3-12).

[VIDEO CONTRAST]

Select [ADVANCE] to clarify the echo image difference (default: [ADVANCE]).



[CLOSE TGT ES MODE]

The [ECHO STRETCH] menu can enlarge the whole targets of the screen (Main menu → [ECHO] → [CUSTOMIZED ECHO] → [ECHO STRETCH]). This [CLOSE TGT ES MODE] feature can also enlarge targets around own ship in addition to the [ECHO STRETCH] feature.

This menu has three options, [ES1], [ES2] or [ES3]. Select the setting to enlarge the targets around own ship for the [ECHO STRETCH] setting ([1] to [3]).

- [ES1]: Select when enlarging the targets around own ship with selected [1] at [ECHO STRETCH].
- [ES2]: Select when enlarging the targets around own ship with selected [2] at [ECHO STRETCH].
- [ES3]: Select when enlarging the targets around own ship with selected [3] at [ECHO STRETCH].

Note: Multiple selections among [ES1], [ES2] and [ES3] are possible.

The each effect level depends on the following menu [CLOSE TGT ES LEVEL] ([OFF], [1] to [5]).

[CLOSE TGT ES LEVEL]

Select the effect level of the echo stretch around own ship which is selected in [CLOSE TGT ES MODE] among six enlarging patterns. The higher the number the greater the amount of stretch. To disable echo stretch, select [OFF] (default).

The six enlarging patterns are shown in the table below, “Distance 1” means that the distance is closer to the own ship, and “Distance 3” means that the distance gets farther. “Distance 3” is about half of display range.

Setting (Effect level pattern)	Distance 1	Distance 2	Distance 3
[OFF]	—	—	—
[1]	weak	weak	—
[2]	weak	weak	weak
[3]	Medium	weak	—
[4]	Medium	weak	weak
[5]	Strong	Medium	weak

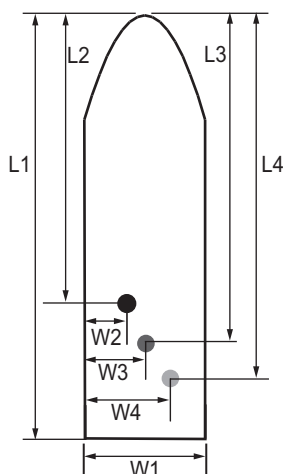
3.5.2 [OWN SHIP INFO] menu

Enter the length and width of the ship, and scanner, GPS antenna and conning positions, referring to the description and figure below.

Note: This radar uses [CONNING POSITION] for CCRP and [SCANNER POSITION] for ANT as reference points for measurements and calculations. The commissioning engineer should understand this point, and enter own ship information accordingly.

Open the main menu then select [RADAR INSTALLATION]→ [OWN SHIP INFO] to open the [OWN SHIP INFO] menu.

Example



- L1: Ship length
- W1: Ship width
- L2: Conning position (from bow)
- W2: Conning position (from port)
- L3: Scanner position (from bow)
- W3: Scanner position (from port)
- L4: GPS antenna position (from bow)
- W4: GPS antenna position (from port)

OWN SHIP INFO	
1	BACK
2	LENGTH/WIDTH
	LENGTH 0m
	WIDTH 0m
3	SCANNER POSITION
	BOW 0m
	PORT 0m
4	EPFS1 ANT POSITION
	BOW 0m
	PORT 0m
5	EPFS2 ANT POSITION
	BOW 0m
	PORT 0m
6	CONNING POSITION
	BOW 0m
	PORT 0m

[LENGTH/WIDTH]

Enter the ship's length and width (0 to 999, default: 0).

[SCANNER POSITION]

Enter the distance from the scanner to both bow and port (0 to 999, default: 0).

3. ADJUSTMENTS

[EPFS1(2) ANT POSITION]

Enter the distance from the GPS antenna to both bow and port (0 to 999, default: 0). If a 2nd GPS antenna is installed, enter its position in [EPFS2 ANT POSITION].

[CONNING POSITION]

Enter the distance from the conning position to both bow and port (0 to 999, default: 0).

3.5.3 **[SCANNER] menu**

Open the main menu then select [RADAR INSTALLATION]→[SCANNER] to open the [SCANNER] menu.

Note: [SCANNER] menu items differ depending on the software version, as shown in the figures to the right.

[SECTOR BLANK1(2)]

Set area(s) where to prevent transmission. Heading must be properly aligned (see section 3.2) before setting any blind sector.

For example, set the area where an interfering object at the rear of the antenna would produce a

dead sector (area where no echoes appear) on the display. To enter an area, enter start bearing relative to the heading and dead sector angle. To erase the area, enter 0 for both the [START] and [ANGLE] sections. The setting range of [START] is 0° to 359° (default: 000°) and [ANGLE] is 0° to 180° (default: 000°).

Note 1: Turn off a stern blind sector when adjusting the PM gain, to display the echo from the performance monitor properly.

Note 2: If the PM is active, these menus are **NOT** available on FAR-2258/2268DS radar.

[HSC]

Select [ON] for HSC only.

Note: This menu is **NOT** available when the [MODEL] setting is set to [50] or [60] (see "[MODEL]" on page 3-12).

SCANNER	
1	BACK
2	SECTOR BLANK1 START 000° ANGLE 000°
3	SECTOR BLANK2 START 000° ANGLE 000°
4	HSC OFF/ <u>ON</u>
5	ANTENNA ROTATION LO/HI/ <u>AUTO</u>
7	ANTENNA SWITCH OFF/ <u>ON</u> /EXT
8	ANT STOPPED <u>STBY</u> /TX
9	DUAL RADAR SETTINGS

For the radars
(software version "01.**")

SCANNER	
1	BACK
2	<u>SECTOR BLANK1</u> START 000° ANGLE 000°
3	SECTOR BLANK2 START 000° ANGLE 000°
4	HSC OFF/ <u>ON</u>
5	ANTENNA ROTATION LO/HI/ <u>AUTO</u>
7	ANTENNA SWITCH OFF/ <u>ON</u> /EXT
8	ANT STOPPED <u>STBY</u> /TX

For the radars
(software version "50.**")

[ANTENNA ROTATION]

This menu is available when [HSC] is set to [ON].

Note 1: When this menu appears in gray, it is not available. The antenna rotation speed is fixed at 24 rpm.

Note 2: For 42 rpm S-band radars, the High Speed Kit (type: OP03-248, available as an optional extra) is required.

Select [LO] for 36 rpm, [HI] for 42 rpm. [AUTO] sets the normal rotation speed to 36 rpm and switches the rotation speed to 42 rpm when the short pulse is selected (default: [AUTO]).

5 ANTENNA ROTATION
LO/HI/AUTO

[ANTENNA SWITCH]

Select [OFF] at [ANTENNA SWITCH] to prevent antenna rotation. For [EXT], set on/off from an external device (default: [ON]).

[ANT STOPPED]

For qualified technician. [ANT STOPPED] prevents transmission while the antenna is stopped in STBY (default: [STBY]).

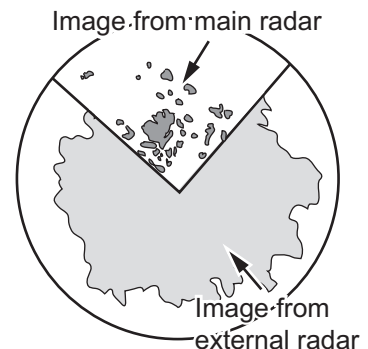
[DUAL RADAR SETTINGS]

When installing two FAR-2xx8 series radars, the image from both radars (main radar and external radar) may be shown together on one radar display.

Note 1: This function is NOT available between the FAR-2xx8 radar and other radars.

Note 2: This function is available only for A/B type radars installed with software version "01.**".

Note 3: When [COMBINE] is selected, some functions are unavailable. The following table shows the available menus in the [RADAR INSTALLATION] menu when [COMBINE] is selected. For menu operations, see the Operator's manual (OME-36520). The unavailable menus are displayed in gray.



[RADAR INSTALLATION] menu	Available menus
[ECHO ADJUSTMENT] [OWN SHIP INFO]	— (All menus are not available.)
[SCANNER]	[DUAL RADAR SETTINGS] except for [EXT RADAR]
[INSTALLATION]	[REMOTE MAINTENANCE], [SYSTEM MONITOR] and [ANT CABLE].
[TT PRESET]	— (All menus are not available.)
[BAUD RATE]	All menus are available.
[ALERT I/F SETTINGS] [INPUT PORT SETTINGS]	All menus are available.
[NETWORK SETTINGS]	[VDR SETTINGS], [RX SETTINGS]
[OTHER SETTINGS]	[OVERLAY1], [OVERLAY2], [EAV W/O GYRO], [ECDIS], [EXT BRILL CONTROL]

3. ADJUSTMENTS

- [DUAL RADAR]: Select [COMBINE] to enable the dual radar display. If the radars other than FAR-2xx8 series radars are on the network, select [OFF].

Note: When the [WAVE MODE] ([ECHO]→[WAVE MODE]) setting is [ON], this menu is displayed in gray and not operative.

- [COMBINE MODE]: Select the reference of the antenna position, own radar or external radar. [OWN]: Set own radar's antenna as the reference point and set display area of own radar. The area outside that set here is where the image from the external radar is displayed.

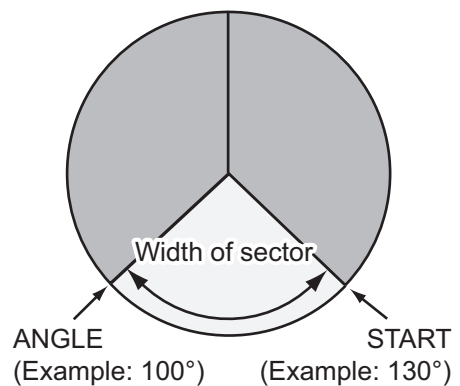
[EXT]: Set the external radar's antenna as the reference point and set the display area of the external radar. The area outside that set here is where the image from own radar is displayed.

DUAL RADAR SETTINGS	
1	BACK
2	DUAL RADAR OFF/ COMBINE
3	COMBINE MODE OWN/EXT
4	COMBINE SECTOR START 000° ANGLE 001°
5	COMBINE RANGE START 00.00NM LENGTH 00.01NM
6	EXT RADAR 1/2/3/4

- [COMBINE SECTOR]: Set the start position and angle of the sector, referring to the example to the right.

[START]: Start point of the sector (default: 000°, 000°to 359°)

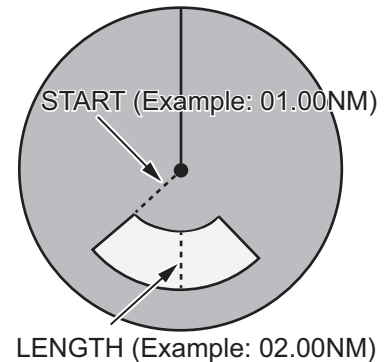
[ANGLE]: Horizontal width of the sector (default: 001°, 001°to 360°)



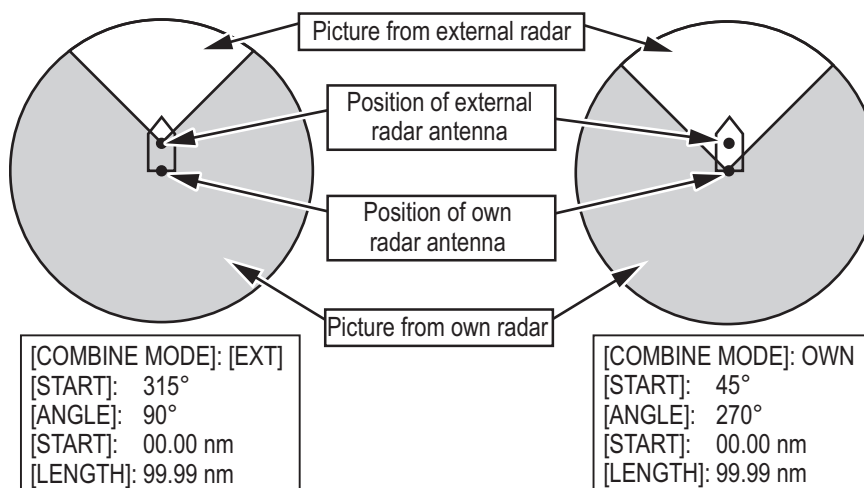
- [COMBINE RANGE]: Set the vertical width of sector.

[START]: Distance from reference point to sector (default: 00.00, 00.00 to 99.99)

[LENGTH]: Vertical length of sector (default: 00.01, 00.01 to 99.99)



The setting example is shown in the figure below.



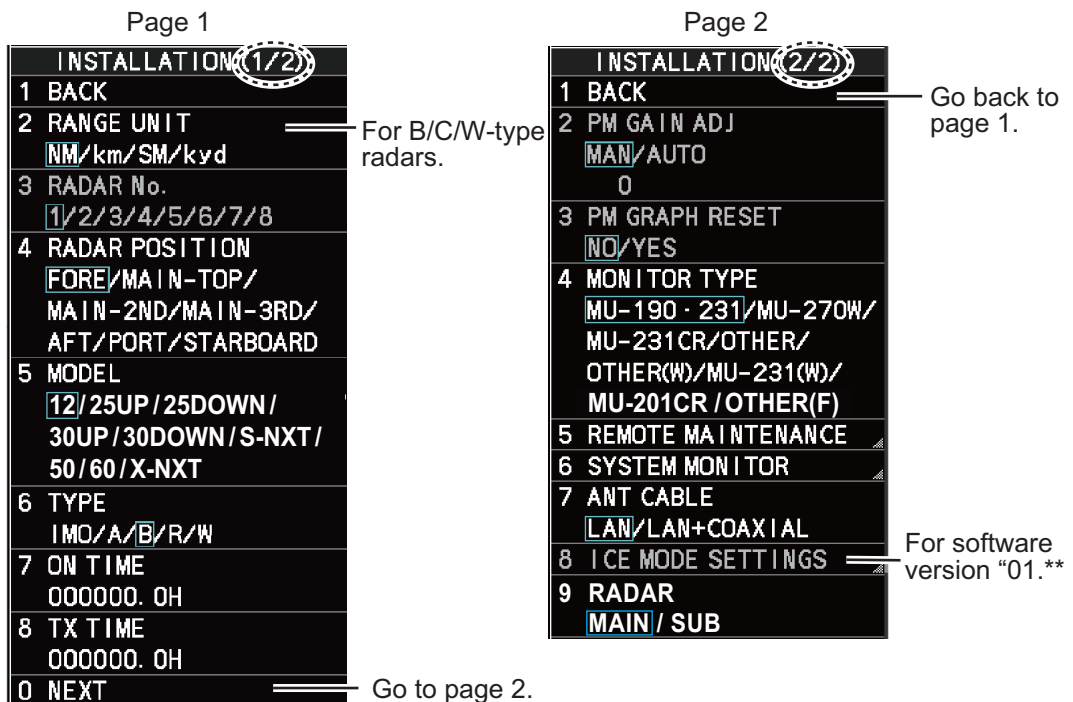
- [EXT RADAR]: Select the external radar for dual radar display. The available radar numbers are FAR-2xx8 series radars set on the [RADAR INSTALLATION] menu are valid.

Note 1: On dual radar display, this setting is not operative. To change this setting, first set [DUAL RADAR] to [OFF].

Note 2: The invalid radar numbers (Own radar, Other radars or radars not on the network) are displayed in gray.

3.5.4 [INSTALLATION] menu

Open the main menu then select [RADAR INSTALLATION]→ [INSTALLATION] to open the [INSTALLATION] menu through two pages. On the page 1, select [NEXT] to open the page 2.



[RANGE UNIT]

For B/C/W-type radars, select the range unit, [NM], [SM], [KM] or [kyd] then push the left button. For the all other radar types, the range unit is fixed at [NM] so this menu is not shown.

[RADAR No.]

For multiple radar system using the network hub, set number (name) and antenna position for each system to easily distinguish the radar configuration.

- [1] to [4]: For main radar
- [5] to [8]: For sub radar

[RADAR POSITION]

Select the radar position. The choices are [FORE],[MAIN-TOP], [MAIN-2ND], [MAIN-3RD], [AFT], [PORT], and [STARBOARD].

3. ADJUSTMENTS

[MODEL]

Confirm the model of your radar. This menu is set automatically according to the antenna other than FAR-2258/2268DS radars. For FAR-2258/2268DS radars, set the radar model properly. If this setting is different from your model, the radar will not function properly.

- [12]: For FAR-2218(-BB)/2318
- [25UP]: For FAR-2228(-BB)/2328
- [25DOWN]: For FAR-2328W
- [30UP]: For FAR-2238S(-BB)/2338S
- [30DOWN]: For FAR-2338SW
- [S-NXT]: For FAR-2238S-NXT(-BB)/2338S-NXT
- [50]: For FAR-2258
- [60]: For FAR-2268DS
- [X-NXT]: For FAR-2228-NXT(-BB)/2328-NXT

[TYPE]

Select the type of radar.

Type	Contents	Software version	
		01.**	50.**
[IMO]	IMO specifications	✓	✓
[A]	Near-IMO specifications	✓	—
[B]	Standard fishing specifications	✓	—
[C]	Advanced fishing specifications	—	✓
[R]	Russian specifications	✓	—
[W]	Washington Ferry specifications	✓	—

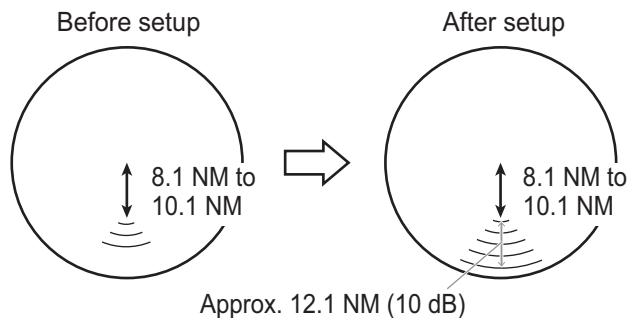
(✓: Available, —: Not available)

[ON TIME]. [TX TIME]

These items show the number of hours the radar has been turned on and transmitted, respectively. Value can be changed; for example, after replacing the magnetron. [TX TIME] can be reset to 0 for the magnetron radar. The setting range is [000000.0] to [999999.9] H (default: [000000.0]).

[PM GAIN ADJ]

Adjust the performance monitor, automatically or manually, whenever the magnetron is replaced. For automatic adjustment, no further operation is required; close the menu at the completion of the adjustment. For manual do as follows to adjust the performance monitor gain.



Ex: When [ARC] is set to [5]
(The location of arcs changes with the setting of [ARC] in [PERFORMANCE MON] in the [ECHO] menu.)

Note: This menu is **NOT** available when the [RADAR] setting is set to [SUB] for FAR-2258/2268DS (see "[RADAR]" on page 3-14).

Preset the radar as follows:

- Range: 24 NM
 - Pulse Length: Long
 - A/C SEA: OFF (turn off manually)
 - A/C RAIN: OFF (turn off manually)
 - Echo Averaging (EAV): OFF
 - Video Contrast: 2-B
1. Adjust the **GAIN** control so that a slight amount of white noise appears on the screen. Arcs for the performance monitor appear on the screen.
 2. Select [PM GAIN ADJ] then spin the scrollwheel so that the outer arc faintly appears. The setting range is 0 to 255 (default: 255). Wait at least eight scans then right click to set.

Note: Turn off a stern blind sector before adjusting the PM gain, to display the echo from the performance monitor properly.

[PM GRAPH RESET]

This menu is active only when the PM is connected to the Antenna Unit.

Select [YES] to reset all PM graphs, after replacing the magnetron.

Note 1: This menu is **NOT** available when the [RADAR] setting is set to [SUB] for FAR-2258/2268DS (see "[RADAR]" on page 3-14).

Note 2: After the PM graphs are reset, adjust the [PM GAIN ADJ] setting on the radar.

[MONITOR TYPE]

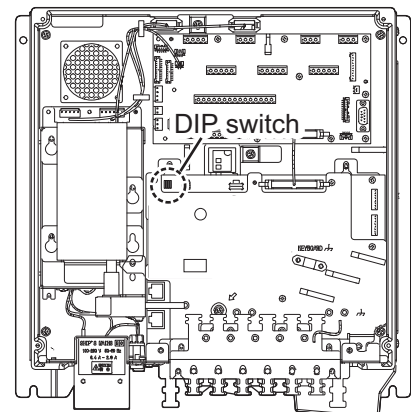
The monitor type is preset at factory according to the radar type. For BB type radar, [MU-190•231] is set in advance. For other wide monitor, select [OTHER(W)] (WUXGA) or [OTHER(F)] (Full HD). For MU-190HD, select [MU-190•231].

4 MONITOR TYPE
 MU-190 · 231/MU-270W/
 MU-231CR/OTHER/
 OTHER(W)/MU-231(W)/
 MU-201CR/OTHER(F)

Note 1: [MU-231(W)], [MU-201CR] and [OTHER(F)] are available only on the radars installed with software version "01.**"

Note 2: Select the monitor type correctly. If this menu is set to a wide monitor ([MU-270W], [OTHER(W)] or [MU-231(W)]) and no wide monitor is connected, the screen blacks out. In this case, set DIP switch SW2 to ON, in order to change the monitor type to MU-190/231.

Note 3: For A/B/C/W-type radars with Radar Plotter functionality, the [MU-231CR] setting is not used.



[REMOTE MAINTENANCE]

Adjust setting for remote maintenance.

[MAINTENANCE PROFILE]: Select [ON] to output the equipment profile for remote maintenance.

REMOTE MAINTENANCE
 1 BACK
 2 MAINTENANCE PROFILE
 OFF/ON

[SYSTEM MONITOR]

- [DISP SYSTEM MONITOR]: Shows the system monitor data through three pages. The following operations are enabled:

F1 key: Goes to next page. After the last page, the system monitor window is not shown.

F3 key: Saves the text data for the displayed page to an SD card.

F4 key: Saves the screen shot for the displayed page to an SD card.

- [SAVE LOG FILE]: Saves the error logs to an SD card.

SYSTEM MONITOR	
1	BACK
2	DISP SYSTEM MONITOR
3	SAVE LOG FILE

[ANT CABLE]

Select the method of connection between the radar sensor and the Processor Unit. [LAN] (LAN cable only) or [LAN+COAXIAL] (LAN and coaxial cables). Select [LAN+COAXIAL] when the optional LAN Signal Converter is installed.

7	ANT CABLE
	LAN/LAN+COAXIAL

[ICE MODE SETTINGS]

For the radars installed with software version *01.***. To activate this settings, the password is required. For the password, contact your dealer.

[RADAR]

Select radar from [MAIN] or [SUB] to activate the menu setting (default: [MAIN]).

Note: This menu is available only for the [MODEL] setting is set to [50] or [60] (see "[MODEL]" on page 3-12).

3.5.5 [TT PRESET] menu

Open the main menu then select [RADAR INSTALLATION]→ [TT PRESET] to open the [TT PRESET] menu.

TT PRESET	
1	BACK
2	TT DATA OUTPUT
3	MAX RANGE
	24NM/32NM/48NM
4	TT ECHO LEVEL
	00
5	QV DISPLAY
	OFF/ON
6	TT W/O GYRO
	OFF/ON
7	ACQ PRESET
8	TRACK PRESET
0	DEFAULT
	NO/YES

[TT DATA OUTPUT]

Show the [TT DATA OUTPUT] menu.

Note: Confirm the data input configuration for the equipment which will receive the TT (target tracking) sentence BEFORE setting this menu.

TT DATA OUTPUT	
1	BACK
2	SELECT SENTENCE
	OFF/TTM/TTD
3	TTM/TTD REFERENCE
	REL/TRUE

- [SELECT SENTENCE]: Select the sentence that is output the TT target data. (default: [TTM])
 [OFF]: For no output of the TT data.
 [TTM]: For connected equipment which can receive the TTM sentence.
 [TTD]: For connected equipment which can receive the TTD sentence.
- [TTM/TTD REFERENCE]: Set the output format for the tracked target's bearing (default: [REL]).
 [REL]: Outputs bearing and speed relative to own ship (default setting).
 [TRUE]: Outputs bearing to the north and speed over ground.

[MAX RANGE]

Select the maximum target tracking range, 24, 32 or 48 NM (default: [24NM]).

Note: [48NM] is available only for the [MODEL] setting is set to [50] or [60] (see "[MODEL]" on page 3-12).

[TT ECHO LEVEL]

Set the detection level of echoes. The setting range is 1 to 31 (default: 13).

[QV DISPLAY]

This function is used for diagnostic purposes.

- [OFF]: Normal picture (default)
- [ON]: Quantized video. Default setting is restored when the power is turned off.

[TT W/O GYRO]

Select [ON] to use TT without a gyro (default: [OFF]). If [OFF] is selected, TT can not used without gyro.

[ACQ PRESET]

Show the [ACQ PRESET] menu.

- [LAND SIZE]: Set the land size in units of 100 m. The setting range is 100 to 3000 m (default: 1600 m). A target whose length is equal to or greater than the length set here is judged as a land target.
- [ANT SELECT]: Set the antenna radiator type of your radar. The size of the echo changes with radiator size. Select the correct radiator type to ensure proper performance.
Note 1: [SN24CF] and [SN30CF] are **NOT** available on IMO-type radars.
Note 2: [XN24AF] and [XN30AF] are available only for the [MODEL] setting is set to [50] (see "[MODEL]" on page 3-12). [SN24AF], [SN30AF•DF] and [SN36AF] are available only for [60].
- [AUTO ACQ CORRE]: Set the correlation count of automatic acquisition. The setting range is [3] to [10] (default: [5]).
- [AUTO ACQ WEED]: Set the cancel count of automatic acquisition. The setting range is 1 to 5 scans (default: [1SCAN]).

ACQ PRESET	
1	BACK
2	LAND SIZE 0m
3	ANT SELECT XN12CF/XN20CF/ XN24CF/SN24CF/ SN30CF/SN36CF XN24AF/XN30AF SN24AF / SN30AF • DF / SN36AF
4	AUTO ACQ CORRE 0
5	AUTO ACQ WEED 0SCAN
7	TT NO. LOOP/FILL

3. ADJUSTMENTS

- [TT No.]: Select how to enter TT No, [LOOP] or [FILL] (default: [LOOP]).
Note 1: This menu is available on the radars installed with software version "50.**". For C-type radars, this menu is selectable. For IMO-type radars, this setting is fixed at [LOOP].
Note 2: This menu is not displayed on the radars installed with software version "01.**".

[TRACK PRESET]

- **[GATE SIZE]:** Set the gate size among [S], [M], [L] or [LL] (default: [M])
- **[FILTER RESPONSE]:** Set the filter response function. The setting range is 1 to 4.
 [1]: Filter response is improved (default).
 [4]: Filter stability is improved.
- **[LOST COUNT]:** Set the number of scans to allow before a target is declared a lost target. The setting range is 1 to 20 scans (default: [9SCAN]).
- **[MAX SPEED]:** Set the maximum tracking speed. The setting range is 40 to 150 kn (default: [150kn]).
- **[START TIME TGT VECT]:** Set the number of seconds or number of scans to wait before showing the vector for a newly acquired target. Select [TIME] or [SCAN] then enter value.
 [TIME]: The setting range is 0 to 100 sec (default [0sec]).
 [SCAN]: The setting range is 0 to 40 scans (default [0SCAN]).
- **[NUMBER OF TT]:** The setting [100] can not be changed.

TRACK PRESET	
1	BACK
2	GATE SIZE S/M/L/LL
3	FILTER RESPONSE 1/2/3/4
4	LOST COUNT OSCAN
5	MAX SPEED 0kn
6	START TIME TGT VECT TIME/SCAN 0sec OSCAN
7	NUMBER OF TT 100/MAX

[DEFAULT]

Select [YES] to restore the default settings for the [TT PRESET] menu.

3.5.6 [BAUD RATE] menu

Set the baud rate, 4800 or 38400 (bps), for connected equipment - heading sensor, AIS transponder, GPS navigator, Log, AMS, and ECDIS.

Note: For IMO-type radars, [HDG] and [AIS] is fixed to [38400].

BAUD RATE	
1	BACK
2	HDG 4800/38400
3	AIS 4800/38400
4	GPS 4800/38400
5	LOG 4800/38400
6	AMS 4800/38400
7	ECDIS 4800/38400

3.5.7 [ALERT I/F SETTINGS] menu

Four alert contact outputs are available, [ALERT OUT1] to [ALERT OUT4].

[ALERT OUT 1] to [ALERT OUT 4]

Select the alert to output for each alert out number through four pages. To monitor for unit failure if and when it occurs, set the alert contact outputs referring to the table below.

ALERT I/F SETTINGS	
1	BACK
2	ALERT OUT1
3	ALERT OUT2
4	ALERT OUT3
5	ALERT OUT4
6	ALERT DATA OUT ALR/ALF
7	AIS ALERT I/F OFF/LEGACY/IF1
8	LOG(BT) ALERT OFF/ON
9	LOG(WT) ALERT OFF/ON

Unit	Alert
Antenna Unit Transceiver Unit	<ul style="list-style-type: none"> • NO AZIMUTH SIGNAL • NO HEADLINE SIGNAL • NO TRIGGER SIGNAL • NO VIDEO SIGNAL • NO TUNE GATE SIGNAL • TUNE ERROR • RADAR SENSOR COM ERR • MTR-DRV COM ERROR • RF-CONVERTER COM ERR
Performance monitor	PM COM ERROR
Control Unit	CTRL UNIT COM ERR

Page 1

ALERT OUT (1/4)

1 BACK

2 ALERT OUT TYPE
ALERT OUT/ALERT ACK/
OPERATOR FITNESS

3 ALERT OUT POLARITY
NORMAL/INVERT

4

TRANSFER

TT NEW TARGET(A)

TT NEW TARGET(C)

TT TARGET LOST(A)

TT TARGET LOST(C)

TT COLLISION(A)

TT COLLISION(C)

TT TGT FULL(AUTO)(A)

TT TGT FULL(AUTO)(C)

TT TGT FULL(MAN)(A)

0 NEXT

Page 2

ALERT OUT (2/4)

1 BACK

2

TT TGT FULL(MAN)(C)

AIS NEW TARGET(A)

AIS NEW TARGET(C)

AIS TARGET LOST(A)

AIS TARGET LOST(C)

AIS COLLISION(A)

AIS COLLISION(C)

ACTIVE AIS FULL(A)

ACTIVE AIS FULL(C)

AIS DISPLAY FULL(A)

AIS DISPLAY FULL(C)

NO AZIMUTH SIGNAL

NO HEADLINE SIGNAL

NO TRIGGER SIGNAL

NO VIDEO SIGNAL

0 NEXT

Page 3

ALERT OUT (3/4)

1 BACK

2

CTRL UNIT COM ERROR

PM COM ERROR

TUNE ERROR

RADAR ANT COM ERROR

MTR-DRV COM ERROR

RF-CONVERTER COM ERR

NO GYRO SIGNAL

NO LOG(BT) SIGNAL

NO LOG(WT) SIGNAL

NO POSITION SIGNAL

NO COG/SOG SIGNAL

NO UTC SIGNAL

XTD LIMIT EXCEEDED

ECDIS COM ERROR

ARRIVED AT WPT

0 NEXT

Page 4

ALERT OUT (4/4)

1 BACK

2

OUT OF ANCHOR ZONE

RP COM ERROR

CHART MEMORY ERROR

DESTINATION LEAVE*

INTRUSION BAN*

WATER TEMP ALERT*

CURRENT RIP*

DEPTH ALERT*

TARGET ALARM*

AIS CAPACITY FULL(A)**

AIS CAPACITY FULL(C)**

NO TUNE GATE SIGNAL***

WAVE UNIT COM ERROR****

[NEXT]: Go to next page.

[BACK]: Go back to previous page.

Setting alert list

*: For C-type radars only

***: For FAR-2258/2268DS

** : For R-type radars only

****: For other than C-type radar

To monitor for Processor Unit failure, connect SYS_FAIL and PWR_FAIL from terminal J613 in the Processor Unit to the AMS.

- [ALERT OUT TYPE]: Select the alert out type.
- [ALERT OUT]: Alert out when the alert occurs (default).
- [ALERT ACK]: Alert out when the alert is acknowledged.
- [OPERATER FITNESS]: Alert out until the alert is acknowledged by the ACK operation.

3. ADJUSTMENTS

- [ALERT OUT POLARITY]: Select the alert out polarity, [NORMAL] (default) or [INVERT].

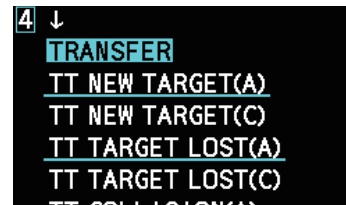
Note: For category A alert, there are two types of output operations, “A” and “C”. To inform the AMS of category A alerts via contact signal, connect both “A” and “C” signals.

(A): Alert sound is output when the corresponding item is an unacknowledged alert. Output is stopped when the item is acknowledged.

(C): Alert sound is output when the corresponding item becomes an alert condition. Output is stopped when the alert condition is removed. The table below shows the operational status of the alert outputs based on the output type.

Output type	Status			
	Normal	A new alert is occurred	An existing alert is acknowledge	An existing alert condition becomes non-active
A	Off	On	Off	Off
C	Off	On	On	Off

- [TRANSFER]: For category A alert, when the 60 seconds have passed under unsolved or unacknowledged condition after the alert occurs, transfer the alert to contact output for AMS. If the alert is removed or acknowledged, the contact output is inactive.
- Setting alert list: Select the alert to activate. The activated alerts are indicated with an underline. For example shown in the right figure, [TT NEW TARGET(A)] and [TT TARGET LOST(A)] are activated.



The available alerts are as follows:

- | | | |
|------------------------|------------------------|---------------------------|
| • TT NEW TARGET(A) | • AIS DISPLAY FULL(A) | • XTD LIMIT EXCEEDED |
| • TT NEW TARGET(C) | • AIS DISPLAY FULL(C) | • ECDIS COM ERROR |
| • TT TARGET LOST(A) | • NO AZIMUTH SIGNAL | • ARRIVED AT WPT |
| • TT TARGET LOST(C) | • NO HEADLINE SIGNAL | • OUT OF ANCHOR ZONE |
| • TT COLLISION(A) | • NO TRIGGER SIGNAL | • RP COM ERROR |
| • TT COLLISION(C) | • NO VIDEO SIGNAL | • CHART MEMORY ERROR |
| • TT TGT FULL(AUTO)(A) | • CTRL UNIT COM ERROR | • DESTINATION LEAVE* |
| • TT TGT FULL(AUTO)(C) | • PM COM ERROR | • INTRUSION BAN* |
| • TT TGT FULL(MAN)(A) | • TUNE ERROR | • WATER TEMP ALERT* |
| • TT TGT FULL(MAN)(C) | • RADAR ANT COM ERROR | • CURRENT RIP* |
| • AIS NEW TARGET(A) | • MTR-DRV COM ERROR | • DEPTH ALERT* |
| • AIS NEW TARGET(C) | • RF-CONVERTER COM ERR | • TARGET ALARM* |
| • AIS TARGET LOST(A) | • NO GYRO SIGNAL | • AIS CAPACITY FULL(A)** |
| • AIS TARGET LOST(C) | • NO LOG(BT) SIGNAL | • AIS CAPACITY FULL(C)** |
| • AIS COLLISION(A) | • NO LOG(WT) SIGNAL | • NO TUNE GATE SIGNAL*** |
| • AIS COLLISION(C) | • NO POSITION SIGNAL | • WAVE UNIT COM ERROR**** |
| • ACTIVE AIS FULL(A) | • NO COG/SOG SIGNAL | |
| • ACTIVE AIS FULL(C) | • NO UTC SIGNAL | |

*: For C-type radars

**: For R-type radars

***: For FAR-2258/2268DS

****: For other than C-type radars

ALERT DATA OUT

Select the alert output format, [ALR] (Set Alarm State) or [ALF] (Alert Sentence, default).

AIS ALERT I/F

Set the AIS alert interface.

[OFF] does not output AIS alerts (default).

[LEGACY]: For connection to FA-100, FA-150 or FA-170 where the AIS mode is [LEGACY].

[IF1]: For connection to FA-150 or FA-170 where the AMS mode is [AlertIF1].

LOG(BT) ALERT

Select [ON] to activate alert "NO LOG(BT) SIGNAL" for signal loss of speed over ground.

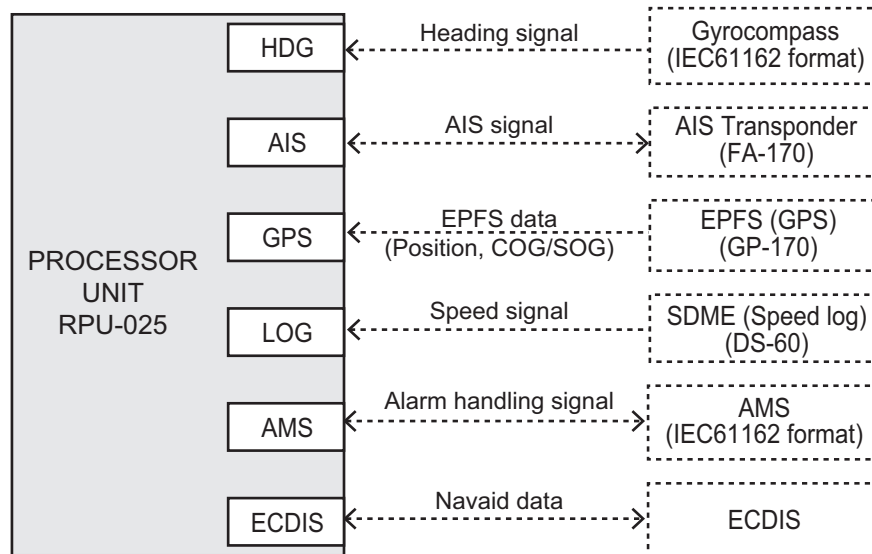
LOG(WT) ALERT

Select [ON] to activate alert "NO LOG(WT) SIGNAL" for signal loss of speed through water.

3.5.8 [INPUT PORT SETTINGS] menu

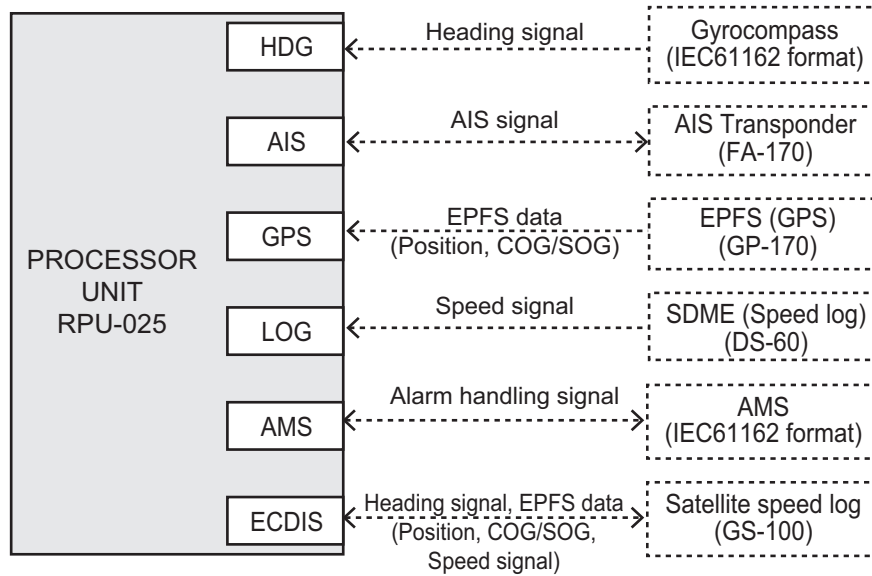
The input signals to the ports on the Processor Unit are shown below.

Default setting



Setting for multiple sensors

3. ADJUSTMENTS



The input signal setting for each port can be set in the [INPUT PORT SETTINGS] menu.

Open the main menu then select [RADAR INSTALLATION]→ [INPUT PORT SETTINGS] to open the [INPUT PORT SETTINGS] menu.

INPUT PORT SETTINGS	
1	BACK
2	EPFS
3	LOG
4	HEADING
5	AIS
6	WIND
7	CURRENT
8	WATER TEMP
9	DEPTH

How to set the port setting of each data;

1. Select the data for port setting in the [INPUT PORT SETTING] menu.
2. Select the port setting, [SERIAL] or [LAN2].
3. For serial port connections, select the source in [SERIAL SETTING].

Note: [AMS] is not available for IMO-type radars.
4. For LAN2 port connections, enter the connected equipment ID at [LAN2 SETTING] with the software keyboard.
5. To give the GLL sentence priority, set [PRIORITIZE GLL] to [ON].

Set the port setting of each data shown below according to the above procedure.

[EPFS]

The GPS navigator data has two ports to input the source data shown in the following figure. The GPS navigator is set to [EPFS1] and [EPFS2] ports in [EPFS]. For multiple signal input, set the ports as follows:

- [EPFS1 SERIAL SETTINGS]→ [GPS]
- [EPFS2 SERIAL SETTINGS]→ [ECDIS]

EPFS (1/2)		EPFS (2/2)	
1	BACK	1	BACK
2	EPFS1 PORT SETTING SERIAL/LAN2	2	EPFS1 INPUT DTM SEL. WGS-84/TOKYO
3	EPFS1 SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	3	EPFS2 INPUT DTM SEL. WGS-84/TOKYO
4	EPFS1 LAN2 SETTING GP0001		
5	EPFS2 PORT SETTING SERIAL/LAN2		
6	EPFS2 SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS		
7	EPFS2 LAN2 SETTING GP0002		
8	PRIORITIZE GLL OFF/ON		
0	NEXT		

Note: Do not set the same value for port1 and port 2. For example, where [EPFS1] is set as [GPS], [EPFS2] must be set to other than [GPS].

- [PRIORITIZE GLL]: Select [ON] to give priority to GLL data.
- [EPFS1(2) INPUT DTM SEL.]: For C-type radars, select the datum for sensor data input.

[LOG]. [HEADING]

The speed data and heading data have two ports to input the source data shown in the following figure.

LOG		HEADING	
1	BACK	1	BACK
2	LOG1 PORT SETTING SERIAL/LAN2	2	GYRO1 PORT SETTING SERIAL/LAN2/AD-10
3	LOG1 SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	3	GYRO1 SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS
4	LOG1 LAN2 SETTING VD0001	4	GYRO1 LAN2 SETTING HE0001
5	LOG2 PORT SETTING SERIAL/LAN2	5	GYRO2 PORT SETTING SERIAL/LAN2/AD-10
6	LOG2 SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	6	GYRO2 SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS
7	LOG2 LAN2 SETTING VD0002	7	GYRO2 LAN2 SETTING HE0002

For speed data

For heading data

- **Speed data:** [LOG1] and [LOG2] ports in [LOG].
For multiple signal input, set the ports as follows:
[LOG1 SERIAL SETTINGS]→ [LOG]
[LOG2 SERIAL SETTINGS]→ [ECDIS]
- **Heading data:** [HDG1] and [HDG2] ports in [HEADING]
For multiple signal input, set the ports as follows:
[GYRO1 SERIAL SETTINGS]→ [HDG]
[GYRO2 SERIAL SETTINGS]→ [ECDIS]

Note: Do not set the same value for port1 and port 2. For example, where [LOG1] is set as [LOG], [LOG2] must be set to other than [LOG].

3. ADJUSTMENTS

[AIS], [WIND], [CURRENT], [WATER TEMP], [DEPTH]

Select the input source for each data type; AIS, wind data, current data, water temperature and depth data. These data have only one input port.

<table border="1"> <thead> <tr> <th colspan="2">AIS</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BACK</td> </tr> <tr> <td>2</td> <td>AIS PORT SETTING SERIAL/LAN2</td> </tr> <tr> <td>3</td> <td>AIS LAN2 SETTING AI0001</td> </tr> </tbody> </table> <p style="text-align: center;">For AIS</p>	AIS		1	BACK	2	AIS PORT SETTING SERIAL/LAN2	3	AIS LAN2 SETTING AI0001	<table border="1"> <thead> <tr> <th colspan="2">WIND</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BACK</td> </tr> <tr> <td>2</td> <td>WIND PORT SETTING SERIAL/LAN2</td> </tr> <tr> <td>3</td> <td>WIND SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS</td> </tr> <tr> <td>4</td> <td>WIND LAN2 SETTING WI0001</td> </tr> </tbody> </table> <p style="text-align: center;">For wind data</p>	WIND		1	BACK	2	WIND PORT SETTING SERIAL/LAN2	3	WIND SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	4	WIND LAN2 SETTING WI0001	<table border="1"> <thead> <tr> <th colspan="2">CURRENT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BACK</td> </tr> <tr> <td>2</td> <td>CUR PORT SETTING SERIAL/LAN2</td> </tr> <tr> <td>3</td> <td>CUR SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS</td> </tr> <tr> <td>4</td> <td>CUR LAN2 SETTING VW0001</td> </tr> </tbody> </table> <p style="text-align: center;">For current data</p>	CURRENT		1	BACK	2	CUR PORT SETTING SERIAL/LAN2	3	CUR SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	4	CUR LAN2 SETTING VW0001
AIS																														
1	BACK																													
2	AIS PORT SETTING SERIAL/LAN2																													
3	AIS LAN2 SETTING AI0001																													
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3	CUR SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS																													
4	CUR LAN2 SETTING VW0001																													
<table border="1"> <thead> <tr> <th colspan="2">WATER TEMP</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BACK</td> </tr> <tr> <td>2</td> <td>TEMP PORT SETTING SERIAL/LAN2</td> </tr> <tr> <td>3</td> <td>TEMP SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS</td> </tr> <tr> <td>4</td> <td>TEMP LAN2 SETTING II0051</td> </tr> </tbody> </table> <p style="text-align: center;">For water temperature</p>	WATER TEMP		1	BACK	2	TEMP PORT SETTING SERIAL/LAN2	3	TEMP SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	4	TEMP LAN2 SETTING II0051	<table border="1"> <thead> <tr> <th colspan="2">DEPTH</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BACK</td> </tr> <tr> <td>2</td> <td>DPT PORT SETTING SERIAL/LAN2</td> </tr> <tr> <td>3</td> <td>DPT SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS</td> </tr> <tr> <td>4</td> <td>DPT LAN2 SETTING SD0001</td> </tr> </tbody> </table> <p style="text-align: center;">For depth data</p>	DEPTH		1	BACK	2	DPT PORT SETTING SERIAL/LAN2	3	DPT SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS	4	DPT LAN2 SETTING SD0001									
WATER TEMP																														
1	BACK																													
2	TEMP PORT SETTING SERIAL/LAN2																													
3	TEMP SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS																													
4	TEMP LAN2 SETTING II0051																													
DEPTH																														
1	BACK																													
2	DPT PORT SETTING SERIAL/LAN2																													
3	DPT SERIAL SETTING GPS/LOG/ECDIS/HDG/ AMS																													
4	DPT LAN2 SETTING SD0001																													

3.5.9 [NET WORK SETTINGS] menu

Open the main menu then select [RADAR INSTALLATION]→[NEXT]→[NETWORK SETTINGS] to open the [NETWORK SETTINGS] menu.

Note 1: Network settings should be done while the radar is disconnected from the LAN network, as a stand-alone radar.

Note 2: The system restarts automatically after the network settings are changed.

Note 3: When you change the radar number, this equipment restarts automatically. After restarting, confirm the IP address in [NETWORK SETTINGS].

NETWORK SETTINGS	
1	BACK
2	LAN1-3 IP ADDRESS CLASS: B/C LAN1-3:192.168.025.025 SCAN:192.168.031.101 RP: 192.168.031.121
3	LAN2 IP ADDRESS 172.031.016.021
4	MULTICAST ADDRESS 239.192.000.002
5	VDR SETTINGS
6	RX SETTINGS

[LAN1-3 IP ADDRESS]

For multiple radar systems using the network hub, the IP address is assigned according to the radar No (See "[RADAR No.]" on page 3-11). Set the IP address as shown in the following table. For C-type and A/B-type radars with Radar Plotter functionality, a dedicated IP address is assigned.

Also, select the network type, CLASS C or B. When FAR-2xx8 radar is connected to FEA-2xx7 series (ECDIS), set CLASS B.

Note: Do not set an IP address other than the address that corresponds to your radar number and class in the following table.

CLASS C			CLASS B		
Radar No.	LAN1	LAN3	Radar No.	LAN1	LAN3
No.1	192.168.31.21 (192.168.31.121*)	192.168.31.101	No.1	172.31.3.35 (172.31.3.43*)	172.31.3.6
No.2	192.168.31.22 (192.168.31.122*)	192.168.31.102	No.2	172.31.3.36 (172.31.3.44*)	172.31.3.7
No.3	192.168.31.23 (192.168.31.123*)	192.168.31.103	No.3	172.31.3.37 (172.31.3.45*)	172.31.3.8
No.4	192.168.31.24 (192.168.31.124*)	192.168.31.104	No.4	172.31.3.38 (172.31.3.46*)	172.31.3.9
No.5	192.168.31.25 (192.168.31.125*)	—	No.5	172.31.3.39 (172.31.3.47*)	—
No.6	192.168.31.26 (192.168.31.126*)	—	No.6	172.31.3.40 (172.31.3.48*)	—
No.7	192.168.31.27 (192.168.31.127*)	—	No.7	172.31.3.41 (172.31.3.49*)	—
No.8	192.168.31.28 (192.168.31.128*)	—	No.8	172.31.3.42 (172.31.3.50*)	—

*: For C-type and A/B-type radars with Radar Plotter functionality

[LAN2 IP ADDRESS]

The IP address is assigned according to the radar No (See "[RADAR No.]" on page 3-11). Set the IP address as shown below. This IP address can be changed as required.

Radar No.	LAN2	SFID
No.1	172.31.16.11	RA0011
No.2	172.31.17.11	RA0012
No.3	172.31.16.12	RA0013
No.4	172.31.17.12	RA0014
No.5	172.31.16.13	RA0015
No.6	172.31.17.13	RA0016
No.7	172.31.16.14	RA0017
No.8	172.31.17.14	RA0018

[MULTICAST ADDRESS]

Set the multicast address with the cursor and the keypad.

[VDR SETTINGS]

Note: This menu is **NOT** available for C-type radars.

- [VDR LAN OUTPUT]: Select [ON] to output the VDR signal through LAN connection.
For [ON], set the multicast port with the software keyboard.
- [SOURCE]: Set the status and information text, max 16 characters with the software keyboard (Example: "Xband.1").
- [LOCATION]: Set the status and information text, max 32 characters with the software keyboard (Example: "No1").

VDR SETTINGS	
1	BACK
2	VDR LAN OUTPUT OFF/ON 60026
3	SOURCE
4	LOCATION
5	SFI VR0001

3. ADJUSTMENTS

- [SFI]: Set the SFI. The talker of the device is alphanumeric, two characters followed by four numerals.

The device and channel information to be transmitted to VDR are shown below.

Radar No.	Device	Channel	Radar No.	Device	Channel
No.1	75	1	No.5	79	1
No.2	76	1	No.6	80	1
No.3	77	1	No.7	81	1
No.4	78	1	No.8	82	1

[RX SETTINGS]

Select [ON] to receive the following data signals:

- [MISC]: Other equipment data (sensor of engine etc.)
- [TGTD]: Target data
- [SATD]: Satellite data
- [NAVD]: Navigation data
- [TIME]: Time
- [PROP]: Specified data by manufacturer or user

RX SETTINGS	
1	BACK
2	MISC OFF/ON
3	TGTD OFF/ON
4	SATD OFF/ON
5	NAVD OFF/ON
6	TIME OFF/ON
7	PROP OFF/ON

3.5.10 **[OTHER SETTINGS] menu**

Open the main menu then select [RADAR INSTALLATION]→[NEXT]→[OTHER SETTINGS] to open the [OTHER SETTINGS] menu through two pages. On the page 1, select NEXT to open the page 2..

Page 1

Page 2

[DEMO ECHO]

Select the type of simulated echo to use. [EG-3000] (Echo Generator), [TT-TEST], [PC] or [EG-4000]. Select [OFF] to deactivate this feature (default: [OFF]).