# **INSTRUCTION MANUAL**

# SETTING AND ADJUSTMENTS

Model FMD-3100

This manual is solely for use by the installer. Under no circumstances shall this manual be released to the user.

The installer shall remove this manual from the vessel after installation.

This manual contains no password data. Obtain password data from FURUNO before beginning the installation.



www.furuno.com

FURUNO ELECTRIC CO., LTD.

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# INTRODUCTION

This manual explains the set up procedures after installing the FMD-3100.

After the software setup is completed, make a backup copy of the configuration data on a removable medium (USB memory, PC, etc.).

#### Items to prepare

- PC
- LAN cable

#### Trademarks and copyrights

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#### Silent mode

When the vessel is moored and normal functions are not required, you may set the equipment to silent mode.

Note: Alerts and buzzers will not function during the silent mode.

To enable the silent mode:

1. Click the [OTHERS] button on the Status bar then click [SILENT]. You are prompted for a password.



2. Enter "3000", then click the [OK] button. The following pop-up window appears.



Click to return to normal operation.

3. To return to normal operation, click the [Back to Normal Mode] button in the pop-up window shown above.

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# 1. INITIAL SETTINGS AND ADJUSTMENTS

This chapter covers the initial settings and adjustments to be applied after installation of the FMD-3100 is completed.

**Note 1:** Each unit of the FMD-3100 has a default IP address. Before connecting each unit and building the network, enter the initial settings (Equipment IDs) and change the IP address from the [Basic Setting] menu (see section 1.2). After entering the equipment IDs, connect each unit and build the network. Enter each unit's settings as you connect them, or complete building the network and enter all equipment settings at one time.

**Note 2:** To ensure the security of the FURUNO network, be sure to connect with non-FURUNO networks via the service gateway (tBOX810-83A-FL).

# 1.1 Accessing the [Common Installation Setting] Menu

All initial settings for the FMD-3100 and its units are performed using the [Common Installation Setting] menu. This menu works within a web browser.

Access the [Common Installation Setting] menu using one of the two methods below:

- Access via laptop PC using a LAN connection (see section 1.1.1.)
- Access via the Trackball Control Unit RCU-030 (see section 1.1.2.)

Note 1: The following browsers are compatible with this software.

- Internet Explorer<sup>®</sup>11
- Firefox ESR 68

**Note 2:** To update the software with the updating file (see section 1.12), access the [Common Installation Setting] menu via LAN connection. To update the software with the DVD, access the [Common Installation Setting] menu with the control unit.

**Note 3:** The [Alert Define List] menu is not accessible from the Internet Explorer<sup>®</sup> when the MC-3000S is connected directly to the processor unit. Connect the MC-3000S via the PCU-3000, or use Firefox.

### 1.1.1 Laptop PC (LAN connection) access

1. Set the IP address and subnet mask of the PC according to the LAN port where the PC is connected, referring to the table below:

LAN port	IP address/Subnet mask	Setting
LAN1	IP Address	192.168.31.200
(Gateway network)	Subnet mask	255.255.255.0
LAN2	IP Address	172.31.16.200
(Sensor network)	Subnet mask	255.255.0.0

#### 1. INITIAL SETTINGS AND ADJUSTMENTS

- Connect the PC to LAN port 1 or 2 with a LAN cable.
   Note: It is possible to connect to LAN1 or LAN2 using a LAN hub. In order to operate from the [Basic Setting] menu, however, turn all units off, except the unit to be set up. Enter settings for all other units in this manner.
- 3. Open a web browser on the laptop PC.
- 4. Enter the appropriate IP address in the browser's address bar, referring to the table below.

	Access point	IP Address
For initial setting	Gateway Network	192.168.31.1
i or initial setting	Sensor Network	172.31.16.1
For re-setting the unit Gateway Netw		Enter the IP address of the gateway
	Sensor Network	or sensor network according to the Equipment ID used in the system. See the Equipment ID list at the back of this manual.

When entering the IP address on the address bar, you are asked to enter ID and password.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
Basic Setting		_				
Peripherals	Enter ID/	Pass				
<u>VDR</u>	ID:					
Route Transfer	Pass:					
Application						
<u>Ship Name</u>			Login			
ECDIS / Radar	User cu	rently logged in - Read / \	Write: 0			
<u>Language</u>		Read	only: 0			

5. Enter ID and password, then click [Login] to access the [Common Installation Setting] menu.

#### 1.1.2 Trackball Control Unit (RCU-030) access

1. Click the [ 🔊 ] icon on the Status bar, then select [Settings]. The pop-up message shown below appears.



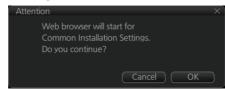
2. Click [OK] to show the [Settings] menu.

have one installed.

3. Click [SERVICE MODE] on the Status bar, then select [Service Login]. A dialog box for password entry appears.

EnterPessword		×
Passworc:		
	Cared	06

 Use the software keyboard to enter the password and click [OK]. "Service Mode" is now displayed at the bottom left of the Settings window.
 Note: You can use the optional hardware keyboard to enter the password if you 5. Click [SERVICE MODE] on the Status bar, then select [Common Installation Settings]. The message shown below appears.



6. Click [OK] to activate the web browser and show the dialog box asking for ID and password.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
Basic Setting						
Peripherals	Enter ID/f	'ass				
VDR	ID:					
Route Transfer	Pass:					
Application						
<u>Ship Name</u>			Login			
ECDIS / Radar	User cur	rently logged in - Read / V	Write: O			
Language		Read	only:0			

7. Enter the ID and password, then click [Login] to access the [Common Installation Setting] menu.

#### 1.1.3 Common installation setting menu contents

Tab bar —	Basic Setting Own Ship S	Setting ECD001 - Read/Write Use Setting Installation Parameters Basic Setting	r CCRS TC		<ul> <li>Click here to close and logout from the</li> </ul>
	Peripherals	Processor	·Unit		[Common Installation
:	VDR	Equipment ID	ECD001	1	-
	Route Transfer	Equipment Name	No.1 ECDIS		Setting] menu.
1	Application	Equipment Type No.	FMD-3100	, ,	
	Ship Name	Subsystem		•	
	ECDIS / Radar	IP Address Gateway Network	172         31         16         1           192         166         31         1	8 1 1	
M	Language	Serial No.		, ,	
Menu bar* —		Radar Sens	or Unit	1 1 1	<sup>—</sup> View area
		Equipment ID		•	view alea
		Equipment Name		•	
		Equipment Type No.	RPU-013		
		Antenna Position		1	
		IP Address		i i i i i i i i i i i i i i i i i i i	
		Serial No.		1	
			Last Save:07:11 20 May 2019	Discard Changes Save	– Info bar
	*: Solootod itom	ie highlighted i	n hluo	,	

\*: Selected item is highlighted in blue.

Click [Exit] to close and logout from the [Common Installation Setting] menu. You can close and logout by clicking in the web browser. However the menu can not be reaccessed for a while.

The selected tab is highlighted in blue on the tab bar. The view area and menu bar change according to the tab selected.

Click [ (or )] at the tab bar to shift the tab to the left (or right).

**Note:** If the tab bar does not move when clicking either [ (or )], clear the browser cache.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
	1					
Click	▶.		T	Click 💽 .		
Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	Alert Define List	

Tab bar menu item	Description
[Basic setting]	Sets the equipment ID, monitor, printer and own ship information.
[Own Ship Setting]	Enters the ship's parameters and sensor positions.
[Installation parameters]	Sets the system configuration and input/output data.
[CCRS]	Sets the priority of the sensors and NMEA sentences.
[TCS]	Sets route output-related settings.
[AMS]	Sets the AMS and relevant settings.
[Alert Define List]	Sets the alerts.
[Data Sharing]*	Sets the interlocking system between units.
[Save and Sync]	Saves and synchronizes the settings. Settings can also be
	saved to a removable medium.
[System Monitor]	Confirms the system condition.
[Software Update]	Updates the software.
[Factory Test and Default]	Performs the factory test or restores default settings.
[Conning]	Configures the mini-conning display.

\*: Does not require adjustment.

# 1.2 [Basic Setting] Menu

### 1.2.1 [Basic Setting] window

1. Access the [Common Installation Setting] menu, then click [Basic Setting] on the tab bar.

Basic Setting	Own Ship Setting Installation Parameters		CCRS	TCS	AMS		
Basic Setting		Basic Setting	3				
Peripherals			Proces	sor Unit			
<u>VDR</u>		E	quipment ID	ECD001			
Route Transfer		Equ	ipment Name	No.1 ECDIS			
Application		Equip	ment Type No.	FMD-3100			
<u>Ship Name</u>		5	Subsystem				
ECDIS / Radar		IP Address	Sensor Network		16 . 1		
Language			Gateway Networ	192 . 168 .	31 . 1		
			Serial No.	-			
		Radar Sensor Unit					
		Equipment ID					
		Equipment Name					
		Equipment Type No.		RPU-013			
		Antenna Position					
		l I	P Address	· · · · · · · · · · · · · · · · · · ·			
		Serial No.					
				Last Save:07:11 20 N	vlay 2019 Discard C	hanges Sav	/e

2. Select the [Equipment ID] from the drop-down list (setting range: [ECD001] to [ECD016]).

The [Equipment Name], [Equipment Type No.], and [IP Address] are automatically entered according to the Equipment ID. For details, see the Equipment ID list at the back of this manual.

Note 1: For the first ECDIS, set [Equipment ID] to "ECD001".

Note 2: Assign a different [Equipment ID] to each unit in the network.

**Note 3:** [Serial No.] is entered before shipment. If you change the SSD or delete [Serial No.] by mistake, click the [Serial No.] box to enter the serial number of the PCU (example: xxxx-xxxx).

- 3. Confirm that [FMD-3100] is shown for [Equipment Type No.]. If not, select [FMD-3100] from the [Equipment Type No.] drop-down menu.
- 4. Click [Save] on the info bar. Several confirmation messages appear. Click [OK] to reboot the system. To discard all changes, click [Discard Changes].

#### 1.2.2 [Peripherals] window

1. Access the [Common Installation Setting] menu and click [Basic Setting] on the tab bar.

Basic Setting	Own Ship Setting	Installation Pa	rameters	CCRS		TCS	AMS	; <b>(</b>		
Basic Setting	Periph	Peripherals Setting								
Peripherals			Monitor			Service Gateway			1	
<u>VDR</u>	DVI1	Type Number	HD 24T21MM	D (FHD)	1 0	onnection	Connected			
<u>Route Transfer</u>	51/0	Type Number	Not Connected	d (NONE)	1 F	Address	172 . 31	. 16 . 254	h.	
Application	DVI3	Output Mode	Independent	×	Po	rt Number	28001		};	
<u>Ship Name</u>			Printer							
ECDIS / Radar	Pr	inter Model	HP Officejet P	ro 8000 🔽	1					
<u>Language</u>	F	rinter Port	USB	M	1					
	Auto	Print Out (SS)								
		Monitor Color Calibration		7						
	DVI1	Run								
	Brill Co	ntrol (Hatteland)	) Run							
		Cha	art Service		7					
		Connection	FURUNO	×	1					
		P Address	192 . 168	. 31 . 254						
				ast Save:07:11	20 May 201	9 Discard	I Changes	Save		

2. Click [Peripherals] on the menu bar.

- \*: Shown when [Connected] is selected in [Connection] of [Service Gateway].
  - 3. Confirm that the menu items for [Monitor] are entered as follows.

[DVI1]	[Type Number]:	[HD 24T21MMD (FHD)]
[DVI3]	[Type Number]:	[Not Connected (NONE)]
	[Output Mode]:	[Independent]

4. Click the [Run] button for [Monitor Color Calibration] to perform the color calibration.

"Processing" appears at the next to the [Run] button during the color calibration. After completing the calibration, check result appears ([Succeeded] or [Failed]). When the check result is [Succeeded], the following confirmation message appears. Click the [OK] button to reboot the system and apply the calibration setting. When the check result is [Failed], retry the color calibration. If the error is not rectified, contact your dealer.

Questi	on
?	Calibration setting becomes effective after reboot. Reboot now ?
	Cancel OK

**Note:** Be sure to perform the color calibration. If the calibration is not performed, you cannot adjust the monitor brilliance.

- 5. Access the [Common Installation Setting] menu and open the [Peripherals] window again.
- 6. Select the Printer type from the [Printer Model] drop-down menu.

Setting option	Remarks
[HP Officejet Pro 8000]	Connect the printer to LAN1 port or USB port, and then set
[HP Officejet Pro 8100]	the IP address of the printer to "192.168.31.241". For how to
[HP Officejet Pro 8210]	set the IP address of the printer, see the operator's manual of the printer.
[HP Officejet 100 Mobile]	Connect the printer to the USB port of the processor unit.
[HP Officejet 200 Mobile]	

Note 1: For no printer, set [Printer Mode] to [HP Officejet 100 Mobile].

**Note 2:** The printer HP Officejet Pro 8000 Enterprise Printer can not be connected to the PCU.

7. Select the port to which the printer is connected from the [Printer Port] drop-down menu.

Printer	Printer Port
HP Officejet 100 Mobile/HP Officejet 200 Mobile/ Not Connected	[USB]
HP Officejet Pro 8000/HP Officejet Pro 8100/ HP Officejet Pro 8210	[USB], [Network]

- [USB]: Only the FMD-3100 connected to the printer can print.
- [Network]: FMD-3100s in the same network can print. The IP address of the printer is shown on the [Printer] screen. Do not change the IP address.



- 8. To automatically print images captured with [Screenshot] function, check the checkbox for [Auto Print out (SS)].
- 9. Select the chart data storage equipment from the [Connection] pull-down list in the [Chart Service] field. The IP address is automatically displayed. For [FURUNO] or [NAVTOR], do not change the IP address setting.
  - [Not Connected]: Not connected to chart data storage equipment.
  - [FURUNO]: Connected to the FURUNO Gate-1.
  - [NAVTOR]: Connected to the NAVTOR NavBox.
  - [NeCST]: Not used.
  - [Cornes]: Connected to the ConnectNAS (Its IP address should be 192.168.31.231).
- 10. To connect a service gateway to the PCU-3000, select [Connected] at [Service gateway] then the IP address and the port number appear below the [Connected] item. Do not change these settings.
- 11. Click [Save] on the info bar. Several confirmation messages appear. Click [OK] to reboot the system. To discard all changes, click [Discard Changes].

#### 1.2.3 [VDR] window

- 1. Access the [Common Installation Setting] menu and click [Basic Setting] on the tab bar.
- 2. Click [VDR] on the menu bar.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
Basic Setting	VDR S	etting				
Peripherals		VDR				
VDR		Connection Co	nnected			
Route Transfer		Monitor	🗹 DVI1 🔳 DVI3			
Application	Tra	ansmit per 15 sec.	Once ●Twice			
Ship Name	Т		i MBytes / sec			
ECDIS / Radar		Image Format				
Language		JPEG Quality	40			
		Network Se	nsor Network			
	Tra	ansmission Timing		<b>_</b>		
		Destination 23	9.192.0.26:60026	$\mathbf{\overline{\mathbf{v}}}$		
		Source -				
		Location -				
	Initial V	/alue of Sequence No. 📘				
			Last Save:07:11 20 N	May 2019 Discard Cl	hanges Sav	e

3. If a VDR is connected, select [Connected] from the [Connection] pull-down list. Refer to the table below to set the items in the menu.

Menu item/ interactive field	Description
[Monitor]	Select the DVI port connected with the VDR.
[Transmit per 15 sec.]	Set the number of transmissions in 15 seconds.
[Transmission Rate]	Set the transmitting rate.
[Image Format]	Set the image format.
[JPEG Quality]	Set the quality of JPEG data. (Available when [JPEG] is selected for [Image Format].)
[Network]	Select the network connected with the VDR
[Transmission Timing]	Set the delay timing.
[Destination]	Set the IP address and port of the destination.
[Source]	Set the status and information text, max. 16 characters.
[Location]	Set the status and information text, max. 32 characters.
[Initial Value of Se- quence No.]	Set the initial value for the binary transmission se- quence number (IEC61162-450 compliant) to be used when transmitting video to a VDR.

4. Click [Save] on the info bar. Several confirmation messages appear. Click [OK] to reboot the system. To discard all changes, click [Discard Changes].

#### 1.2.4 [Route Transfer] window

- 1. Access the [Common Installation Setting] menu and click [Basic Setting] on the tab bar.
- 2. Click [Route Transfer] on the menu bar.

Basic Setting	Own Ship Setting	Installation Parameter	s CCRS	TCS	AMS	
Basic Setting	Route	Transfer Setting				
Peripherals		Route Tr	ansfer			
VDR		Connection	Connected			
Route Transfer	Tr	ansmission Rate	).6 MBytes / sec			
Application		Network 📑	Sensor Network			
Ship Name		Destination	39.192.0.25:60025			
ECDIS / Radar	Initial V	alue of Sequence No. 📔				
<u>Language</u>						

3. To transfer data to a specified network, select [Connected] from the [Connection] pull-down list.

Menu item	Description
[Connection]	Select [Connected] to transfer the data.
[Transmission Rate]	Set the transmission rate.
[Network]	Select the destination network for route data.
[Destination]	Set the IP address and port of the destination.
[Initial Value of Sequence No.]	Set the initial value for the binary transmission sequence number (IEC61162-450 compliant) to be used when transferring route data to a de- vice(s) connected to the LAN.

4. Click [Save] on the info bar. Several confirmation messages appear. Click [OK] to reboot the system. To discard all changes, click [Discard Changes].

### **1.2.5** [Application] window (setting is not required)

Do not change the setting on the [Application] window of the [Basic Setting] menu. Confirm that [Primary] is set to [ECDIS], if the setting is not [ECDIS], change it to [EC-DIS].

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS			
Basic Setting	Applica	Application Setting						
Peripherals		Applic	ations					
VDR		Primary	ECDIS	$\overline{\mathbf{\nabla}}$				
Route Transfer								
Application								
Ship Name								
ECDIS / Radar								
Language								

#### 1.2.6 [Ship Name] window

1. Access the [Common Installation Setting] menu and click [Basic Setting] on the tab bar.

2. Click [Ship Name] on the menu bar.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
Basic Setting	Ship N	ame Setting				
Peripherals		Ship Ide	ntification			
VDR		Ship Name	-			
Route Transfer		Call Sign	-			
Application		IMO No.	-			
Ship Name		MMSI	_			
ECDIS / Radar						
Language						

3. Enter your ship information. The data entered here is included in any printing.
[Ship Name]: Own ship's name.
[IMO No.]: Own ship's IMO no.
[MMSI]: Own ship's ID

**Note:** The FMD-3100 can display own ship's data input from AIS, on the [Own Ship] page in the [Nav Status] menu. The data entered here is not reflected to the AIS data.

4. Click [Save] on the info bar. Several confirmation messages appear. Click [OK] to reboot the system. To discard all changes, click [Discard Changes].

#### 1.2.7 [ECDIS/Radar] window

Own Ship Setting	Installation Parameters	CCRS	TCS	AMS		
ECDIS	I Radar Setting					
	ECDIS (Syst	tem Setting)				
	Calculate CPA/TCPA					
	Output Chart Objects					
	ECDIS / Radar (:	System Setting)				
	Use Legacy TTM ID					
		ECDIS / Radar Setting ECDIS (Syst Calculate CPA/TCPA Output Chart Objects ECDIS / Radar (1	ECDIS / Radar Setting ECDIS (System Setting) Calculate CPA/TCPA Output Chart Objects ECDIS / Radar (System Setting)	ECDIS / Radar Setting ECDIS (System Setting) Calculate CPA/TCPA Output Chart Objects ECDIS / Radar (System Setting)	ECDIS / Radar Setting ECDIS (System Setting) Calculate CPA/TCPA Output Chart Objects ECDIS / Radar (System Setting)	ECDIS / Radar Setting ECDIS (System Setting) Calculate CPA/TCPA Output Chart Objects ECDIS / Radar (System Setting)

ltem							
[Calculate CPA/TCPA]	Settir	Setting cannot be changed. Keep "unchecked."					
[Output Chart Objects]	Turn output of AR-100M chart objects on or off. Check the box to output. Note: If checked, set [Output Route Data Setting] ([TCS] menu→[Other Setting] tab) to [File and RMB].						
[Use Legacy TTM ID]	Sets the behavior when the TTM sentence contains "ID = 0". Set according to the range of TTM ID of the connected de- vice.						
		RadarTTM IDRecommendedmanufacturerSetting rangesetting					
	FURUNO 00~99 Checked						
			01~200	N/A			
			00~99	Checked			
		Other	01~99	N/A			
		Other	00~999	Unchecked			
	01~999 N/A						
	<b>Note 1:</b> "N/A" means setting has no influence on system. <b>Note 2:</b> There is no problem if item is "checked" when a FURUNO radar is used.						

#### 1.2.8 [Language] window

The menu language for the everyday operating screens can be set to English or Japanese. The [Common Installation Setting] menu has English menus only.

**Note:** This language setting is synchronized with all units on the network. Reboot the synchronized unit(s) to use the selected menu language.

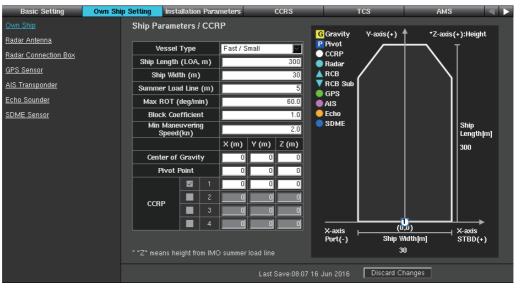
- 1. Access the [Common Installation Setting] menu and click [Basic Setting] on the tab bar.
- 2. Click [Language] on the menu bar.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
Basic Setting	Langua	ige Setting				
Peripherals		Lan				
<u>VDR</u>		Language	English			
Route Transfer						
Application						
<u>Ship Name</u>						
ECDIS / Radar						
Language						

- 3. Select [English] (default) or [Japanese].
- 4. Click [Save] on the info bar. Several confirmation messages appear. Click [OK] to reboot the system. To discard all changes, click [Discard Changes].

# 1.3 [Own Ship Setting] Menu

Enter the information for ship parameters/CCRP, antenna unit, GPS sensor, AIS transponder, echo sounder (E/S), and SDME sensor. Sensor symbols are displayed on the right half of the screen. There are six colors to show their priority: white (CCRP), cyan (radar), green (GPS), magenta (AIS), orange (E/S) and blue (SDME) in that order.



1. Access the [Common Installation Setting] menu and click [Own Ship Setting] on the tab bar.

2. Activate each field and enter own ship's data, using the table below for reference.

Menu item/interactive field	Description
[Vessel Type]	Own ship type among [Fast/Super Small], [Fast/ Small], [Slow/Big] and [Super Tanker].
[Ship Length (LOA, m)]	Own ship's length, in meters.
[Ship Width (m)]	Own ship's width, in meters.
[Summer Load Line (m)]	Distance between own ship's bottom and the summer load line, in meters.
[MAX ROT (deg/min)]	Own ship's maximum angular velocity (Rate of turn).
[Block Coefficient]	Own ship's block coefficient.
[Min Maneuvering Speed (kn)]	Minimum maneuvering speed. This value is used as the threshold for the Low Speed Alarm.
[Center of Gravity]	Own ship's center of gravity, in meters, set by X, Y and Z axis.
[Pivot Point]	Own ship's pivot point, in meters, set by X, Y and Z axis. Approximately 80% of the ship's length is recommended for the pivot point.
[CCRP]	Select the [CCRP] you wish to setup by clicking the check box to the left of each CCRP number. You can set up a maximum of four CCRP positions. Set up of [CCRP1] is required.

#### 3. Click [Radar Antenna] on the menu bar.

Basic Setting	Own Ship	Setting	Installation Para	ameters		CCRS		ICS	AMS	
<u>Own Ship</u>		Rada	r Antenna				<b>-</b> 0 11			
Radar Antenna							Gravity Pivot	Y-axis(+)	*Z-axis(+	):Height
Radar Connection Box			Equipment ID	X (m)	Y (m)	Z (m)	CCRP			
GPS Sensor			RAS001	0	0	0	Radar			
			RAS002	0	0	0	RCB	/		
AIS Transponder			RAS003	0	0	0	GPS			
Echo Sounder			RAS004	0	0	0	- AIS			
SDME Sensor			RAS005	0	0	0	Echo			
			RAS006	0	0	0	SDME			Ship Length[m]
			RAS007	0	0	0				300
			RAS008	0	0	0				
			RAS009	0	0	0				
			RAS010	0	0	0				
									<u> </u>	<b>→</b>
							X-axis	(0,	í	<-axis

**Note:** When you set the value for [Antenna Position] on the [Installation Parameters] menu, the setting value is shown at the right of [Equipment ID].

4. According to the number of antenna units connected to the PCU, check applicable checkbox to activate the antenna unit(s).

You can activate up to four antenna units. Setting range: [RAS001] to [RAS004]. Do not select [RAS005] to [RAS010]. Setup the antenna units activated here on the [Installation Parameters] menu (see section 1.4.5).

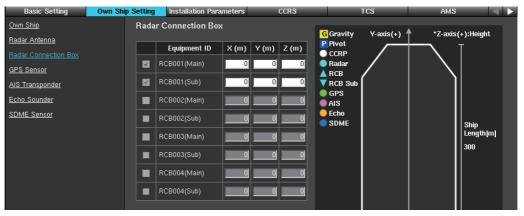
Note 1: Activate all antenna units connected to the FMD-3100.

**Note 2:** For an FAR-2××7 and FAR-2××8 series radar antenna, set the antenna no. (Equipment ID), taking care not to duplicate the Equipment ID of other radars. For how to set the antenna no., see the installation manual of the radar.

- 5. Enter the position data of antenna unit(s) in the boxes [X (m)], [Y (m)], and [Z (m)].
- 6. Enter the information for the GPS sensor, AIS transponder, echo sounder, and SDME sensor in a similar manner.

**Note:** When using the Radar Connection Box (RCB-002), make sure you input the location information for the external radar antenna. Also, when multiple RCB-002s

are connected to the same network, change the IP address of the RCB-002s, referring to "SUBSYSTEM" on page AP-3.



- [RCB00× (Main)] (x: 1 to 4): Input the location information of the external radar antenna that is connected to the [RADAR SIGNAL IN No.1] port.
- [RCB00× (Sub)] (×: 1 to 4): Input the location information of the external radar antenna that is connected to the [RADAR SIGNAL IN No.2] port. Set parameters for the [RCB00× (Main)] before setting parameters for the [RCB00× (Sub)].
- 7. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.4 [Installation Parameters] Menu

The [Installation Parameters] menu sets the signals and input data of the sensors. First, select the sensor data at the [Sensor Setting] window. Then select the sensor from which the units (radar sensor (antenna unit), MFD, ECDIS, radar, and sensor adapter) obtain the sensor data.

#### 1.4.1 Sensor setting

- 1. Access the [Common Installation Setting] menu and click [Installation Parameters] on the tab bar.
- 2. Click [Sensor Setting] on the menu bar, then click [GPS Sensor].

Basic Setting	Own Ship Setting	Installation Par	ameters CC	RS	TCS	4	MS < 🕨		
V Sensor Setting	and a GPS	Sensor							
<u>GPS Sensor</u> GYRO Sensor	Time	eout(msec)	60000	( <u>60000</u> (100 ~ 3600000))					
ROT GYRO Sensor		Equipment ID	SFID		Data Type	Strict / Loose	Details		
AIS Transponder	<b>V</b>	GPS001	GP0001		he time t	o timeout fo	or receiving		
Echo Sounder	<b>Z</b>	GPS002	GP0002			•			
		GPS003	GP0003		ala. Reep	o the defaul	t setting.		
SDME Sensor		GPS004	GP0004	IEC611	62-1 Ed4 🛛 🗹	Loose	🛛 🗹 Details		
NAVTEX Receiver		GPS005	GP0005	IEC611	62-1 Ed4 🛛 😽	Loose	Details		
Water Temperature		GPS006	GP0006	IEC611	62-1 Ed4 🛛 🗹	Loose	Details		
Wind Sensor		GPS007	GP0007	IEC611	62-1 Ed4 🛛 🔀	Loose	Details		

- 3. Check applicable check boxes according to the number of GPS receivers connected.
- 4. Set the following items for the units activated at step 3.

Data field	Comments
[SFID]	Keep the default setting. Do not use the "AI" prefix (AIS excluded) or the "II" prefix.
[Data Type]	Sets the RX sentence data format. Setting options: [IEC 61162-1 Ed3], [IEC 61162-1 Ed4], [IEC 61162-1 Ed5], [ASCII], [BINARY], [MODBUS], [PSU]. Do not select [ASCII] or [BINARY].
[Strict/Loose]	Sets the integrity of sentence data. [Strict]: Confirm the validity of checksum, then receive sentence. [Loose]: Receive sentence regardless of checksum invalidity.

5. Click the [Details] button to set the following items, referring to the table shown below.

П	Details Setting		Details Setting		П	Details Setting		
	VDR	- VDR001	Other Ser	nsor - OTR001		GPS Sen	sor - GPS001	
	Sensor Name	No.1 VDR	Sensor Name	No.1 PSU Control		Sensor Name	No.1 GPS	
	Manufacture	🗹	Manufacture	🔽		Manufacture	Furuno 🗹	
	Sensor Type No.	🗹	Sensor Type No.	🔽		Sensor Type No.	GP-150	
	System Alert ID	410	System Alert ID	420 (No.1 Other Sensor)		System Alert ID	300	
	Alert Information Source	Alert Definition	X (m)	0		Alert Information Source	Alert Definition	
	ALF Text Information	All Alert Name	Y (m)	0		ALF Text Information	All Alert Name	
	Sensor Network	172 . 31 . 16 . 200	Z (m)	0				
	Gateway Network	192 . 168 . 31 . 100	Alert Information Source	Alert Definition		Cancel	ок	
	Cancel		ALF Text Information	All Alert Name		<u>For ot</u> l	<u>ner units</u>	
	-							

For [VDR]

For [Other Sensor]

Item	Remarks
[Sensor Name]	Enter the appropriate sensor name.
[Manufacture]	Select the manufacturer of sensor from the pull-down list. <b>Note:</b> If the required manufacturer does not appear, add it manually (see section 1.4.9).
[Sensor Type No.]	Select the type of sensor from the pull-down list. <b>Note:</b> If the required type does not appear, add it manually (see section 1.4.9).
[System Alert ID]	The identification number that is assigned in the system is shown in this field. Do not change the setting.
[X (m)], [Y (m)], [Z (m)]	Set the location of X, Y and Z for [Other Sensor] only.
[Alert Information Source]	<ul> <li>Set the source of alert definition to show on the display when the alert message is received in an ALF sentence.</li> <li>[Alert Definition]: Show the alert definition registered to the PCU.</li> <li>[Alert Sentence]: Show the alert definition included in the ALF sentence.</li> </ul>

ltem	Remarks
[ALF Text Information]	<ul> <li>Select the type of the 2/2 packet text information of ALF sentence.</li> <li>[All Alert Name]: Select this item if all alert text is included in the 2/2 packet of the ALF sentence. The text information on the 2/2 packet of the ALF sentence is shown as the alert name in the alert list/log.</li> <li>[Remaining Alert Name]: Select this item if the alert text is divided in 1/2 and 2/2 packets of the ALF sentence. The text information for both the 1/2 and 2/2 packets of the ALF sentence. The text information for both the 1/2 and 2/2 packets of the ALF sentence.</li> <li>[Decision Support]: Select this item if the alert details information (Decision Support) is included in the 2/2 packet of the ALF sentence. The text information for both the sentence is shown as the alert details information (Decision Support) is included in the 2/2 packet of the ALF sentence. The text information for the 2/2 packet of the ALF sentence is shown as the alert details information (Decision Support) is included in the 2/2 packet of the ALF sentence. The text information for the 2/2 packet of the ALF sentence is shown as the alert details information (Decision Support) is included in the 2/2 packet of the ALF sentence. The text information for the 2/2 packet of the ALF sentence is shown as the alert details in the alert list/log.</li> </ul>
[Sensor Network]	Set the IP address of sensor network for [VDR] only.
[Gateway Network]	Set the IP address of gateway network for [VDR] only.

 Set [Gyro Sensor], [ROT GYRO Sensor], [AIS Transponder], [Echo Sounder], [SDME Sensor], [NAVTEX Receiver], [Water Temperature], [Wind Sensor], [Magnet Compass Sensor], [Current Sensor], [Rudder Sensor], [HCS], [VDR], [BN-WAS], and [Other Sensor] similarly.

Note: Only sensors connected to the PCU should be set.

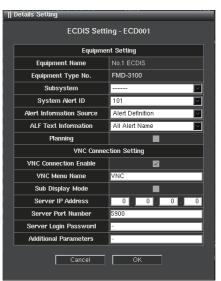
7. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

### 1.4.2 PCU-3000 configuration

1. Select [ECDIS] on the menu bar.

Basic Setting C	wn Ship Setting	Installation F	Parameters CC	RS	TCS	AMS	A      A
Sensor Setting	ECDI	S Setting					
Radar Sensor							
Radar Connection Box		Equipment ID	Equipment Na	me S	ensor Network	Gateway Network	Details
► MFD		ECD001	No.1 ECDIS	17	2.31.16.1	192.168.31.1	Details
		ECD002	No.2 ECDIS	17	2.31.17.1	192.168.31.2	Details
ECDIS		ECD003	No.3 ECDIS	17	2.31.16.2	192.168.31.3	Details
No.1 ECDIS		ECD004	No.4 ECDIS	17	2.31.17.2	192.168.31.4	Details
▶ <u>Radar</u>		ECD005	No.5 ECDIS	17	2.31.16.3	192.168.31.5	Details
Chart Radar		ECD006	No.6 ECDIS	17	2.31.17.3	192.168.31.6	Details
Sensor Adapter		ECD007	No.7 ECDIS	17	2.31.16.4	192.168.31.7	Details
▶ НИВ		ECD008	No.8 ECDIS	17	2.31.17.4	192.168.31.8	Details
<ul> <li>Connection Setting</li> </ul>		ECD009	No.9 ECDIS	17	2.31.16.5	192.168.31.9	Details
		ECD010	No.10 ECDIS	17	2.31.17.5	192.168.31.10	Details
User Sensor Model List		ECD011	No.11 ECDIS	17	2.31.16.6	192.168.31.11	Details
		ECD012	No.12 ECDIS	17	2.31.17.6	192.168.31.12	Details
		ECD013	No.13 ECDIS	17	2.31.16.7	192.168.31.13	Details
		ECD014	No.14 ECDIS	17	2.31.17.7	192.168.31.14	Details
		ECD015	No 15 ECDIS	17	231168	192 168 31 15	Details
	🔥 Cha	nged data is not :	saved vet Last Sa	ve:06:04 04 Apr	2018 Disc:	ard Changes	

 Check applicable checkbox to activate the corresponding PCU-3000. The Equipment ID checked on this step is shown on the menu bar. The maximum number of PCU-3000s that can be connected is three.
 Note: Do not check PCU-3000s not used, to prevent trouble. Check only the PCU-3000s to be used. 3. Click the [Details] button and set the items referring to the table shown below.



-	
ltem	Remarks
[Subsystem]	Set this menu item to share the sensor data through HUB-3000. For subsystem details, see page AP-3. When sharing the sensor data: Set the value. Setting range: "A" to "Z". To not share the sensor data: Keep the default setting ("").
[System Alert ID]	The identification number that assigned in the system is shown in this field. Do not change the setting.
[Alert Information Source]	<ul> <li>Set the source of alert definition to show on the display when the alert message is received in an ALF sentence.</li> <li>[Alert Definition]: Show the alert definition registered to the processor unit.</li> <li>[Alert Sentence]: Show the alert definition included in the ALF sentence.</li> </ul>
[ALF Text Infor- mation]	<ul> <li>Select the type of the 2/2 packet text information of ALF sentence.</li> <li>[All Alert Name]: Select this item if all alert text is included in the 2/2 packet of the ALF sentence. The text information for the 2/2 packet of the ALF sentence is shown as the alert name in the alert list/log.</li> <li>[Remaining Alert Name]: Select this item if the alert text is divided in 1/2 and 2/2 packets of the ALF sentence. The text information for both the 1/2 and 2/2 packets of the ALF sentence is shown as the alert name in the alert list/log.</li> <li>[Decision Support]: Select this item if the alert details information (Decision Support) is included in the 2/2 packet of the ALF sentence is shown as the alert details in the alert details information for the 2/2 packet of the ALF sentence. The text information for the 2/2 packet of the ALF sentence is shown as the alert details in the alert list/log.</li> </ul>
[Planning]	Check the checkbox to assign the planning ECDIS. The planning EC- DIS is a master unit to share the route data. For details of sharing the route data, see the operator's manual of the ECDIS. <b>Note:</b> Alerts are not displayed on the planning ECDIS.

ltem	Remarks
[VNC Connection Enable]	No use.
[Sub Display Mode]	
[Server IP Ad- dress]	
[Server Port Number]	
[Server Login Password]	
[Additional Pa- rameters]	

4. Click [Serial Input/Output] of [No.1 ECDIS] on the menu bar. The PCU-3000 has four serial interface ports ([Serial 01] to [Serial 04]).

Basic Setting	Own Ship	p Setting	Installation	Parameters	CCRS		TC	S	AMS	<u> </u>
Sensor Setting		ECD0	01 Serial Inp	out/Output S	etting					
Radar Sensor										
Radar Connection Box			Serial No.	Eq	uipment ID		Details	I/F monitor	Output	Filter
MFD			Serial 01			~	Details	Start	Output	Filter
			Serial 02			~	Details	Start	Output	Filter
V ECDIS			Serial 03			$\sim$	Details	Start	Output	Filter
Vo.1 ECDIS			Serial 04			$\sim$	Details	Start	Output	Filter
			Serial 05			$\sim$	Details	Start	Output	Filter
Digital Input			Serial 06			$\sim$	Details	Start	Output	Filter
Digital Output			Serial 07			$\sim$	Details	Start	Output	Filter
▶ <u>Radar</u>			Serial 08			$\sim$	Details	Start	Output	Filter
<ul> <li><u>Radar</u></li> <li><u>Chart Radar</u></li> </ul>			Serial 08			×	Details	Start	Output	Filter

[Serial 01] and [Serial 02] can input/output at 38,400 bps. For high-speed signal input (such as AIS and Gyro), click [Details] to set the baud rate as 38,400 bps. The connector no. on the I/O board of the panel computer unit PCU-3000 and the corresponding serial port no. are shown in following tale.

Connector No.	Serial Port No.
COM1 (C1)	Serial 01
COM2 (C2)	Serial 02
COM3 (C3)	Serial 03
COM4 (C4)	Serial 04

- 5. Check the applicable checkboxes of [Serial No.] according to sensor connection.
- 6. Set the items referring to the table shown below.

ltem	Remarks
[Equipment ID]	Select the Equipment ID from the drop-down list.
	The drop-down list options depend on the setting at [Sensor Setting].

Item	Remarks
[Details]	<ul> <li>Sets the serial communication format.</li> <li>[Baud rate]: Sets the baud rate. For high-speed signal input (such as AIS and Gyro), set the baud rate as 38,400 bps The available serial ports with communication in 38,400 bps are [Serial 01] and [Serial 02] (For sensor adapters, [Serial 01] to [Serial 04]).</li> <li>[Data bit]: Sets the number of the data bit.</li> <li>[Parity bit]: Select [Odd] or [Even] for the parity bit. The parity bit is used in parity error checking to find errors that may occur during data transmission. When you do not use the parity bit, select [None].</li> <li>[Stop bit]: Sets the stop bit (last data bit location).</li> <li>[Timeout (sec)]<sup>*1</sup>: When the data is not input during the time set here, timeout alert occurs.</li> <li>[First Time]<sup>*2</sup>: Check to activate and change setting. Set the amount of timeout until the sensor's first signal is detected after startup.</li> <li>[Continuation]<sup>*2</sup>: Check to activate and change setting. Set the timeout time until discovering that the signal is lost, after detecting the initial signal.</li> <li>[Slave Address]<sup>*2</sup>: Sets the slave address for the Modbus communication.</li> </ul>
	<ul> <li>[Input] button<sup>*2</sup>: Sets the address and the signal bit for each alert on the [Modbus Input] window. On this window, alerts whose [Input Type] is set for [MODBUS] when setting alert definition (see section 1.8.6) appear.</li> <li>[Forward sensor data]<sup>*3</sup>: Check the checkbox to forward data input from the serial port to the sensor adapter. Normally keep the default setting (unchecked).</li> <li>*1 Not shown for ECDIS, sensor adapter serial input/output setting whose [Data Type] is selected to [MODBUS] (see section 1.4.1).</li> <li>*2 Shown for the ECDIS, sensor adapter serial input/output setting whose [Data Type] is selected to [MODBUS] (see section 1.4.1).</li> <li>*3 Not shown for the sensors whose [Data Type] is selected to [MODBUS] (see section 1.4.1).</li> </ul>
[I/F monitor]	Click [Start] to monitor the input signal sentences from the interface.

ltem	Remarks
[Output]	<ul> <li>Sets the output sentence formats from the serial port.</li> <li>[Output sentence whose destination corresponds with this sensor.]: Check the checkbox to activate any of the following items.</li> <li>To output the ACK and HBT sentences in response to the ALR sentence from the external sensor.</li> <li>To output the ACN and HBT sentences in response to the ALR sentence from the external sensor.</li> <li>To output the ACN and HBT sentences in response to the ALF sentence from the external sensor.</li> <li>[Data Source]: Select the serial source from the pull-down list.</li> <li>[Formatter]: Input the formatter for serial output. Up to eight sentences can be input for one source. For example, input "HDT,ROT" to set the HDT and ROT sentences.</li> <li>[Thin Out]: Check the checkbox to output with a lower transmission rate when forwarding data.</li> <li>Note 1: The ECDIS can send NAV STATUS (ship's condition) and messages to an AIS transponder. Output the Sentences VSD, ABM, AIQ and BBM, when an AIS transponder is connected.</li> <li>Note 2: Output the CRQ sentence to show the NAVTEX receiver mask information. For details about the NAVTEX receiver is one second.</li> <li>[Data Source]: ECD***/ALERT or CRA***/ALERT</li> <li>[Formatter]: EVE ***: Changed according to the equipment ID.</li> </ul>
[Filter]	Activates or deactivates the input sentence filter. Check the checkbox to use only the specified sentences. For example, to use the HDT sentence when the HDT and ROT sen- tences are received, check the checkbox and enter "HDT" in the [Filter] column. <b>Note:</b> If it is not possible to input limit to the Talker, enter ** (wild card), before sentence name. For example, "**HDT".

7. Repeat the procedures from step 3 to enter the settings to another ECDIS unit.

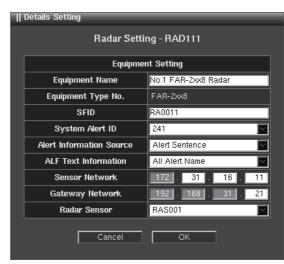
8. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

#### 1.4.3 Activating the connection with the processor unit of the FAR-2xx8 series radar

1. Click [Radar] on the menu bar.

Basic Setting Ow	n Ship Setting	Installation F	Parameters CCRS	TCS	AMS	
<ul> <li>Sensor Setting</li> </ul>	Radar	Setting				
<ul> <li>Radar Sensor</li> </ul>		Faultument ID	Fauloment Neme	Sensor Network	Gateway Network	Details
<ul> <li>Radar Connection Box</li> </ul>		Equipment ID	Equipment Name	_		
▶ <u>MFD</u>		RAD001	No.1 Radar		192.168.31.21	Details
ECDIS		RAD002			not upod	Details
<b>F</b> Radar			RAD001 through R	ADU IU are	not used.	Details
		RAD004	i .	i		Details
Chart Radar						
Sensor Adapter						
► <u>HUB</u>						
Connection Setting						
<ul> <li>User Sensor Model List</li> </ul>						
Suser Sensor Model List		RAD010	No.10 Radar	172.31.17.15	192.168.31.30	Details
		RAD111	No.1 FAR-2xx8 Radar	172.31.16.11	192.168.31.21	Details
		RAD112	No.2 FAR-2xx8 Radar	172.31.17.11	192.168.31.22	Details
		RAD113	No.3 FAR-2xx8 Radar	172.31.16.12	192.168.31.23	Details
		RAD114	No.4 FAR-2xx8 Radar	172.31.17.12	192.168.31.24	Details
					1	

- Check the check for each FAR-2××8 series radar processor unit to be connected. Setting range: [RAD111] to [RAD118] The Equipment ID checked on this step is shown on the menu bar. Note: Do not use [RAD001] to [RAD010].
- 3. Click the [Details] button to set the following items, referring to the table shown below.



ltem	Remarks
[Equipment Name]	Enter the name of the equipment.
[Equipment Type No.]	Shows the equipment type number.
[SFID]	Keep the default settings.
[System Alert ID]	The identification number that is assigned in the system is shown in this field. Do not change the setting.

ltem	Remarks
[Alert Information Source]	<ul> <li>Select source of alert definition information to be displayed on the screen when alert occurrence is received in the ALF sentence.</li> <li>[Alert Definition]: Display according to the alert definition stored in this equipment.</li> <li>[Alert Sentence]: Displays based on alert definitions included in the ALF sentences.</li> </ul>
[ALF Text Informa- tion]	<ul> <li>Select the text information type of 2/2 packet of ALF sentence.</li> <li>[All Alert Name]: The 2/2 packet of the ALF sentence contains all information of alert text. The text information of 2/2 packet of the ALF sentence is displayed as an alert name in the alert list/log.</li> <li>[Remaining Alert Name]: Alert text is split into 1/2 packet and 2/2 packet of the ALF sentence. The text information of the 1/2 packet and 2/2 packet of the ALF sentence. The text information of the 1/2 packet and 2/2 packet of the ALF sentence is displayed as an alert name in the alert list/log.</li> <li>[Decision Support]: The 2/2 packet of the ALF sentence includes the detailed information (Decision Support) of the alert. Text information of the 2/2 packet of the ALF sentence is displayed as alert details of alert list/log.</li> </ul>
[Sensor Network]	Shows the IP address of the sensor network. Do not change the setting.
[Gateway Network]	Shows the IP address of the gateway network. Do not change the setting.
[Radar Sensor]	Select the Equipment ID of the antenna unit connected with the processor unit.

4. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

#### 1.4.4 Sensor adapter configuration

A maximum of eight MC-3000S Sensor Adapters can be connected to the sensor network. In case of the redundant configuration, sixteen sensor adapters can be connected to the network. The MC-3000S can connect a max. ten additional units (MC-3020D/MC-3030D).

1. Click [Sensor Adapter] on the menu bar.

Basic Setting O	wn Ship Setting	Installation I	Parameters CCRS	TCS	AMS
<ul> <li>Sensor Setting</li> </ul>	Senso	r Adapter Se	tting	Talker ID	
<ul> <li>Radar Sensor</li> </ul>		Faultum ant ID	Equipment Name	Sensor Network	Details
Radar Connection Box		Equipment ID	· ·		
MFD		MCV001	No.1 Sensor Adapter	172.31.16.101	Details
		MCV002	No.2 Sensor Adapter	172.31.17.101	Details
ECDIS		MCV003	No.3 Sensor Adapter	172.31.16.102	Details
Radar		MCV004	No.4 Sensor Adapter	172.31.17.102	Details
Chart Radar		MCV005	No.5 Sensor Adapter	172.31.16.103	Details
▼ <u>Sensor Adapter</u>		MCV006	No.6 Sensor Adapter	172.31.17.103	Details
▶ <u>HUB</u>		MCV007	No.7 Sensor Adapter	172.31.16.104	Details
Connection Setting		MCV008	No.8 Sensor Adapter	172.31.17.104	Details
User Sensor Model List		MCV009	No.9 Sensor Adapter	172.31.16.105	Details
Ser Sensor Moder List		MCV010	No.10 Sensor Adapter	172.31.17.105	Details
		MCV011	No.11 Sensor Adapter	172.31.16.106	Details
		MCV012	No.12 Sensor Adapter	172.31.17.106	Details
		MCV013	No.13 Sensor Adapter	172.31.16.107	Details
		MCV014	No.14 Sensor Adapter	172.31.17.107	Details
		MCV015	No 15 Sensor Adapter	172 31 16 108	Details

- \*: Set the talker of the sentence output by the sensor adapter, [II] or [SI]. Normally, keep the factory setting ([II]). Select [SI] only when it is necessary to change the talker of the sensor adapter due to the connection with other devices.
- 2. Check the check box of [MCV001] to activate.
- 3. Click [Details] to display the window as shown below. For the descriptions of the each items, see step 3 of section 1.4.2.

П	Details Setting									
	Sensor Adapter S	Setting - MCV001								
	Equipment Setting									
	Equipment Name	Equipment Name No.1 Sensor Adapter								
	Equipment Type No.	MC-3000S								
	Subsystem	🔽								
	System Alert ID	201								
	Alert Information Source	Alert Definition								
	ALF Text Information	All Alert Name 🗾								
	Cancel	ОК								

4. Click [No.1 Sensor Adapter] on the menu bar.

The sensor adapter consists of four sub units: [Serial Input/Output], [Digital Input]\*, [Digital Output]\*, and [Analog Input]\*. [Analog Input] is not used on the FMD-3100.

\* Not displayed when the MC-3000S is connected directly to LAN. If it is necessary to change the setting, connect the MC-3000S via the PCU-3000.

5. Click [Serial Input/Output]. There are eight ports in the Serial Input/Output. [Serial 01] to [Serial 04] can input/output at 38,400 bps for the AIS and Gyro.

Basic Setting Own	Ship Setting	Installation	n Parameters	CCRS	TC	S	AMS	
Sensor Setting	MCVO	01 Serial In	put/Output Set	ting				
▶ <u>Radar Sensor</u>			1					
Radar Connection Box		Serial No.	Equip	ment ID	Details	I/F monitor	Output	Filter
		Serial 01		×	Details	Start	Output	Filter
		Serial 02		~	Details	Start	Output	Filter
ECDIS		Serial 03		~	Details	Start	Output	Filter
▶ <u>Radar</u>		Serial 04		×	Details	Start	Output	Filter
Chart Radar		Serial 05		*	Details	Start	Output	Filter
V Sensor Adapter		Serial 06		~	Details	Start	Output	Filter
Vo.1 Sensor Adapter		Serial 07		×	Details	Start	Output	Filter
Serial Input/Output		Serial 08		<u> </u>	Details	Start	Output	Filter
Digital Input								
Digital Output								
Analog Input	Unused	]						

#### 1. INITIAL SETTINGS AND ADJUSTMENTS

The connector no. on the MC-3000S board and the corresponding serial port no. are shown in the following table.

Connector No.	Serial Port No.	Connector No.	Serial Port No.	
J4	Serial 01	J8	Serial 05	
J5	Serial 02	50	Serial 06	
J6	Serial 03	J9	Serial 07	
J7	Serial 04		Serial 08	

- 6. Set the items referring to step 6 of section 1.4.2.
- 7. Click [Digital Input] on the menu bar.

Basic Setting Own S	Ship Settin	g <mark>Ins</mark>	tallatic	n Parameters CCRS	TCS AMS				
► Sensor Setting MCV001 Digital Input Setting									
Radar Sensor		Channe	:I +	Data Category	Equipment ID	Details			
Radar Connection Box		01 01		ALERT	<b>X</b>	Details 🔷			
▶ <u>MFD</u>		02		ALERT	<b>X</b>	Details			
ECDIS		03				Details			
▶ <u>Radar</u>		04				Details			
Chart Radar		05		ALERT		Details			
V Sensor Adapter		08		ALERT	<u> </u>	Details			
		07		ALERT 🔽		Details			
V <u>No.1 Sensor Adapter</u>		08		ALERT		Details			
Serial Input/Output		02 01		ALERT		Details			
<u>Digital Input</u>		02		ALERT 🔽		Details			
<u>Digital Output</u>		03	;	ALERT		Details			
Analog Input )U	Jnuse	<b>d</b> 04		ALERT		Details			
► HUB		05		ALERT		Details			
Connection Setting		06		ALERT		Details			
<ul> <li>User Sensor Model List</li> </ul>		07		ALERT 🔽		Details 🖕			

[Channel 01-01] to [Channel 01-08] are shown on the display. Each sensor adapter MC-3020D has eight input ports. When one sensor adapter MC-3020D is connected to the MC-3000S, [Channel 01-01] to [Channel 01-08] can be used. When ten sensor adapters MC-3020D are connected, [Channel 01-01] to [Channel 10-08] can be used.

The connector no. on the MC-3020D board and the corresponding channel port no. are shown below.

Connector No.	Channel No.	Connector No.	Channel No.				
J3	Channel 01-01	J5	Channel 01-05				
55	Channel 01-02		Channel 01-06				
J4	Channel 01-03	J6	Channel 01-07				
J4	Channel 01-04	50	Channel 01-08				

No.1 sensor adapter MC-3020D

#### No.2 sensor adapter MC-3020D

	Connector No.	Channel No.	Connector No.	Channel No.
	J3	Channel 02-01	J5	Channel 02-05
	55	Channel 02-02	55	Channel 02-06
	J4	Channel 02-03	J6	Channel 02-07
		Channel 02-04	50	Channel 02-08

8. Check the checkbox for [Channel No.] to set the items referring to the table shown below.

below.								
ltem	Remarks							
[Data Cate- gory]	Sets the data category. Settings: [ALERT], [ACK], [BUZZER STOP], [OP- ERATOR FITNESS], [OTHER], [GYRO SELECTOR], [MOB].							
[+] button	This appears when the [Data Category] is set to [ALERT]. Click to show the configuration of the alert input.							
	Channel       +       Data Category       Equipment ID       Details         Image: Details       01       01       01       -       ALERT       Image: Details       Details         Image: Details       Equipment ID       Alert No.       Alert Name       Details         Image: Details       Equipment ID       Alert No.       Alert Name         Image: Details       Image: Details       Image: Details       Image: Details         Image: Details       Equipment ID       Alert No.       Alert Name         Image: Details       Image: Details       Image: Details       Image: Details         Image: Details       Equipment ID       Alert No.       Alert Name         Image: Details       Image: Details       Image: Details       Image: Details         Image: Details       Image: Details       Image: Details       Image: Details       Image: Details         Image: Details       Image: Details       Image: Details       Image: Details       Image: Details       Image: Details         Image: Details       Image: Details       Image: Details       Image: Details       Image: Details         Image: Details       Image: Details       Image: Details       Image: Details       Image: Details         Image: Details							
	<ul> <li>[Equipment ID]: The Equipment ID is shown.</li> <li>[Alert ID]: The alert notification sentence* (ALF or ALR) and alert number are shown. When the alert notification sentence is ALF, the instance ID is shown.</li> <li>*: According to the connected sensors.</li> </ul>							
	[ button: Opens the [Alert No. Setting] window to select the input alert. The following example uses the alert notification sentence ALR. Select the Equipment ID for the connected sensors from the [Equip- ment ID] pull-down list. Then check the radio button of the desired alert and click the [OK] button.							
	I Alert No. Setting          MCV001 - Digital Input - Board01 Channel01         Equipment ID       GPS001 (GP0001) (No.1 GPS)         Alert No.       Alert Name         0       001         Arrival Alarm       Alert Name         0       002         Anchor Watch Alarm       O03         0       004         Ship's Speed Alarm       O05         0       005							
	<ul> <li>[Alert Name]: The alert name is shown.</li> </ul>							
[Equipment ID]	Select the Equipment ID from the pull-down list. This appears when the [Data Category] is set to [ACK] or [BUZZER STOP]. The pull-down list options change according to the setting at [Sensor Setting].							
[Details]	<ul> <li>[Name]: Enter the appropriate sensor name.</li> <li>[Data Type]: Set the contact input ([Normally Open] or [Normally Closed]).</li> <li>[Input Time (100msec)]: Set the input time.</li> <li>[Dead Band (100msec)]: Set the dead band after input.</li> <li>[Calibration Active]: Keep the default setting. (Default: without check)</li> <li>[Active Status (1)], [Active Status (0)]: Keep the default setting.</li> </ul>							

#### 1. INITIAL SETTINGS AND ADJUSTMENTS

9. Click [Digital Output] on the menu bar.

Basic Setting Own Shi	p Settin	អ	Insta	llatic	n Parameters CCRS	TCS A	MS	$\neg$	
Sensor Setting	MC\	/001	Digi	tal (	Output Setting				
Radar Sensor		Cha	nnel	+	Data Category	Equipment ID		Details	
Radar Connection Box		01	01		ALERT			Details	
▶ <u>MFD</u>			02		ALERT			Details	
ECDIS			03		ALERT	I.		Details	
▶ <u>Radar</u>			04		ALERT			Details	
Chart Radar			05		ALERT	]		Details	
V Sensor Adapter			06		ALERT	<u> </u>		Details	
			07		ALERT	<u> </u>		Details	
Vo.1 Sensor Adapter			08		ALERT		$\sim$	Details	
Serial Input/Output			01		ALERT		$\sim$	Details	
Digital Input			02		ALERT			Details	
Digital Output			03		ALERT			Details	
Analog Input			04		ALERT			Details	
▶ <u>HUB</u>			05		ALERT	I		Details	
<ul> <li>Connection Setting</li> </ul>			06		ALERT			Details	
User Sensor Model List			07		ALERT			Details	-
Over Sensor Model Fist									
	🛦 Cr	iange	ed dat	a is r	not saved yet. Last Save:0	0:06 17 Jun 2016 Discard Changes			

[Channel 01-01] to [Channel 10-08] are shown on the display. Each sensor adapter MC-3030D has eight input ports. When one sensor adapter MC-3030D is connected to the MC-3000S, [Channel 01-01] to [Channel 01-08] can be used. When ten sensor adapters MC-3030D are connected, [Channel 01-01] to [Channel 10-08] can be used.

The connector no. on the MC-3030D board and the corresponding channel no. are shown below.

Connector No.	Channel No.	Connector No.	Channel No.
12	Channel 01-01	15	Channel 01-05
J3	Channel 01-02	J5	Channel 01-06
J4	Channel 01-03	J6	Channel 01-07
	Channel 01-04	50	Channel 01-08

No.1 sensor adapter MC-3030D

No.2 sensor adapter MC-3030D

Connector No.	Channel No.	Connector No.	Channel No.
J3	Channel 02-01	J5	Channel 02-05
12	Channel 02-02	55	Channel 02-06
14	Channel 02-03	J6	Channel 02-07
J4 -	Channel 02-04	50	Channel 02-08

10. Check the checkbox for [Channel No.] to set the items referring to the table shown below.

ltem	Remarks
[Data Cate-	Sets the data category. Settings: [ALERT], [ACK], [BUZZER STOP], [OP-
gory]	ERATOR FITNESS], [OTHER], [TRANSFER], [BACKUP NAVIGATOR].

Item	Remarks
[+] button	This appears when the [Data Category] is set to [ALERT]. Click to show the configuration of the alert output.
	Channel       +       Data Category       Equipment ID       Details         01        ALERT        Details         Equipment ID       Alert No.       Alert Name         ECD001       ALF       30852       NULL       AP Receive Error         02       ALERT        Details         Example: ALF is the alert notification sentence.       Details
	<ul> <li>[Equipment ID]: The Equipment ID is shown.</li> <li>[Alert ID]: The alert notification sentence* (ALF or ALR) and alert number are shown. When the alert notification sentence is ALF, the instance ID is shown.</li> <li>*: According to setting of [Output Data Type for INS] in the [AMS] menu (see section 1.7).</li> </ul>
	• []] button: Opens the [Alert No. Setting] window to select the output alert. The following example uses the alert notification sentence ALF. Check the radio button of the desired alert and click the [OK] button.
	MCV001 - Digital Output - Board01 Channel01  Equipment ID ECD001   Alert Description  Alert Description  Alert Description  Alert Description  Instance ID Alert Description  Instance ID Alert Description  Instance ID Alert Description  Cancel OK
[Equipment ID]	[Alert Name]: The alert name is shown.     Select the Equipment ID from the pull-down list.     The pull-down list options change according to the setting at [Sensor Set- ting].
[Details]	<ul> <li>[Name]: Enter the appropriate sensor name.</li> <li>[Output Time (100msec)]: Set the output time.</li> <li>[Dead Band (100msec)]: Set the dead band after output.</li> <li>[Calibration Active]: Keep the default setting. (Default: without check)</li> <li>[Active Status (1)], [Active Status (0)]: Keep the default setting.</li> </ul>

11. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

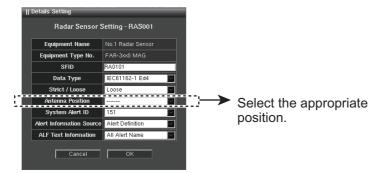
#### 1.4.5 Antenna unit configuration

Do the procedure here to set the antenna unit.

- 1. Click [Radar Sensor] on the menu bar.
- 2. Confirm that the Equipment ID checked at the [Own Ship Setting] menu (see section 1.3) is activated.

Basic Setting	Own Ship Setting	Installation Pa	rameters CCRS	TCS	AN	AS 🔍
Sensor Setting	Rada	r Sensor Settin	g			
Radar Sensor		Equipment ID	Equipment Name	Gateway Network	SFID	Details
Radar Connection Box		RAS001	No.1 Radar Sensor	192.168.31.101	RA0101	Details
► <u>MFD</u>		RAS002	No.2 Radar Sensor	192.168.31.102	RA0102	Details
ECDIS		RAS003	No.3 Radar Sensor	192.168.31.103	RA0103	Details
▶ <u>Radar</u>		RAS004	No.4 Radar Sensor	192.168.31.104	RA0104	Details
Chart Radar		RAS005	No.5 Radar Sensor	192.168.31.105	RA0105	Details
Sensor Adapter		RAS006	No.6 Radar Sensor	192.168.31.106	RA0106	Details
► <u>HUB</u>		RAS007	No.7 Radar Sensor	192.168.31.107	RA0107	Details
Connection Setting		RAS008	No.8 Radar Sensor	192.168.31.108	RA0108	Details
User Sensor Model List		RAS009	No.9 Radar Sensor	192.168.31.109	RA0109	Details
User Densor Would List		RAS010	No.10 Radar Sensor	192.168.31.110	RA0110	Details

- 3. Click the [Details] button to show the [Details Setting] window.
- 4. Set the appropriate antenna position from the [Antenna Position] pull-down list. The interswitch function requires correct input of the antenna position.



- 5. Click the [OK] button.
- 6. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.
- For FCR-2××9 or FAR-2××7 series antenna unit, perform the self test to confirm that the SPU program version and DIP switch setting are as shown below. <u>For FCR-2××9 series</u>

Open the [System Monitor] menu (see section 1.11), then click the [Self-test] button $\rightarrow$ [Radar Sensor (FCR-2 $\times$ ×9)] $\rightarrow$ [Sensor Status].

[SPU Software Version]: 0359204-03.50, or after

[SPU DIP switch (SW16-SW1)]: 0100

For FAR-2××7 series

Perform the self test, referring the operator's manual of FAR-2××7 series radar. [SPU PROGRAM NO.]: 0359204-03.50, or after [DIP SW]: 1000 or 1001

#### **1.4.6** Radar connection box configuration

You can display echoes from non-Furuno radars by connecting them to the ECDIS through the Radar Connection Box RCB-002. A maximum of four Radar Connection Boxes can be connected to this system.

Set the location information of the external radar antenna on the [Own Ship Setting] menu (see page 1-11) before doing the following procedure.

**Note:** When multiple RCB-002s are connected to the same network, change the IP address of the RCB-002s, referring to "SUBSYSTEM" on page AP-3.

1. Click [Radar Connection Box] on the menu bar.

Sensor Setting	Rada	r Connection B	ox Setting			
Radar Sensor		Equipment ID	Equipment Name	Gateway Network	SFID	Details
Radar Connection Box		RCB001(Main)		,		Details
► <u>MFD</u>		RCB001(Sub)	No.1 Radar Connection Box	192.168.31.111	RA0111	Details
ECDIS		RCB002(Main)		100,100,01,110	<b>D</b> 4 01 1 0	Details
> <u>Radar</u>		RCB002(Sub)	No.2 Radar Connection Box	192.168.31.112	RA0112	Details
<u>Chart Radar</u>		RCB003(Main)	No.3 Radar Connection Box	192.168.31.113	RA0113	Details
Sensor Adapter		RCB003(Sub)	NU.J Nauai Connection Box	192.100.31.113	NAUT13	Details
• <u>HUB</u>		RCB004(Main)	No.4 Radar Connection Box	192.168.31.114	RA0114	Details
<ul> <li>Connection Setting</li> </ul>		RCB004(Sub)		132.100.01.114		Details

- 2. Click the check box for [RCB00× (Main)] (×: 1 to 4). This box must be checked to use the radar connection box.
- 3. When you connect two external radars to the radar connection box, click the check box for [RCB00× (Sub)] (×: 1 to 4).
- 4. Click the [Details] button and set the following items.

П	Details Setting (Main)		П	Details Setting (Sub)	
	Radar Connection Bo	x Setting - RCB001		Radar Connection Bo	< Setting - RCB001
	SFID	RA0111		SFID	RA0111
	Data Type	IEC61162-1 Ed4		Data Type	IEC61162-1 Ed4
	Strict / Loose	Loose 🔽		Strict / Loose	Loose
	Antenna Position			Sub Antenna Position	
	Cancel	ОК		Cancel	OK
	For "Mair	n" radar		For "Sub	" radar

Item	Remarks
[SFID]	Keep the default setting.
[Data Type]	Sets the RX sentence data format. Setting options: [IEC 61162-1 Ed3], [IEC 61162-1 Ed4], [IEC 61162- 1 Ed5]
[Strict/Loose]	Sets the integrity of sentence data. [Strict]: Confirm the validity of checksum, then receive sentence. [Loose]: Receive sentence regardless of checksum invalidity.
[Antenna Posi- tion/] [Sub An- tenna Position]	Set the location for the antenna units of the external radar that is con- nected to the radar connection box. Setting options: [Fore], [Main Top], [Main 2nd], [Main 3rd], [Aft], [Port], [Starboard].

5. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

#### 1.4.7 Monitoring of HUB

To monitor the HUB, do as follows.

1. Click [HUB] on the menu bar.

Basic Setting	Own Ship Set	ting Installation F	arameters	CCRS	TCS		AMS	
<ul> <li>Sensor Setting</li> </ul>	н	JB Setting						
Radar Sensor		Status polling inte	rval (1 ~ 300 sec)	10	Status polling time	out (1000 ~ 1	0000 ms)	2000
Radar Connection Box NED		Status polling retr	ies (1 ~ 10 times)	2	Threshold to alert (1 ~ 10 times)			3
► <u>MFD</u>			Monitori	ng Type		Monitor Ports		
ECDIS								
Radar		Equipment ID	Equipment	Name	IP Address	Details	1	
Chart Radar		HUB001	No.1 HUB		192.168.31.252	Details		
Sensor Adapter		HUB002	No.2 HUB		192.168.31.252	Details		
▼ <u>HUB</u>		нивооз	No.3 HUB		192.168.31.252	Details	1	
Connection Setting		HUB004	No.4 HUB		192.168.31.252	Details	1	

2. Set the items referring to the table shown below.

Item	Remarks
[Status polling interval (1~300 sec)]	Polling interval for the HUB connection status re- quest.
[Status polling timeout (1000~10000 ms)]	Time to wait for the HUB connection status re- sponse.
[Status polling retries (1~10 times)]	Retry times to request the HUB connection sta- tus.
[Threshold to alert (1~10 times)]	The number of times the HUB link is lost to wait before generating an alert.
[Monitoring Type]	<ul> <li>Set the alert location when a connection error with the HUB-3000 occurs.</li> <li>[Monitor Ports]: The device connected to the HUB-3000 detects disconnect between it and the HUB-3000 and generates an alert.</li> <li>[Monitor Units]: The device disconnected from the HUB-3000 generates an alert.</li> </ul>

- 3. Check the checkbox for the HUB(s) to activate.
- 4. Click the [Details] button to open the [Details Setting] window and enter the appropriate items.

Details Setting	
HUB Setti	ing - HUB001
Equipment Name	No.1 HUB
IP Address	Gateway Network
Community	public
Cancel	OK

- [Equipment Name]: Enter the name of the HUB.
- [IP Address]: Select the network and IP Address of the HUB from the pull-down list.
- [Community]: Set the parameters for SNMP protocol. This setting must be the same as set at the HUB.
- 5. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

#### 1.4.8 Signal and Port setting for external equipment

This connection setting menu can set the serial I/O for external equipment, the analog input for sensor adapter, and HUB port.

- 1. Click [Connection Setting] on the menu bar.
- 2. Click [Serial Input/Output Setting] on the menu bar. The serial input/output settings are shown. The settings can be changed, referring to step 6 of section 1.4.2.

Basic Setting	Own Ship	Setting	Installati	on Parameters	CCRS		rcs	AMS		
Sensor Setting		Serial	Input/Out	put Setting						
Radar Sensor			Serial No.	Faut	ipment ID	Details	I/F monitor	Output	Filter	4
Radar Connection Box					·			Output	Filter	
▶ <u>MFD</u>			Serial 01		FMD-3100, Serial 05		avallable.	Output	Filter	
ECDIS			Serial 02		002) (No.2 GPS)		Start	Output	Filter	
▶ <u>Radar</u>			Serial 03	· · ·	001 ) ( No.1 Gyro 🖂		Start	Output	Filter	-
Chart Radar			Serial 04		051 ) ( No.1 ROT 🔽		Start	Output	Filter	1
Sensor Adapter		~	ECD002 ( N	0.2 ECDIS )				·		

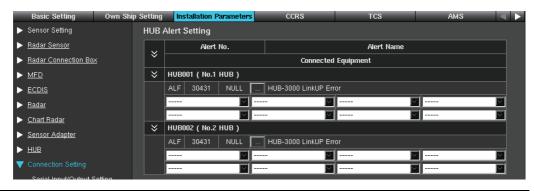
3. Click [Analog Input Setting] on the menu bar. The analog settings are shown.

Basic Setting	Own Ship	ip Setting Installation Parameters			CCRS		TCS	AMS		
Sensor Setting		Analo	g Input Setting							
Radar Sensor										
Radar Connection Bo	~	×	Channel No.		Sensor Name		Data Type	;	Details	
	<u>~</u>	$\sim$	MCV001 ( No.1 Sen	isor Adap	ter )					
MFD			Channel 01	-			-10-10V		Details	
ECDIS			Channel 02	-			-10-10V		Details	
▶ <u>Radar</u>		$\sim$	MCV002 ( No.2 Sen	isor Adap	ter )					
Chart Radar		~	MCV003 ( No.3 Sen	ICVOO3 ( No.3 Sensor Adapter )						
Sensor Adapter			Channel 01	-		1	-10-10V		Details	

- 4. Click [HUB Setting] on the menu bar. The alert settings of each port of HUBs are shown. The alert settings of each port of HUBs are shown. The display changes according to the setting for [Monitoring Type] (see page 1-28).
  - [HUB Port Setting] window ([Monitoring Type] = [Monitor Ports])

Basic Setting Own	n Ship Setting	Instal	Installation Parameters CCRS TCS AMS <							
Sensor Setting	HUB Port Setting									
Radar Sensor	~	Port		Alert I	No.	Alert Name			ne	
Radar Connection Box	~	HUB001	( No.1	HUB)						<b>^</b>
► <u>MFD</u>	<b></b>	01	ALF	30431	NULL		HUB-3000	LinkUP Error		
		02	ALF	30431	NULL	<u>.</u>	HUB-3000	LinkUP Error		
▶ <u>Radar</u>	<b>_</b>	03	ALF	30431	NULL			LinkUP Error		
► Chart Radar	<b>_</b>	04	ALF	30431	NULL			LinkUP Error		
Sensor Adapter		05	ALF	30431	NULL	<u> </u>		LinkUP Error		
► HUB		06	ALF	30431	NULL	<u> </u>		LinkUP Error		
Connection Setting		07	ALF	30431	NULL		HUB-3000 LinkUP Error			
Serial Input/Output Setting		08 HUB002	ALF	30431	NULL		HUB-3000	LinkUP Error		
Analog Input Setting		01	ALF	30431	NULL		HUB-3000	LinkUP Error		
ltem						1	Remar	KS		
Checkbox	Check	the c	hec	kbox	for th	ne	port w	hich generate	es the alert w	/hen
	the cor	nect	ion	is inte	errupt	ted	İ.	-		
[Port]	HUB p	ort nı	ımb	er.						
[Alert No.]	When	he a	lert	notific	atior	۱S	entend	ce is ALR, the	e alert numbe	er is
[	shown							· · · · · · · · · · · · · · · · · · ·		
	01101111		art.	n a tifi a	atian	~ ~	ntono	a ia ALE tha	alart numbar	and
							entenc	e is ALF, the	alert number	anu
	the Instance ID are shown.									
	Click the []] button to open the [Alert No. Setting] window. Set									
	the output alert on the [Alert No. Setting] window. Check the radio									
	button for the desired alert and click the [OK] button.									
[Alert Name]	Alert na	ame	of e	ach H	IUB p	oor	t			

• [HUB Alert Setting] window ([Monitoring Type] = [Monitor Units])



ltem	Remarks
[Alert No.]	When the alert notification sentence is ALR, the alert number is shown. When the alert notification sentence is ALF, the alert number and the Instance ID are shown.
	Click the [] button to open the [Alert No. Setting] window. Set the output alert on the [Alert No. Setting] window. Check the radio button for the desired alert and click the [OK] button.
[Alert Name]	Name of the alert set for each port.
Drop-down list	Select Equipment ID of device connected to HUB-3000.

5. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

#### 1.4.9 Customized sensor setting

Set the sensor types and manufacturers in the [Sensor Setting] menu.

- 1. Click [User Sensor Model List] on the menu bar.
- 2. Click the appropriate sensor to edit. The figure below shows an example where the [GPS Sensor] is selected.

Basic Setting	Own Ship S	etting Installation Pa	rameters	CCRS	Т	CS	AMS	
Connection Setting	<b>^</b>	GPS Sensor						
Vuser Sensor Model List								
GPS Sensor		Built-in S	Sensor Model List	;				
GYRO Sensor		Manufacture	Sensor	Type No.				
ROT GYRO Sensor		Furuno	GP-150					
AIS Transponder		Furuno	GP-150x					
Echo Sounder								
SDME Sensor								
NAVTEX Receiver		L						
<u>Water Temperature</u>			User Sensor Mod	el List				
Wind Sensor		Manufacture	Sensor	Type No.	New/Delete			
Magnet Compass Sens	or	Yokogawa	GP-200		Delete			
Current Sensor					New			
Rudder Sensor				[	New			
<u>HCS</u>					New			
<u>VDR</u>					New			
BNWAS								
Other Sensor	🚽 🕹	🝐 Changed data is not sa	wed yet. La	st Save:00:17 16	Jun 2016	Discard Ch	anges	

ltem	Remarks
[Built-in Sensor	Displays the sensor types and manufacturers preset already.
Model List]	[Manufacture]: Manufacturer of sensor
	[Sensor Type No.]: Type of sensor

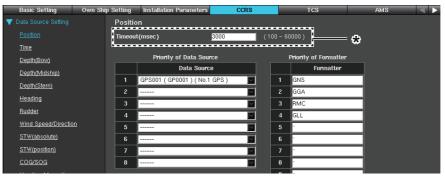
ltem	Remarks					
[User Sensor Model List]	Click the [New] button to add a new type or manufacturer of sensor. Enter the desired manufacturer name and the desired type of sen- sor, then click the [OK] button.					
	New User Sensor Model					
	Manufacture     Sensor Type No.       Example     Example       Cancel     OK					
	Click the [Delete] button to delete the added contents. The confirma- tion message appears, then click the [OK] button. <b>Note:</b> The contents added or deleted in this setting are applied to the [Sensor Setting] menu. See section 1.4.1.					

3. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

# 1.5 [CCRS] Menu

# 1.5.1 How to select the [Data Source]

- 1. Access the [Common Installation Setting] menu and click [CCRS] on the tab bar.
- 2. Click [Position] of [Data Source Setting] on the menu bar.



- \*: Position, Heading, STW, COG/SOG, Rate of Turn: Keep the default setting (3000). For other than the above settings, set "30000" (30 sec.).
- Select the data source in order of priority from the [Data Source] drop-down list. The Equipment ID checked at the [Installation Parameters] menu are shown on the drop-down list. When entering the data source, the [Formatter] is automatically entered.

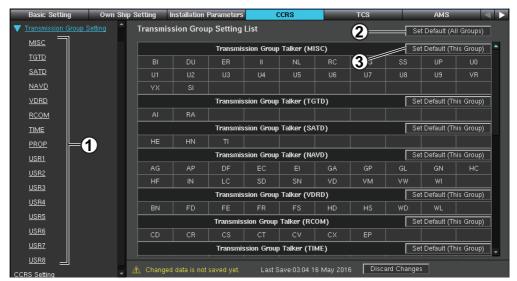
**Note:** When more than two [Data Source] and [Formatter] are entered, the topmost entry has the highest priority.

- Set [Time], [Depth(Bow)], [Depth(Midship)], [Depth(Stern)], [Heading], [Rudder], [Wind Speed/Direction], [STW(absolute)] (speed through the water), [STW(position)] (speed through the water), [COG/SOG], [Heading Magnetic], [Water Temperature], [Current], and [Rate of Turn] in a similar manner.
- 5. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

# 1.5.2 How to set [Transmission Group]

When connecting IEC61162-450 compatible sensors, you may need to adjust [Transmission Group Setting]. Under normal circumstances, you do not need to adjust these settings. When adjusting items in [Transmission Group Setting], you will need to configure for all devices in the configuration.

- 1. Access the [Common Installation Setting] menu, then click [CCRS] on the tab bar.
- 2. Select [Transmission Group Setting] from the menu bar.



No.	ltem	Description
1	[Transmission Group name]	Click the Transmission Group name to show the Setting List.
2	[Set Default (All Groups)]	Revert all Transmission Groups to default settings.
3	[Set Default (This Group)]	Revert the selected Transmission Group to default settings.

3. Select a Transmission Group from the menu bar.

Basic Setting Own Shi	p Setting	Installation F	Parame	ters (	CRS		TCS		AMS	
🔻 Transmission Group Setting 👘 🍐	Transr	nission Grou	p Setti	ing for MISC						
MISC	Mu	llticast Address	2	39.192.0.1						
<u>TGTD</u>	4	Aulticast Port	6	0001						
<u>SATD</u>										
NAVD	_			Ti	ansmission					
VDRD	BI	_	ER			RC	SG	SS	UP	UO
RCOM	U1	U2	U3	U4	US	U6	U7	U8	U9	VR
 <u>TIME</u>	ΥX	SI	-		-	-	-	<u> </u>	-	
PROP	-	_	-	-	-	-		<u> </u>	-	<u> </u>
	-	_	-		-	-	-  -	<u> </u>	-	<u> </u>
<u>USR1</u>	-	_	-	-	-	-	-	-	-	<u>-</u>
<u>USR2</u>	-	-	-	-	-	-	-	-	-	<u> </u> -
<u>USR3</u>										
<u>USR4</u>										
USR5										
<u>USR6</u>										
<u>USR7</u>										
<u>USR8</u>									_	
CCRS Setting	🛕 Chan	ged data is not :	saved y	et. Last S	iave:03:04 1	6 May 2016	6 Disca	ard Changes	3	

Example: Transmission Group Settings for MISC.

- 4. In the [Transmission Group Talker] fields, remove or add entries as appropriate.
- 5. Select and adjust other Transmission Group settings as appropriate.

6. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

Transmission Group	Talker	Multicast Address	Multicast Port
MISC	BI           DU           ER           II           NL           RC           SG           SS           UP           U0           U1           U2           U3           U4           U5           U6           U7           U8           U9           VR           YX           SI	239.192.0.1	60001
TGTD	AI RA	239.192.0.2	60002
SATD	HE HN TI	239.192.0.3	60003

# Default settings for each Transmission Group

			Multicast Port	
	AG			
	AP			
	DF			
	EC			
	EI			
	GA			
	GP			
	GL			
	GN			
NAVD	HC	239.192.0.4	60004	
	HF			
	IN			
	LC			
	SD			
	SN			
	VD			
	VM			
-	VW			
	WI			
	BN			
	FD			
	FE			
	FR			
VDRD	FS	239.192.0.5	60005	
	HD			
	HS			
	WD			
	WL			
	CD			
	CR		60006	
	CS			
RCOM	СТ	239.192.0.6		
	CV			
	CX			
	EP			
	ZA			
	ZC	000 400 0 7	00007	
TIME	ZQ	239.192.0.7	60007	
	ZV			
PROP	-	239.192.0.8	60008	
USR1	-	239.192.0.9	60009	
USR2	-	239.192.0.10	60010	
USR3	-	239.192.0.11	60011	
USR4	-	239.192.0.12	60012	
USR5	-	239.192.0.13	60013	
USR6	-	239.192.0.14	60014	
USR7	-	239.192.0.15	60015	
USR8	-	239.192.0.16	60016	

# 1.5.3 [CCRS Setting] window

Set if the NSR sentence is output from the CCRS in the [CCRS Setting] window of the [TCS] menu. This setting is currently unavailable. Confirm that the box has no check mark.



Remove the checkmark.

# 1.6 [TCS] Menu

The [Other Setting] window in the [TCS] menu is used to setup output of routes created on the ECDIS. The route data can be output to the external equipment (GP-170 etc). The [Basic Setting], [Detail Setting] and [Filter Setting] items in the [TCS] menu are not used on the FMD-3100.

- 1. Access the [Common Installation Setting] menu, then select [TCS] from the tab bar.
- 2. Select [Other Setting] on the menu bar.

Basic Setting	Own Ship Setting	Installation Paramete	rs	CCRS		TCS	AMS		l
Basic Setting	Other S	Setting							
Detail Setting									
Filter Setting		Route sharing for	External E	quipment					
Other Setting	Input	Route Data Setting	Method	None	$\sim$				
	Outpu	t Route Data Setting	Method	File and RMB	$\overline{}$				
	Outpu	it Route File Format	XTD Limit	Symmetrical	$\sim$				
		TCS SFID Set	ting						
		Source SFID	TCS SFID						
									l

ltem	Description
[Input Route Data Setting]	<ul> <li>Select the input method for route data received from other equipment.</li> <li>[None]: Route data from other equipment is not used.</li> <li>[File (HTTP)]: Uses data uploaded via the HTTP protocol. The connected equipment must support the FMD-3100's upload function.</li> <li>Note 1: After changing this setting, reboot the system to apply the setting.</li> <li>Note 2: Do not select [File (HTTP)] when the manufacturer does not sign the non-disclosure agreement with FURUNO. Detailed specification depends on the disclosed information between FU-RUNO and manufacturer.</li> </ul>
[Output Route Data Setting]	<ul> <li>Select the route data format.</li> <li>[File and RMB]: Output the route data with the file format and RMB sentence. The LAN connection with the external equipment is required.</li> <li>[RTE and WPL]: Output the route data with the RTE and WPL sentences. The serial connection with the external equipment is required.</li> <li>Note: When the AR-100M is connected, select [File and RMB].</li> </ul>

ltem	Description
[Output Route File	Select whether the channel limit is symmetrical or asymmetrical.
Format]	This setting is available when [Output Route Data Setting] is set to
	[File and RMB].
	<ul> <li>[Symmetrical]: The channel limit is symmetrical.</li> </ul>
	<ul> <li>[Asymmetrical]: The channel limit is asymmetrical.</li> </ul>
[Source SFID]	Select the additional SFID when CCRS outputs the sentence from the TCS ([ECDIS SFID] or [TCS SFID]).

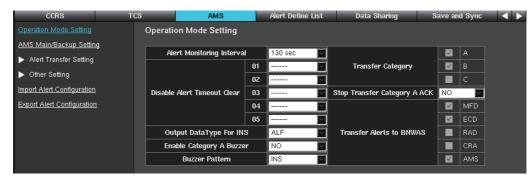
# 1.7 [AMS] Menu

The AMS menu sets up the interface between the AMS (Alert Management System) and the FMD-3100, including the AMS operating mode.

Note: For how to set the alert definition of AMS, see the FURUNO information.

# 1.7.1 AMS mode operation

- 1. Access the [Common Installation Setting] menu, then select [AMS] from the tab bar.
- 2. Select [Operation Mode Setting] on the menu bar.



ltem	Remarks
[Alert Monitoring In- terval]	Set the time to wait before clearing the corresponding alert when communication with a sensor is interrupted.
[Disable Alert Time- out Clear] (01 to 05)	Select the units where the alert is not to be cleared.
[Output Data Type For INS]	Select the data type of alert notification, ALR or ALF.
[Enable Category A Buzzer]	Select if the alert buzzer sounds when the alert of Category A oc- curs.
[Buzzer Pattern]	<ul> <li>Sets the buzzer sound pattern to output when an alert occurs.</li> <li>[INS]:</li> <li>Alert priority = "Alarm": Three short beeps, four seconds mute, then repeat.</li> <li>Alert priority = "Warning": Two short beeps, four seconds mute, then repeat.</li> <li>[Legacy]:</li> <li>Alert priority = "Alarm" or "Warning": Alarm sounds continuously.</li> </ul>
[Transfer Category] (A~C)	Check the checkbox of the appropriate Category (A to C) to transfer the alerts.

ltem	Remarks
[Stop Transfer Cate- gory A ACK]	Select [YES] to enable stopping of the alert transfer for Category A alerts by ACK operation. In this case, the alert is not acknowledged.
[Transfer Alerts to BNWAS]	<ul> <li>Set the permissions for the alert transmission to BNWAS (Bridge Navigational Watch Alarm System). The unit(s) checked here are allowed to output the alert signal to the BNWAS.</li> <li>[MFD]: Multifunction Display</li> <li>[ECD]: ECDIS</li> <li>[RAD]: Radar</li> <li>[CRA]: Chart Radar</li> </ul>

3. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.7.2 Master/Backup AMS setting

Set the master and backup AMS among the units connected to AMS. The master AMS outputs the alert data to the external AMS. When communication with the master AMS is lost, the backup AMS outputs the alert data to the external AMS instead of the master AMS.

CCRS	TCS	AMS	AMS			Data Sharing	Save and Sync	
Operation Mode Setting		AMS Main/Backup Settin						
AMS Main/Backup Setting				1				
Alert Transfer Setting		AMS Main			$\sim$			
, s			01		$\overline{}$			
Other Setting		AMS Backup	02					
Import Alert Configuration			03					
Export Alert Configuration	<u>i</u> .		04		$\sim$			
				60 sec	$\overline{\mathbf{v}}$			

Follow the procedure below to set master and backup AMS.

- 1. Access the [Common Installation Setting] menu, then select [AMS] from the tab bar.
- 2. Select [AMS Main/Backup Setting] on the menu bar.
- 3. Select the Equipment ID from the pull-down list for [AMS Main] to assign the master AMS.

**Note:** The FMD-3100 cannot be assigned as master or backup AMS. Assign an ECDIS other than the FMD-3100 as the master and backup AMS.

- Select the Equipment ID from the pull-down list for [AMS Backup] to assign the backup AMS.
   A maximum of four units can be assigned as backup AMS. The topmost entry has the highest priority.
- 5. Select the communication check interval for the master AMS from the pull-down list for [Alive Check Interval].
- 6. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.7.3 Alert transfer setting

- 1. Access the [Common Installation Setting] menu, then select [AMS] from the tab bar.
- Select [Alert Transfer Setting] → [IAS Setting] on the menu bar. You can create the alert group and transfer the alert to the navigational equipment. A maximum of ten alert groups ([Group001] to [Group010]) can be created, and a maximum of 99 alerts can be registered to one alert group.



3. Select the appropriate alert group number ([Group001] to [Group010]) to transfer, then set the following items.

ltem	Remarks
[Event Transmission]	Select the alert to be transferred.
	<ul> <li>[Change Status Alert]: Transfer the alert whose status is</li> </ul>
	changed. For example, when alert problem is rectified and alert status is changed from unrectified to rectified, alert is
	transferred.
	<ul> <li>[all target Alerts]: All alerts in the group are transferred.</li> </ul>
[Fixed Transmission]	Select the alert to be transferred periodically.
	<ul> <li>[all target Alerts]: All alerts in the group are transferred period- ically.</li> </ul>
	<ul> <li>[send "all occurred Alerts" or "ALR <null>, V,V"]: Transfer only active alert periodically.</null></li> </ul>
[Periodic Interval (1 -	Set the interval to transfer the alert data.
60 sec)]	
[Sentence]	Select the data type of alert notification, ALR or ALF.
[Output 01(02)]	Select Equipment ID of the destination equipment to transfer the alert data. A maximum of two equipments can be assigned to the destination.

#### 1. INITIAL SETTINGS AND ADJUSTMENTS

ltem	Remarks
[ <b>1</b> ] button	Opens the [Alert No.Setting] di- alog box to register the alert to the group. Select the alert source equipment from the [Equipment ID] pull-down list. Activate the radio button of the appropriate alert(s), then [OK] button to register the alert. The right figure is the example when alert notification sentence is ALF. The alert notification sen- tence is dependent on the specification of the equipment con- nected to this ECDIS. After clicking the [OK] button, Equipment ID, alert no. and alert description appear in the alert registration field.

4. Select [Alert Transfer Setting] and [Backup Navigator Setting] on the menu bar.

Basic Setting	Own Ship Setting	Installation Parameters	CCRS	TCS	AMS	
Operation Mode Setting	Backup	Navigator Transfer Sett	ing			
AMS Main/Backup Settin	Trans	fer Alerts NO				
V Alert Transfer Setting	0	utport				
IAS Setting		•				
Backup Navigator S	etting For Ans	chutz AP Only				
VDR Setting	Ans	chutz AP				
Other Setting	A	ert No.				
Import Alert Configuration						
Export Alert Configuration						

5. Set the following items.

ltem	Remarks
[Transfer Alerts]	Select [YES] to transfer the alert to the backup navigator equip-
	ment when an alarm is not acknowledged for 30 seconds.
[Output]	Select the backup navigator equipment to be used for alert data
	transfer.
[Anschutz AP]	Not used.
[Alert No.]	

6. Select [VDR Setting] on the menu bar.

CCRS	TCS	AMS	Alert Define List	Data Sharing	Save and Sync 🛛 🚽
				Data onating	Save and Syne
Operation Mode Setting	VDR Tra	nsfer Setting			
AMS Main/Backup Setting					
	Trans	fer Alerts NO			
Alert Transfer Setting	0.	ıtport			
IAS Setting					
Packun Navigator Sotting					

7. Set the following items.

ltem	Remarks
[Transfer Alerts]	Select [YES] to transfer the alert to VDR.
[Output]	Select the VDR to be used for alert data transfer.

8. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.7.4 Other setting window

This section provides a description for the contents of the [Other Setting] window. Open the [AMS] menu and select [Other Setting] on the menu bar, then select an appropriate setting item.

Item	Remarks				
[Category C Silence Setting]	Set the alert silence time for Category C alerts and register alerts. A maximum of ten groups ([Group001] to [Group010]) can be created, and a maximum of six alerts can be registered to one group. Different alert silence time can be set for each group.				
	Group001 Category C Silence Setting				
	Timer (1 ~ 300 sec)       30         No.       Equipment ID       Alert No.       Alert Name         01				
	• [Timer]: Set the time for which the alert is silent. Aural alerts are not generated during the time set here (setting range: 1 to 300 sec).				
	<ul> <li>[Image] button: Opens the [Alert No.Setting] dialog box to register an alert to a group. For how to register the alert on the [Alert No.Setting] dialog box, see page 1-39. After registering the alert, Equipment ID, alert no. and alert name appear on the alert registration field.</li> <li>Note: The text in the alert registration field is changed to red when registered alert is not Category C or the alert is registered to the other group.</li> </ul>				
[BR-2000 Connec- tion Setting]	Set this item when a FEA-21×7 is replaced with a FMD-3×00 and the BR-2000 is connected to the FMD-3×00. Set the FMD-3×00 with the same setting selected in [Message Type] in the [Alarm Inputs+Outputs/AMWSS] dialog box of the FEA-21×7. When a BR-2000 is not installed, select [Not Connected]. <b>Note:</b> When a BR-2000 is to be used, connect it to the serial port of the PCU-3000. Do not connect it to a serial adapter; data can- not be output.				
[ACK Send/Receive Setting]	<ul> <li>Set the options for the alert ACK signal.</li> <li>[Send Setting]</li> <li>[ACK Type]: Select the sentence to use when transmitting the alert ACK signal (ACN, ACM, ACN/ACM).</li> <li>[Periodic Interval ACK sentence]: Select the transmission interval for the alert ACK signal.</li> <li>[Receive Setting]</li> <li>[Monitoring Interval]: Keep the default setting.</li> </ul>				
[Silence Time Set- ting]	Set the time for which the alert is silent. Aural alerts are not gen- erated during the time set here.				
[Responsibility Transfer Setting]	Keep the default setting.				
[Alert Managed Log Setting]	Keep the default setting.				
[Change Active Alert Setting]	Select [YES] to switch to the [ACTIVE ALERT] window automat- ically when a new alert occurs.				

Item	Remarks
[Enable Silence But- ton Setting]	Keep the default setting.
[Redraw Interval Set- ting]	Keep the default setting.
[Unknown Alert Noti- fy Setting]	Keep the default setting.
[HBT Sentence Set- ting]	<ul> <li>Set the options for the HBT sentence.</li> <li>[Send Setting]</li> <li>[Periodic Interval]: Set the transmission interval for the HBT sentence.</li> <li>[Broadcast]: Select [YES] to transmit the HBT sentence to all equipment in the same network.</li> <li>[Receive Setting]</li> <li>[Timeout Count]: Communication lost alert occurs when HBT sentence is not received after the time set here.</li> <li>[Additional Time]: Set a time "gap" from the [Timeout Count] setting to when the communication lost alert is actually sent.</li> </ul>
[FELCOM-18 ACK Port Setting]	<ul> <li>Select the item according to [Transmission Group Setting] of FELCOM18. For how to set [Transmission Group Setting] of FELCOM18, see the installation manual of FELCOM18.</li> <li>[MISC (60001)]: Select when [Transmission Group Setting] of FELCOM18 is set [MISC].</li> <li>[Depend on Talker]: Select when [Transmission Group Setting] of FELCOM18 is set [RCOM].</li> </ul>

# 1.7.5 How to import and export [AMS] menu settings

You can import and export the [AMS] menu settings.

### Import the [AMS] menu settings

- 1. Access the [Common Installation Setting] menu, then select [AMS] from the tab bar.
- 2. Select [Import Alert Configuration] on the menu bar.

Basic Setting	Own Ship	Setting	Installation Parameters	_	CCRS	TCS	AMS	
Operation Mode Setting		Import						
AMS Master/Slave Setting			File		Upload	,	validation	
Alert Transfer Setting		ALERT_	_CONF.dat		Select File	-		
<ul> <li>Other Setting</li> </ul>								
Import Alert Configuration								Import
Export Alert Configuration								

- 3. Click the [Select File] button, then select the setting file to import. After selecting the setting file, the check result of the setting file appears at [Validation] field. When the check result is "OK", the [Import] button is available.
- 4. Click the [Import] button to import the setting file.
- 5. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

### Export the [AMS] menu settings

- 1. Access the [Common Installation Setting] menu, then select [AMS] from the tab bar.
- 2. Select [Export Alert Configuration] on the menu bar.

Basic Setting	Own Ship S	Setting	Installation Parameters	CCRS	TCS	AMS	
Operation Mode Setting		Export					
AMS Master/Slave Setting			File	Export			
Alert Transfer Setting		ALERT_	CONF.dat	Export File	1		
Other Setting							
Import Alert Configuration							
Export Alert Configuration							

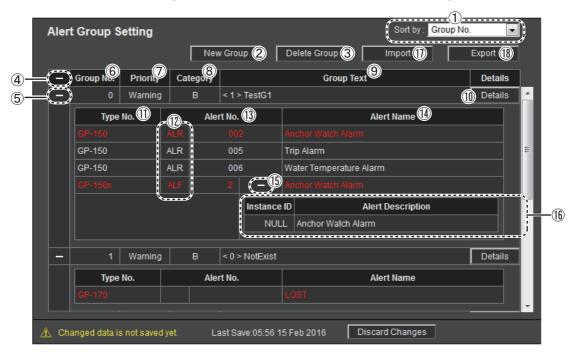
3. Click the [Export File] button to export the setting file.

# 1.8 [Alert Define List] Menu

This [Alert Define List] menu sets the alert group and the alert definition.

# 1.8.1 Alert Group Setting

- 1. Access the [Common Installation Setting] menu and click [Alert Define List] on the tab bar.
- 2. Click [Alert Group Setting] on the menu bar. The list of the alert groups is shown on the [Alert Group Setting] window.



	ltem	Remarks
1	[Sort by]	<ul> <li>Select the order to show the alert group.</li> <li>[Group No.]: Sorted by the alert group number in ascending order.</li> <li>[Priority/Category]: Sorted by the alert priority (Alarm/Warning/Caution) and category (A to C).</li> <li>[Group Text]: Sorted by the [Group Text] column in alphabetical order.</li> </ul>

	ltem	Remarks
2	[New Group] button	Add a new alert group. See section 1.8.2.
3	[Delete Group] button	Delete an alert group. See section 1.8.4.
4	All extension button	Click to open/close the detail setting window for all groups ([+]: Open all groups, [-]: Close all groups).
5	[+]/[-] button	Click to open/close the detail setting window for the selected group ([+]: Open, [-]: Close).
6	[Group No.]	Group number
7	[Priority]	The priority of the alert group (Alarm/Warning/Caution). The prior- ity of all grouped alerts is the same.
8	[Category]	The category of the alert group (A to C). The category of all grouped alerts is the same.
9	[Group Text]	Text shown on the display when an alert in an alert group occurs. The number in "< >" means the number of alerts.
10	[Details] but- ton	Change the settings for the alert group. See section 1.8.3.
11	[Type No.]*	The equipment type which generates the alert.
12	[Data Type]*	The alert sentence format (ALF or ALR). This is dependent on the equipment connected to this system.
13	[Alert No.]*	Alert number.
14	[Alert Name]*	Alert Name.
15	[+]/[-] button (ALF)	Click to open/close the alert instance data ([+]: Open, [-]: Close). This appears only when the alert sentence is ALF format.
16	Instance data*	<ul><li>Show/Close the instance data.</li><li>[Instance ID]: The instance ID of the alert</li><li>[Alert Description]: Contents of the alert instance.</li></ul>
17	[Import] button	Import the specified group setting.
18	[Export] button	Export the specified group setting.

\*: The columns are empty or in red for any of the following cases.

- An alert which is preset in another alert group.
- An alert which is not included in the alert definition.
- An ALR sentence is assigned an ALF alert number.
- The Priority or Category of the alert is different from the ones of the group.
- 3. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.8.2 How to add an alert group

An alert group can be added newly. The maximum number of alert groups is 1,000.

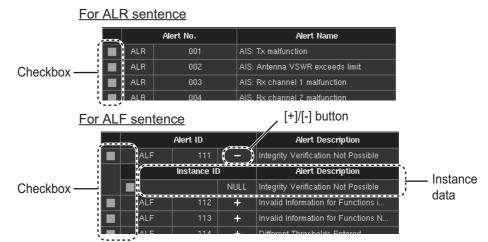
 Click the [New Group] on the [Alert Group Setting] window referring to the figure in step 2 of section 1.8.1. The [New Group] window is shown.
 Note: When 1,000 alert groups have already been registered, the message "Too many groups. Please delete group" is shown. If this occurs, delete any alert group to make space for new alert group.

New G	moun						_
I new c	noup	_		_			_
	roup Setting						
	Group	No.		-			
	Group '	Fext					
	Priori	ty	Warning		Category	B 🗾	
	Detail Informa	II					
	lert Setting						
	Type No. : 占					Remove All Alert	
			Cancel		ОК		

2. Set the options referring to the table shown below.

ltem	Remarks
[Group No.]	Set the alert group number.
[Group Text]	Enter the text (max. 64 characters) to show on the display when an alert included in this alert group occurs.
[Priority]	The priority of the alert group (Alarm/Warning/Caution). The priority of all grouped alerts is the same.
[Category]	The category of the alert group (A to C). The category of all grouped alerts is the same.
[Detailed Information]	Set the detail information (max. 1023 characters) for the alert group.

3. From the [Type No.] pull-down list in the [Alert Setting] window, select the equipment that handles the alert that you want to register in this group. The alert list appearance depends on the external equipment's sentence format.



4. Check the checkbox of the alert to be set in the alert group (multiple selection possible).

**Note:** To unregister all alerts from the alert group, click the [Remove All Alert] button (see the figure in step 1.).

5. Click the [OK] button to close the [New Group] window.

- 6. To set alerts for other equipment, click the [Details] button of the added alert group (see the figure in step 2 of section 1.8.1.). The [Group Details] window is shown.
- 7. Set the alert to the alert group with the same procedure as step 3 to step 5.
- 8. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.8.3 How to edit an alert group

 Click the [Details] button of the alert group to edit on the [Alert Group Setting] window, referring to the figure in step 2 of section 1.8.1. The [Group Details] window is shown.

Group Setting Group No.	193		
Group Text	Lost Target Alert		
Priority	Warning 🔽	Category	A
Detailed Information			
Alert Setting			

- 2. Set the appropriate items in the [Group Setting] column referring to the step 2 of section 1.8.2.
- 3. Select the alert to add in the alert group referring to the step 3 to step 4of section 1.8.2.
- 4. Click the [OK] button to close the [Group Details] window.
- 5. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.8.4 How to delete an alert group

1. Click the [Delete Group] button on the [Alert Group Setting] window, referring to the figure in step 2 of section 1.8.1. The list of the alert groups is shown in the [Group Details] window.



- 2. Check the checkbox of the alert group to delete. To delete all groups, check the "Delete All" box.
- 3. Click the [OK] button.
- 4. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

# **1.8.5** Alert Definition setting for each equipment

You can create alert definitions and activate/deactivate the alert(s) for each external equipment or sensor.

- 1. Access the [Common Installation Setting] menu, then select [Alert Define List] on the tab bar.
- 2. Select the appropriate equipment type on the menu bar. For example, select [EC-DIS]  $\rightarrow$  [FMD-3100] to set the alert definitions for FMD-3100.

**Note:** The equipment and sensors shown on the menu bar depend on the [Installation Parameters] menu settings.

<u> O</u> FMD	-310		¥=	ource : Navigatio	in 🔽		Type : [ ALF )) Export (19)
6-+		Alert 10					Edit
®=	- 0	Instanc	Alert Description	Priority	Categor	nput U	Details
9	۲	000001	User Chart Danger Area	Warning 🔽	A 🔽	Internal	Details 📤
		000002	Traffic Separation Zone	Warning 🔽	A 🗹	Internal [	Details
		000003	Inshore Traffic Zone	Warning 🔽	A 🗹	Internal	Details
		000004	Restricted Area	Warning 🛛 🖂	A	Internal	Details
	-	000005	Caution Area	Warning 🔽		Internal <b>F</b>	Details

3. Set the appropriate options referring to the table shown below.

	ltem	Remarks
1	Equipment type	Selected equipment type.
2	[Source]	Define the source category to which the alert is assigned for display in the AMS mode's alert list window ([Navigation], [Communication] or [External]).
3	[Data Type]	Alert sentence format (ALF or ALR). For sensors, select the alert notification sentence from the pull-down list.
4	[New Alert] button	Add a new alert definition. See section 1.8.6.
5	[Delete Alert] but- ton	Delete the alert definition. See section 1.8.8.
6	Alert extension button/ All selection checkbox	<ul> <li>[+]/[–]: Click to open/close all alerts ([+]: Open, [-]: Close). This appears when the alert notification sentence is ALF.</li> <li>Check the checkbox to select all alert instances. This appears when the alert notification sentence is ALF.</li> </ul>
7	Separate change button	<ul> <li>[+]/[–]: Click to open/close the detail window for the alert ([+]: Open, [-]: Close).</li> <li>Check the checkbox to select the alert, and all instances are selected for ALF sentence. This only appears when the alert notification sentence is ALF.</li> </ul>
8	Switching check- box (for alert in- stance)	<ul> <li>Show all instances or show only valid state instances. This only appears when the alert notification sentence is ALF.</li> <li>[♥]: Show the data for all instances.</li> <li>[♥]: Show the data for activated instances.</li> </ul>
9	Checkbox to acti- vate/deactivate	Check the checkbox to activate the alert.
10	[Alert No.] (ALR) [Alert ID] (ALF)	Alert number
11	[Instance ID]	Instance number. This appears when the alert notification sentence is ALF.

	ltem	Remarks
12	[Alert Name] (ALR) [Alert Description] (ALF)	Alert name (editing possible)
13	[Priority]	The priority of the alert group (Alarm/Warning/Caution), pos- sible to edit.
14	[Category]	The category of the alert group (A to C), possible to edit.
15	[Input Unit]	The unit which input the alert.
16	[Details] button	Show the detail window for the alert. See section 1.8.7.
17	[Edit] button	Edit the alert number. This appears when the alert notifica- tion sentence is ALF.
18	[Import] button	Import the alert definition for currently displayed equipment.
19	[Export] button	Export the alert definition for currently displayed equipment.

4. Select the appropriate equipment on the menu bar to activate the alert for each equipment. For example, the alert number "153" can be activated for No.1 ECDIS and deactivated for No.2 ECDIS. The following figure is the sample when the No.1 ECDIS is selected. The alerts are listed based on the alert definition of the equipment.

No.1	ECD	IS				Dat	аТуре	9 : [ ALF ]
+	0	Alert ID						
-		30001					ŀ	<b>^</b>
	₹	Instance ID	Alert Description	Priority	Category	Input Unit		
		000001	Main Monitor Fan1 Rotation Sp	Caution	В	Internal	<b>^</b>	
		000002	Main Monitor Fan2 Rotation Sp	Caution	В	Internal		
		000003	Main Monitor Fan3 Rotation Sp	Caution	В	Internal		
	-	000004	Main Manifes Front Datables Co.	0		1		

- 5. Check the checkbox of the alert to activate.
- 6. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.8.6 How to add an alert definition

An alert definition can be added newly. The maximum number of alert definition is 1,000.

 Click the [New Alert] button on the alert definition window referring to the figure in step 2 of section 1.8.5. The [New Alert] window is shown.
 Note: The 1,000 alert definitions have been registered, the message "Too many alert. Please delete any alert." is shown. If this occurs, delete any alert definition to make space for the new alert definition.

	FM	D-31	00 - New Alert		
Alert Description	-				
Alert ID	-		Instance ID	-	
Alert No. ( ALR )	000	$\sim$	Internal Notify No.	-	
Input Unit	Internal	$\sim$	ls Active	YES	
Priority	₩aming	$\sim$	Category	В	
Emergency Icon	None	<u> </u>	Emergency Buzzer	None	
Escalation Mode	₩aming	$\sim$	Escalation Time	120 sec	
Escalation Transfer	Enable	<u> </u>	Transfer Time	30 sec	×
Integrated Alert	NO	$\sim$	Send VDR	YES	
Clear No	n-Ack Alert	when I	Rectified	NO	
Detailed Information					

2	Set the ontions	referring to the	table shown below.
∠.			

ltem	Remarks
[Alert Name] (ALR)	Enter the alert name (max. 64 characters).
[Alert Description] (ALF)	Enter the elect number for the ALE contenes
[Alert ID] (For ALF)	Enter the alert number for the ALF sentence.
[Instance ID] (For ALF)	Enter the Instance ID.
[Internal Notify No.]	Enter the notify number of the equipment. For sensors, this is automatically numbered.
[Input Unit]	Select the input source for the alert.
	<ul> <li>For other than sensors: [Internal], [Digital]</li> <li>For sensors: [CCRS], [Digital], [MODBUS]</li> </ul>
[Is Active]	Activate/Deactivate the alert. [YES]: activated, [NO]: deactivated.
[Priority]	The priority of the alert group ([Emergency]/[Alarm]/[Warn- ing]/[Caution]).
[Category]	The category of the alert group (A to C).
[Emergency Icon]	Select the icon for the emergency alert. Available only for alerts with [Priority] set to [Emergency].
[Emergency Buzzer]	Select the buzzer sound for the emergency alert. Available only for alerts with [Priority] set to [Emergency].
[Escalation Mode]	<ul> <li>Select the priority that escalates the status of an alert, [Alarm] or [Warning]. Available only for alerts with [Priority] set to [Warning].</li> <li>[Alarm]: When the alert is left unacknowledged, the priority is changed to [Alarm].</li> <li>[Warning]: When the alert is left unacknowledged, the pri- ority remains as [Warning]. Then, the alert buzzer sounds again.</li> </ul>
[Escalation Time]	Set the time to wait before activating the escalation function against an alert. Available only for alerts with [Priority] set to [Warning].
[Escalation Transfer]	Enable or disable transfer of an Alarm priority alert in the transfer escalation mode. Available only for alerts with [Escalation Mode] set to [Alarm].
[Transfer Time]	Set the time to wait before transferring an Alarm priority alert in the transfer escalation mode. Available only for alerts with [Escalation Mode] set to [Alarm].
[Integrated Alert]	Keep the default setting.
[Send VDR]	Select [YES] to transfer the ALR sentence to the VDR.
[Clear Non-Ack Alert when Rectified]	Select [YES] to delete the non-acknowledged alerts auto- matically when they are rectified.
[Detailed Information]	Enter the detail information (max. 1023 characters) of the alert.

3. Click the [OK] button to close the [New Alert] window.

4. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## 1.8.7 How to edit an alert definition

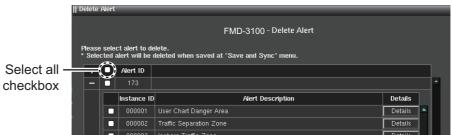
 Click the [Details] button on the alert definition window of equipment type, referring to the figure in step 2 of section 1.8.5. The [Alert Details] window is shown.

Alert Details FMD-3100 - Alert Details						
Alert Description	System Functior	n Lo	ost			
Alert ID	110		Instance ID	-		
Alert No. (ALR )	110	$\sim$	Internal Notify No.	110		
Input Unit	Internal	$\sim$	Is Active	NO	~	
Priority	Alarm	$\sim$	Category	в	~	
Emergency Icon	None	$\sim$	Emergency Buzzer	1a.	~	
Escalation Mode	Warning	$\sim$	Escalation Time	60 sec	~	
Escalation Transfer	Enable		Transfer Time	30 sec	~	
Integrated Alert	YES	$\sim$	Send VDR	YES	~	
Clear No	n-Ack Alert whe	en I	Rectified	NO	~	
Detailed Information						
	Cancel	]	ОК			

- 2. Edit the options referring to step 2 of section 1.8.6.
- 3. Click the [OK] button to close the [Alert Details] window.
- 4. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

## **1.8.8** How to delete an alert definition

1. Click the [Delete Alert] button on the alert definition window of equipment type, referring to the figure in step 2 of section 1.8.5. The [Delete Alert] window is shown.



- 2. Check the checkbox to delete the alert. If all alerts are deleted, check the "Select all" checkbox.
- 3. Click the [OK] button.
- 4. To save the configuration, perform a consistency check, then save the configuration data on the [Save and Sync] menu.

# 1.9 [Data Sharing] Menu

The [Data Sharing] menu is not used.

# 1.10 [Save and Sync] Menu

After completing the settings on the [Own Ship Setting], [Installation Parameters], [CCRS], [TCS], [AMS] and [Alert Define List] menus, confirm the consistency of the configuration and save it on this menu. By saving the configuration, the configuration data can be copied to other units connected to the network. The configuration data can be saved to a medium and loaded to a unit.

# 1.10.1 Consistency check and save the configuration

1. Access the [Common Installation Setting] menu and click [Save and Sync] on the tab bar.



- 2. Click [Consistency Check] to confirm the consistency of the setting. When the consistency check is completed, the result of the check is shown. If an inconsistency is detected, an error message appears. You can not save the configuration until the inconsistency is corrected. Check the setting and correct the inconsistency, then perform the consistency check again.
- When the message "Check consistency completed, you can save data. Please push the "Save" button" is shown, click [Save] in the Info bar. The pop-up message shown below appears.



4. Click [OK] to save the configuration.

If other ECDIS units and Sensor Adapters are connected to the network, a confirmation message similar to the one shown below appears. The message does not appear if a unit in the network is not powered. Click [OK] to save the configuration.

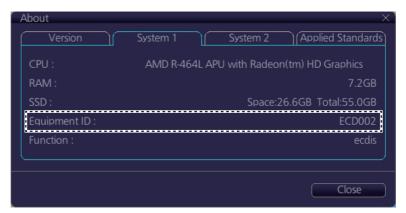


**Note:** If you did the consistency check and save after entering settings on [Own Ship Setting], reboot the unit.

- 5. After saving the configuration, confirm that the Equipment ID of all units are correct.
  - Panel computer unit PCU-3000 Check the Equipment ID as shown below.
    - 1) Click the [?] button on the Status bar.
    - 2) Click [About].



3) Check [Equipment ID] on the [System1] tab.



Sensor adapter

If the Equipment ID of the sensor adapter is not correct, the alert shown below appears.

```
"Sensor adapter: Sensor Adapter * COM Timeout" (* = 1 to 16)
```

If the Equipment ID is not correct, set the Equipment ID on the [Basic Setting] menu (see section 1.2). At this time, turn off all units except the unit to be set, or disconnect all LAN cables except the cable for PC.

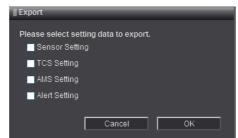
## 1.10.2 How to save the configuration data to a medium

This function is only available through a LAN-connected PC. You can save the configuration data to USB memory. Set the medium and then do as follows:

1. Select [Export] at the upper right of the [Save and Sync] menu.



The window shown below appears.



- 2. Select the configuration data type that you want to save, and then click [OK].
  - [Sensor Setting]: Configuration data on the [Own Ship Setting], [Installation Parameters] and [CCRS] menu.
  - [TCS Setting]: Configuration data on the [TCS] menu. Not used on FMD-3100.
  - [AMS Setting]: Configuration data on the [AMS] menu.
  - [Alert Setting]: Configuration data on the [Alert Define List] menu.
- 3. Select where to save the configuration data. The file name "SettingFiles.tar" is created.

## **1.10.3** How to load the configuration data

This function is only available through a LAN-connected PC. You can load the configuration data from USB memory. Set the medium and then do as follows:

1. Click [Import] at the upper right of the [Save and Sync] menu.



- 2. Select the configuration data file ("SettingFiles.tar").
- 3. Select the configuration data type that you want to load, and then click [OK].
  - [Sensor Setting]: Configuration data on the [Own Ship Setting], [Installation Parameters] and [CCRS] menu.
  - [TCS Setting]: Configuration data on the [TCS] menu. Not used on FMD-3100.
  - [AMS Setting]: Configuration data on the [AMS] menu.
  - [Alert Setting]: Configuration data on the [Alert Define List] menu.
- 4. After loading the data, perform the consistency check and save the configuration data on the [Save and Sync] menu.

# 1.11 [System Monitor] Menu

TCS	AMS	Alert Define List	Data Sharing	Save and Sync	System Monitor	
Processor Unit	Main S	Status		Б	cport Log	
Self-test UTC 15:34:44 05 Dec 2013		ltem		Value		
Vertices Processor Unit		Equipment ID	ECDO	01		
Main Status		Processor Unit Serial Numl	ber Not C	onnected		
CPU Board Status		BIOS Version	4.6.5			
		CPU Board Version				
Boot Device		CPU Board Serial Numbe	er			
Storage Device		System Total Running Time (	hour) 15			
Software Version		System Start Count	33			
Process Information		Self-test Result	ОК			
Monitor		UTC Sync Source	GPS			
Control Unit		UTC Sync Status	Sync			
Radar Sensor (FCR-2xx9)		UTC Sync difference (see	:) 1			
<ul> <li>Radar Sensor (FAR-3000)</li> <li>Sensor Adapter</li> </ul>						

This menu displays system information of units as shown below.

- Panel Computer Unit (PCU-3000)
- Trackball Control Unit
- Sensor Adapter

Click [System Log] to save the log data to the connected PC.

# 1.12 [Software Update] Menu

You can update the software for the PCU-3000 and Trackball Control Unit RCU-030 on the [Software Update] menu. To update sensor adapter software, see section 2.3.

**Note:** To update the software with the update file, access the [Common Installation Setting] menu via LAN connection. To update the software with the DVD, access the [Common Installation Setting] menu with the Trackball Control Unit.

Alert Define List Da	ata Sharing	Save and Sync	System Monitor	Software Update	Factory Test & Default 🖪 🕨
Processor Unit	Proces	ssor Unit			
Radar Sensor (FCR-2xx9)	Select u	pdate file.			
Radar Sensor (FAR-3000)			Select File		
Radar Sensor (FAR-3000 PSU)					
Control Unit		Software	Current V	ersion	Updated Version
		Boot	2450118-xx.xx.xx	xx	
		System	2450119-xx.xx.xx	xx	
		Radar Application			
		ECDIS Application	2450074-xx.xx.xx	xx	
		Common Application	2450077-xx.xx.xx	xx	
		AMS Application			
		Conning Application			
		TCS Application			
					Update Software
			Last Save:12:08 27 No	v 2013	

- 1. For LAN connection, connect the USB memory which has the update file to the PC connected via LAN. For access with the Trackball Control Unit, insert the update DVD in the DVD drive.
- 2. Access the [Common Installation Setting] menu and click [Software Update] on the tab bar.

For the IP address of the unit to update, see the Equipment ID list at the back of this manual.

- 3. Select the unit to update from the menu bar.
- 4. Click [Select File] to select the update, and then click [OK]. The current software version and updated software version are displayed.
- 5. Check the checkbox for the software to update.
- 6. Click [Update Software]. A confirmation message appears.

Attentio	n							
?	) Setting data will be saved and INS system will reboot automatic. Do you wish to continue?							
		Cancel	ОК					

- Click [OK] to update the software. The progress bar shows the update progress. After completing the update, the system is automatically rebooted.
- 8. **If connected to the gateway network via LAN**, the link is shown on the display after completing the system reboot. Click the link on the display to access the [Common Installation Setting] menu.

**If connected to the sensor network**, enter the IP address of the sensor network to access the [Common Installation Setting] menu after completing the system reboot.

# 1.13 [Factory Test & Default] Menu

The [Factory Test & Default] menu does the factory test to check operation and restores the system default settings.

### Factory Test

Click [Start] to perform the factory test. The result of the test is shown on the display.

Data Sharing	Save and Sync	Radar Installation	System Monitor	Software Update	Factory Test & De	fault 🔺 🕨
Data Sharing	Factory TEST CP TEST RA TEST RA TEST INT TEST EX	Test JLUAD: [UK] M SIZE: [OK] M SAPACITY: [OK] ERNAL STORAGE:[OK] TERNAL STORAGE:[OK] NTROL-UNIT: [1] OCESS: [OK] V: [NG] D-DRIVE: [NG] D-DRIVE: [NG] VI: [N	sult of the test	ult of the test is shown in this area		
	Factory Reset to	<b>Default</b> o Factory Default	Last Save:23:53 20 J	St.	art Sto	

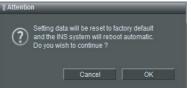
If "NG" appears, confirm the state of the unit on the [System Monitor] menu.

### **Factory Default**

The factory default function restores all factory defaults (except the settings on the [Basic Setting] menu). In the default arrangement all ECDIS units powered in the network are restored to default condition.

**Note:** Restoring the unit to factory default will not erase user chart data or route data.

1. Click [Reset to Factory Default]. The following message appears on the screen.



- 2. Click [OK] to restore the system to the default setting. The progress bar shows update progress. When the restoration is completed, the system is automatically rebooted.
- If connected to the gateway network, the link is shown on the display after completing the system reboot. Click the link on the display to access the [Common Installation Setting] menu. If connected to the sensor network, enter the IP address of the sensor network to access the [Common Installation Setting] menu after completing the system reboot.

# 1.14 [Conning] Menu

The [Conning] menu configures the layout and data to show on the conning display.

Data Sharing	Save and Sync	System Monitor	Software Update	Factory Test & Default	Conning
Conning (3x6)	Sheet.1				Copy From
Wide Conning (4x6)	Comp	onents	Layout		
Side Conning (1x9)	Size	⊠s ⊠m ⊠l	Compess 0° x 0° 10° 20° 30° x		
Tini Conning (1x5)	Alert		018.3 032		
Sheet.1	A	Ann an Anganatan In Annon Sapaha Li Sind Cammel Fanzen fan Li waarne nak teert (nak)	-1.5knt		
Save / Import / Export	0 m v	construction (see 1 mile) (1 Actuation (see 1 mile)	16.1knt		
Decoder Define Import / Export	<u>1</u>	C Actuator Fail Field Code Innecessari C FU Fail			
Decoder Import / Export		Norman (Contraction)	0.3knt		
		Promotion	Honzontal Bar		
		Promotion			
		Ruh 350.0% 2000/04			
		-)			
	Compas	20			
	Commans	55 GYR02			
	01	and the state of t			
		Id Unit Display			
			Last Save:12:08 27 M	Nov 2013 Discard Ch	nanges

Menu item	Explanation
Items on the menu bar	
[Conning (3x6)]	No use.
[Wide Conning (4x6)]	
[Side Conning (1x9)]	
[Mini Conning (1x5)]	Consists of 5 blocks (1x5).
[Save/Import/Export]	You can save the conning display data to a medium and load it
	on the network.
[Decoder Define Im- port/Export]	No use.
[Decoder Import/Ex-	No use.
port]	
Items in the view area	
[Name]	No use.
[Show]	No use.
[Copy From]	No use.
[Components]	Select the components to show on the conning display. The
	components are available in three sizes: [Small], [Medium],
	[Large]. The [Small] components occupy one block. The [Medi-
	um] components occupy two blocks. The [Large] components
	occupy three or more blocks. Check the size of the component to show on the [Components] window. Select the component
	and click it to show the component on the [Layout] window.
[Layout]	You can configure the layout and data to show on the conning
	display. Drag and drop the components to configure the layout.
	Click 📧 to delete a component from the [Layout] window. To se-
	lect the data source for a component, click <b>see a</b> to display the
	advanced settings window. See the procedure on
	section 1.14.1.

#### 1. INITIAL SETTINGS AND ADJUSTMENTS

## 1.14.1 How to select the data source

You may select the data source for each component window in the layout. Click on the advanced settings window (see section 1.14.2 for specific component details) to display the [Data Source Select] window. Select the data source in the [Data Source Select] window to show the respective data on the conning display.

Data	a Source Select	
	Selected Data Source NMEA.II0061,RSA,RudderAngleSB(RSA)	
	Туре	
	👁 Digital 🔹 Analog 💿 NMEA 🌑 OwnShip	
	Source	
	RDR001 ( 110061 ) ( No.1 Rudder Sensor )	
	Decoder	
	Rudder	
	CommandedRudderDir(HTC) CommandedRudderDir(HTD) RudderAngle(RSA) RudderAngleS(RSA) RudderAngleS(RSA) RudderAngleS(RSA)	
	RudderAngle(ROR)	
	Cancel OK	

- [Selected Data Source]: This is automatically generated when [Type], [Source] and [Decoder] are selected.
- [Type]: Select the data source type.

Setting	Description
[Digital]	Displays contact input data.
[Analog]	Displays analog input data.
[NMEA]	Displays data received directly from NMEA device.
[Own Ship]	Displays Own Ship data received from own ship management program.

- [Source]: Select the sensor from which the data will be sourced.
- [Decoder]: Select which data from the source sensor to use.

## 1.14.2 Advanced settings window

**Note:** Do not use the following components:

- CommonMP
- Fore & AFT bridge (Wide) U10662/ 10683/10782/1340
- Motion Sensor
- Steering Mode for GSI

### [Small] components (one block)

• [Alert (Current Only)]



#### Compass

Compass	GYRO1	Compass		
10° 20° 3	<sup>30°</sup> 40° ⊥,,, 50°	Title		
		Sensor Name Source		
് വടവം	030° 🔨	Primary Source		
y 0.50		Secondary Source		
		Decimal Place	Show	
		Γ	Cancel OK	

[Title]: Enter the title of the component.

[Sensor Name Source]: Enter the sensor name.

[Primary Source]: Select the data source of the upper pointer. [Secondary Source]: Select the data source of the lower pointer. [Decimal Place]: Check the checkbox to show the value after decimal point.

Data And Unit Display

Data And Unit Display	GYRO1	Data And Unit Dis	play	-	_	-	-	-
Heading	080.1 °		Layout	<ul> <li>Title</li> </ul>	Equal interval			
Concrator	1200 kw		Label					
Generater	1200 KVV	Object1	Source					
			Decimal Place	Show	Zero Padding	1	Unit	
			Label					
		Object2	Source					
			Decimal Place	Show	Zero Padding	1	Unit	
			Label					
		Object3	Source					
			Decimal Place	Show	Zero Padding	1	Unit	
		5 lines	Show					
			Label					
		Object4	Source					
			Decimal Place	Show	Zero Padding	1	Unit	
			Label					
Obj		Object5	Source					
			Decimal Place	Show	Zero Padding	1	Unit	
			Ca	ncel	ОК			

[Layout]: Check the checkbox of [Title] to show the title of the component. Check the checkbox of [Equal interval] to show only numeric data.

[Label]: Enter the data name of [Object 1] to [Object 4]. Example: "Heading", "Speed", etc.

[Source]: Select the data source of [Object 1] to [Object 4].

- Fore & AFT bridge (Wide) Havyard122
- Fore & AFT bridge (Wide) NB802/818/ 830/832/857
- Nav. Information For GSI

[Decimal Place]: Check the checkbox to show the value after decimal point. [Unit]: Enter the unit.

[5 lines]: Check the checkbox to show five lines of data on the component.

#### Dual Horizontal Bar

Rudder A				Dual Horizontal Bar				
8.8	-9.4	-12.5	17.2	Title				
-45.0	45.0	-45.0	45.0		HorizontalBar1		HorizontalBar2	
		┟╴┶╴┵╶┽╸┢		Primary Source				
				Secondary Source				
				Start Value	-100		-100	
				End Value	100		100	
				Decimal Place	✓ Show		✓ Show	
				Mathematical Sign	✓ Show		✓ Show	
				Mirror Vertically	Apply		Apply	
					Cancel	ок		

[Title]: Enter the title of the component.

[Primary Source]: Select the data source of the bar.

[Secondary Source]: Select the data source of the triangle below the bar.

[Start Value]: Set the minimum value of the bar.

[End Value]: Set the maximum value of the bar.

[Decimal Place]: Check the checkbox to show the value after decimal point. [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

[Mirror Vertically]: Check the box to invert the position of the bar and value.

• Empty



[Title]: Enter the title of the component.

• [Final ETA]

FinalETA		FinalETA
	**.** ** ***	
Final ETA UTC:	• • •	Title FinalETA
Plan Speed:	***.*kn	Cancel OK
Actual ETA UTC:	**.** ** ***	

[Title]: Enter the title of the component.

Generator Engine

Genera	ator Engine			I Generator Engine		
			~~~~	Title	Generator Engine	
Eng.1	10 kW Rated	11 kW	90.9 %	Label	Actual Source	Rated Source
Eng.2	10 kW Rated	11 kW	90.9 %	Eng.1		
				Eng.2		
Eng.3	10 kW Rated	11 kW	90.9 %	Eng.3		
					Cancel OK	

[Title]: Enter the title of the component.

[Label]: Enter the data name.

[Actual Source]: Select the data source of the actual engine generating power. [Rated Source]: Select the data source of the rated engine generating power.

#### • Graph



[Title]: Enter the title of the component.

[Type]: Set the graph type.

- [(2x)Time/Y-graph]: The [Primary (Y1)] and [Secondary (Y2)] are used as Y-coordinate for two independent graphs. The time is used as the X-coordinate for both graphs.
- [(1x)X/Y-graph]: The [Primary (Y1)] input is used for the X-coordinate and the [Secondary (Y2)] for the Y-coordinate.

[Label Source]: No use.

[Mode Source]: No use.

[Label]: Enter the title of [Primary (Y1)] and [Secondary (Y2)] graph.

[Source]: Select the data source of [Primary (Y1)] and [Secondary (Y2)].

[Unit]: Set the unit used in [Primary (Y1)] and [Secondary (Y2)] graphs.

[Smoothing]: Select [Apply] to smooth the graph.

[Scale | Range]: Set the display range of the Y-coordinate. Three display ranges can be entered.

[Time Span]: Set the display range of the X-coordinate.

[Sample Interval]: Set the interval of [Primary (Y1)] and [Secondary (Y2)] graph plot. [Scale Resolution]: Select the scale resolution of the graph.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Decimal Num]: Select the number of digits after decimal point.

[Mathematical Sign (Scale)]: Check the checkbox to show the minus sign (-) when the value of the Y-coordinate is minus.

[Mathematical Sign (Value)]: Check the checkbox to hide the minus sign (-) when the value above graph is minus.

Horizontal Bar

Horizontal Bar		Horizontal Bar				
-100	100	Title				
	100	Left Source				
		Center Source				
		Right Source				
		Primary Source				
		Secondary Source				
		Start Value	-100			
		End Value	100			
		Decimal Place	Show	Mathematical Sign	V Show	
		Mirror Vertically	Apply			
			Cancel	ок		

[Title]: Enter the title of the component.

[Left Source]: Select the data source of the value shown at the upper left of the bar. [Center Source]: Select the data source of the value shown above the bar. [Right Source]: Select the data source of the value shown at the upper right of the

[Right Source]: Select the data source of the value shown at the upper right of the bar.

[Primary Source]: Select the data source of the green bar. [Secondary Source]: Select the data source of the triangle below the bar. [Start Value]: Set the minimum value of the bar.

[End Value]: Set the maximum value of the bar.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

[Mirror Vertically]: Check the checkbox to invert the position of the bar and value.

Horizontal Ruler

lorizontal Ruler		Horizontal Ruler	
00	100		
Y		Title	
00.0 50.0 0.0	50.0 100.0	Top Left	
		Top Center	
		Top Right	
		Bottom Left	
		Bottom Center	
		Bottom Right	
		Primary Source	
		Secondary Source	
		Start Value	-100
		End Value	100
		Decimal Place	Show Mathematical Sign Show
			Cancel OK

[Title]: Enter the title of the component.

[Top Left]: Select the data source of the value shown at the upper left of the bar. [Top Center]: Select the data source of the value shown above the bar.

[Top Right]: Select the data source of the value shown at the upper right of the bar.

[Bottom Left]: Enter the text shown at the lower left of the bar.

[Bottom Center]: Enter the text shown below the bar.

[Bottom Right]: Enter the text shown at the lower right of the bar.

[Primary Source]: Select the data source of the indication shown with white triangle. [Secondary Source]: Select the data source of the indication shown with gray triangle.

[Start Value]: Set the minimum value of the bar.

[End Value]: Set the maximum value of the bar.

[Decimal Place]: Check the checkbox to show the value after decimal point. [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

### Numeric Data Display

WGS 84			1	Numeric Data Display	1		
Lat		37.249'N		Title Source	-		
Lon	135	29.130'E			Label	-	
					Limit	12	
				Object1	Source	-	
				Zero Padding	1		
					Unit	-	
					Label	-	
					Limit	12	
			Object2	Source	-		
					Zero Padding	1	
					Unit	-	
					Cancel	ОК	

[Title]: Enter the title of the component.

[Source]: Select the data source same as [Object 1] or [Object 2] to show the abbreviated name of the data source unit.

[Label]: Enter the data name of [Object 1 (or 2)].

[Limit]: Set the digit number of the data of [Object 1 (or 2)].

[Source]: Select the data source of [Object 1 (or 2)].

[Zero Padding]: Set the number of decimal points to show "0" in the [Source] for each object.

[Unit]: Set the unit of data for [Object 1 (or 2)].

Rudder



[Title]: Enter the title of the component.

[Location]: Select the rudder location from the pull-down list.

[Rudder Title]: Enter the title of the [Rudder 1 (or 2)] indicator.

[Primary Source]: Select the data source of the long pointer of [Rudder 1 (or 2)] indicator.

[Secondary Source]: Select the data source of the long pointer of [Rudder 1 (or 2)] indicator.

[Max Angle]: Set the maximum rudder angle of [Rudder 1 (or 2)] indicator.

[Scale Resolution]: Select the scale resolution.

[Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

[Zero Padding]: Set the number of decimal points to show "0" in the [Source] for each object.

[Unit]: Set the unit of data for [Object 1 (or 2)].

### • [Stabilizer Status]



[Title]: Enter the title of the component. [Object1 (to 4)]

[Label]: Enter the data name of [Object 1 (or 2)]. [Source]: Select the data source of [Object 1 (or 2)].

• [Steering Mode]

Set Course	*** * °
Steering Mode	Manual
Set and Drift	***.* °
	**.* kn

Thruster

Thruster				Thruster		
B.Thrust 1	750 kW	Rated	1000 kW	Title	Thruster Actual Source	Rated Source
B.Thrust 2	500 kW	Rated	1000 kW	B.Thrust 1 B.Thrust 2		
S.Thrust	600 kW	Rated	1000 kW	S.Thrust		
					Cancel OK	

[Title]: Enter the title of the component.

[Label]: Enter the data name.

[Actual Source]: Select the data source of the actual thruster generating power. [Rated Source]: Select the data source of the rated thruster generating power.

Track Order

Track Order		Track Order	
Set Course	021.8°		
Set Radius	1.0 NM	Title	
ROT	001.0 °/min		
Mode	GoSEA Appr. Enabled		Cancel OK

[Title]: Enter the title of the component.

Watch Alarm

WatchAlarm Backup: Captain			Watch Alarm		
Dackup, Capitalli		01:55	Title		
00:00	01:30	03:00	Backup Source		
00.00	01.50	05.00	Stage Source(ALR)		
			Stage Source(wtr)		
			Maximum Time Source		
			Remaining Time Source		
				Cancel OK	

[Title]: Enter the title of the component.

[Backup Source]: Select the data source of the backup officer name.

[Stage Source (ALR)]: Select the Stage Source (ALR).

[Stage Source (wtr)]: Select the Stage Source (wtr).

[Maximum Time Source]: Select the data source of the watch time setting. [Remaining Time Source]: Select the data source of the remaining time.

## [Watch Alarm (Multi)]

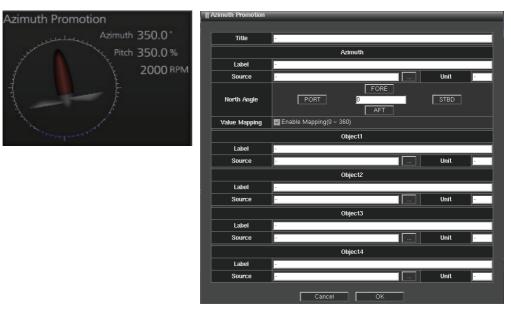


[Title]: Enter the title of the component.

[Backup Source]: Cannot be changed. Set automatically. [Stage Source (ALR)]: Select the Stage Source (ALR). [Stage Source (wtr)]: Select the Stage Source (wtr). [Maximum Time Source]: Select the Maximum Time Source. [Remaining Time Source]: Select the Remaining Time Source.

### [Medium] component (two blocks.)

Azimuth Propulsion



[Title]: Enter the title of the component.

### <u>Azimuth</u>

[Label]: Enter the data name shown at the bottom of the indicator.

[Source]: Select the data source of the azimuth propulsion.

[Unit]: Enter the unit for the azimuth propulsion.

[North Angle]: Enter the north angle relative to the screen. Normally, enter "0". [Value Mapping]: When the checkbox is checked, if the input azimuth angle is other than 0° to 359°, this equipment calculates the input value so that the azimuth angle is within 0° to 359°. For example, the input azimuth angle is "-90°", the displayed value is "270°". When the checkbox is unchecked, this equipment shows the same value as the input data.

### Object

[Label]: Enter the data name of [Object1 (to 4)].

[Source]: Select the data source of the numeric data for [Object1 (to 4)]. [Unit]: Enter the unit for [Object1 (to 4)].

• [Check ETA]

CheckETA		CheckETA	
WPT:	****	Title	CheckETA
WPT Name:	****		Cancel OK
Distance:	***.*NM		
Plan UTC:	**.** ** *** ****		
Actual UTC:	**:** ** *** **		
Off Plan:	**:**		
Suggested SPI	D: ***.*kn		

[Title]: Enter the title of the component.

Command Matrix

Command/Mode Status	CommandMatr	ix	-								-			-
	Title	E.					_	Contr	ol Type	8	-	Thruster Nu	m 5	
AFT DP AP						Con	trol Type	Label						
FORE JS Helm	Label1	AF	ΤS					Label	15	STBD				
	Label2	AF	ΓM					Label	16	DP				
BOW TT 1 - 💽 - 🔵 - 🔵 - 🔵 -	Label3	FO						Label	7	JS	_			
	Label4	PO	RT					Label	18	AP	_			
BOW TT 2 - 🔘 - 🔵 - 🔵 - 🔵 -	Name	Sourc	:e1	Source	2 SI	ource3	Source	4 S	ource5	Sour	ce6	Source7	Source	B
	BOW 1	-		·			·							
BOW TT 3 - 💽 - 💭 - 💭 - 🔘 -	BOW 2	•		· .	. <u>.</u>		· .							
	BOW AZ 1		-						╞╢╧	╘─┥				
PORT MP - • • • • • • • • • • • • • • • • • •	PORT STBD		-	_					╞┼╧	╞═┥				4
	STBD		<u> </u>	-	-				╞╫╧	╞═┨		_		4
STBD MP - 🔵 - 🔵 - 🔵 - 🔵 - 🔘			<u> </u>					-	╞╫╧	╞═╉		_	—H	4
			=						╞╫═		Ħ		_	4
	-	-	ij.	- 1					╞╫═		÷	_ 12		۲.
						Cancel		ОК						

[Title]: Enter the title of the component.

[Control Type]: Set the number of columns for the matrix.

[Thruster Num]: Set the number of rows for the matrix.

[Control Type Label]: Enter the text that appears at the top of the matrix.

[Name]: Enter the text that appears at the left side of the matrix.

[Source1] to [Source8]: Set the source for the thruster data for the matrix.

Dial Meter

DialMeter Primary	DialTitle	DialMeter				
		Title				
64.5		Dial Title				
04.5		Primary Source				
	0.0	Secondary Source				
Secondary		Peak Source				
	-40.0 40.0	Unit				
-88.5		Start Value	-100			
	-80.0 80.0	End Value	100			
Peak	r/min	Angle	270	Rotation	0	
геак		Scale Resolution	COARSE	<b>×</b>		
75.5	• •	Decimal Place	Show	Mathematical Sign	Show	
/ 3.5			Cancel	ок		

[Title]: Enter the title of the component.

[Dial Title]: Enter the text to show above the indicator.

[Primary Source]: Select the data source of the long pointer of the indicator.

[Secondary Source]: Select the data source of the outer pointer of the indicator. [Peak Source]: Select the data source of the short pointer of the indicator. [Unit]: Set the unit of the data.

[Start Value]: Set the minimum value of the indicator.

[End Value]: Set the maximum value of the indicator.

[Angle]: Define the extent of the dial.

[Rotation]: It can be rotate the direction of the indicator. Normally, set to "0". [Scale Resolution]: Select the scale resolution.

[Decimal Place]: Check the checkbox to show the value after decimal point. [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value

is minus.

Drift And Radius

Drift and Radius	
Set Radius	1.0 NM
Actual Radius	0.96 NM
HDG	005.9 °
Drift	> 0.7 °
COG (POS)	006.6 °



[Title]: Enter the title of the component.

**Dual Azimuth Promotion** 



[Title]: Enter the title of the component.

[Location]: Select the position of thruster ([FORE] or [AFT]).

[Title]: Enter the title to show at the top of the indicator.

[Degree]

[Actual]: Set the source of the angle which the needle of the outer periphery points to (feedback angle of the thruster).

[Order]: Set the source of the angle which the needle of the inner periphery points to (actual azimuth of the thruster).

[Unit]: Enter the unit of measurement for the azimuth of the thruster. [RPM]/[MW]/[Lever]

A maximum of three data can be displayed under the indicator.

[Label]: Enter the name of the data shown beneath the analog indicator,

[Source]: Set the source of the data that appears beneath the analog indicator. [Unit]: Enter the unit for the data that appears beneath the analog indicator.

Dual Dial Meter



[Title]: Enter the title of the component.

[Dial Title]: Enter the title to show above [Dial Meter 1 (or 2)] indicator.

[Primary Source]: Select the data source of the long pointer of [Dial Meter 1 (or 2)] indicator.

[Secondary Source]: Select the data source of the outer pointer of [Dial Meter 1 (or 2)] indicator.

[Peak Source]: Select the data source of the short pointer of [Dial Meter 1 (or 2)] indicator.

[Unit]: Set the unit of the data.

[Start Value]: Set the minimum value of the [Dial Meter 1 (or 2)] indicator.

[End Value]: Set the maximum value of the [Dial Meter 1 (or 2)] indicator.

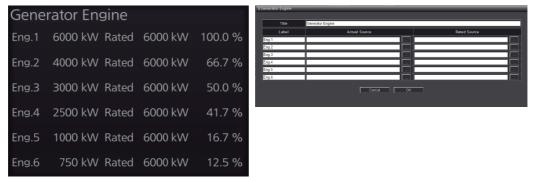
[Angle]: Define the extent of the dial.

[Rotation]: It can be rotate the direction of the [Dial Meter 1 (or 2)] indicator. Normally, set to "0".

[Scale Resolution]: Select the scale resolution of [Dial Meter 1 (or 2)] indicator. [Decimal Place]: Check the checkbox to show the value after decimal point.

[Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

### Generator Engine



[Title]: Enter the title of the component.

### [Label]: Enter the data name.

[Actual Source]: Select the data source of the actual engine generating power. [Rated Source]: Select the data source of the rated engine generating power.

Generator Engine Bar



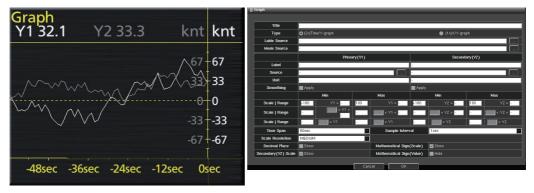
[Title]: Enter the title of the component.

[Number of Show]: Set the number of graphs.

[Label]: Enter the text on the upper of the graphs ([Object 1] to [Object 9]). [Source]: Enter the source of the graphs ([Object 1] to [Object 9]). [MAX Generate (kW)]: Enter the maximum values of the graphs ([Object 1] to [Object 9]).

[Source State]: Set the source that outputs operating status. The green indication of the graph means the generator is working, the red indication means the generator has stopped.

Graph



[Title]: Enter the title of the component. [Type]: Set the graph type.

- [(2x)Time/Y-graph]: The [Primary (Y1)] and [Secondary (Y2)] are used as Y-coordinate for two independent graphs. The time is used as the X-coordinate for both graphs.
- [(1x)X/Y-graph]: The [Primary (Y1)] input is used for the X-coordinate and the [Secondary (Y2)] for the Y-coordinate.

[Label Source]: No use.

[Mode Source]: No use.

[Label]: Enter the title of [Primary (Y1)] and [Secondary (Y2)] graph.

[Source]: Select the data source of [Primary (Y1)] and [Secondary (Y2)].

[Unit]: Set the unit used in [Primary (Y1)] and [Secondary (Y2)] graphs.

[Smoothing]: Select [Apply] to smooth the graph.

[Scale | Range]: Set the display range of the Y-coordinate. Three display ranges can be entered.

[Time Span]: Set the display range of the X-coordinate.

[Sample Interval]: Set the interval of [Primary (Y1)] and [Secondary (Y2)] graph plot. [Scale Resolution]: Select the scale resolution of the graph.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Secondary (Y2) Scale]: Check the check box to show the value input from the data source of [Secondary (Y2)].

[Mathematical Sign (Scale)]: Check the checkbox to show the minus sign (-) when the value of the Y-coordinate is minus.

[Mathematical Sign (Value)]: Check the checkbox to hide the minus sign (-) when the value above graph is minus.

• Graph (Wind Speed & Direction)



[Title]: Enter the title of the component.

[Label]: Enter the title of [Wind Speed] and [Wind Direction].

[Source]: Select the source of [Wind Speed] and [Wind Direction].

[Unit]: Enter the unit of [Wind Speed] and [Wind Direction].

[Smoothing]: Select [Apply] to smooth the graph.

[Scale | Range]: Set the display range of the Y-coordinate. Three display ranges can be entered.

[Time Span]: Set the display range of the X-coordinate.

[Sample Interval]: Set the interval of [Primary (Y1)] and [Secondary (Y2)] graph plot. [Scale Resolution]: Select the scale resolution of the graph.

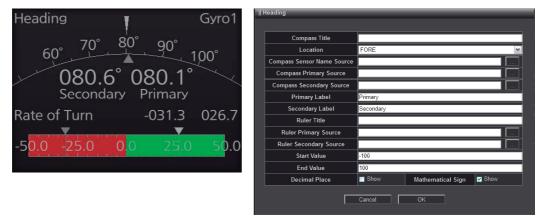
[Decimal Place]: Check the checkbox to show the value after decimal point.

[Secondary (Y2) Scale]: Check the check box to show the value input from the data source of [Secondary (Y2)].

[Mathematical Sign (Scale)]: Check the checkbox to show the minus sign (-) when the value of the Y-coordinate is minus.

[Mathematical Sign (Value)]: Check the checkbox to hide the minus sign (-) when the value above graph is minus.

Heading



[Compass Title]: Enter the title shown at the top of the compass meter.
[Location]: Select the location of the heading sensor from the pull-down list.
[Compass Sensor Name Source]: Enter the name of the heading sensor.
[Compass Primary Source]: Select the data source of the upper pointer.
[Compass Secondary Source]: Select the data source of the lower pointer.
[Primary Label]: Enter the title for the primary source.
[Ruler Title]: Enter the title of the ruler.
[Ruler Primary Source]: Select the data source of the white triangle pointer.
[Ruler Secondary Source]: Select the data source of the gray triangle pointer.

[End Value]: Set the maximum value of the bar.

[Decimal Place]: Check the checkbox to show the value after decimal point. [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

• Next Leg

Next Leg	WPT No. 2
Next Radius	0.3 NM
Next Course	009.8 °
Next Leg Distance	3.2 NM
Next Leg Time	0:11:19
Remaining Distance	42.9 NM
Remaining Time	5:27:11

Pitch And Roll



[Title]: Enter the title of the component.

[Location]: Select the reference point for the pitch and roll from the pull-down list. [Title (Pitch And Roll 1 / Pitch And Roll 2)]: Enter the text shown above [Pitch And Roll 1 (or 2)] indicator.

[Type]: Select the object to show in the [Pitch And Roll 1 (or 2)]. Setting range: [Roll], [Pitch].

[Primary Source]: Select the data source of [Pitch And Roll 1 (or 2)] indicator. [Decimal Place]: Check the checkbox to show the value after decimal point. [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

Position Local Time

Position		Т	Position Local Time	
Latitude	60° 10.129 N		Title	-
			Latitude Label	-
Longitude	025°03.262 E		Longitude Label	<u>-</u>
Longitude	025 05.202 L		DATUM Label	-
DGPS	WGS 84		LocalTime Label	-
2 3. 3			Latitude Source	) · · · · · · · · · · · · · · · · · · ·
Local Time			Longitude Source	I
Local time	00 50		DATUM Source	-
	09:58		LocalTime(Time) Source	) · · · · · · · · · · · · · · · · · · ·
			LocalTime(Date) Source	-
	23 Dec 2012		Sensor Name Source	-
	20 2012		Г	
				Cancel OK

[Title]: Enter the title of the component.

[Latitude Label]: Enter the text to show at the left of the latitude value.

[Longitude Label]: Enter the text to show at the left of the longitude value.

[DATUM Label]: Enter the text that indicates the datum.

[Local Time Label]: Enter the text to show at the left of the time information.

### 1. INITIAL SETTINGS AND ADJUSTMENTS

[Latitude Source]: Select the data source of the latitude.
[Longitude Source]: Select the data source of the longitude.
[DATUM Source]: Select the data source of the datum.
[Local Time (Time) Source]: Select the data source of the time information.
[Local Time (Date) Source]: Select the data source of the date information.
[Sensor Name Source]: Select the appropriate sensor name source.

Track Order

Track Order		Track Order	
Set Course	xxx.x °	Title	
Set Radius	x.x NM		Cancel OK
Set ROT	xxx.x °/min		
Set Speed	xx.x kn		
Mode	(Steering mode)		
Acknowledge (Steer	Warning ing related warning)		

[Title]: Enter the title of the component.

# Two Dimension Plotter



[Title]: Enter the title of the component.

[Source (X)]: Select the data source of the X-coordinate value.

[Source (Y)]: Select the data source of the Y-coordinate value.

[Label (Y)]: Enter the title of the Y-coordinate.

[Unit (Y)]: Set the unit of the Y-coordinate.

[Symbol]: Select the plot mark.

[Time Span]: Enter the time span for the plotter screen.

[Sample Interval]: Enter the sample interval for the plotter screen.

[Max Value (X)]: Enter the maximum value of the X-coordinate.

[Max Value (Y)]: Enter the maximum value of the Y-coordinate.

[Axis Point (X)]: Enter the axis point of X-coordinate.

[Axis Point (Y)]: Enter the axis point of Y-coordinate.

[Axis Type]: Select the axis type. [Under Left]: The axis point is located at the under left of the screen. [Central]: The axis point is located at the center of the screen. [Tick Label]: Check the checkbox to show the tick label.

### Vertical Bar



[Title]: Enter the title of the component.

[Top Source]: Select the data source of the data at the top of the vertical bar.

[Bottom Source]: Select the data source of the data at the bottom of the vertical bar. [Primary Source]: Select the data source of the bar.

[Secondary Source]: Select the data source of the triangle indicator.

[Start Value]: Set the minimum value of the bar.

[End Value]: Set the maximum value of the bar.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

[Mirror Horizontally]: Check the checkbox to invert the position of the bar and value horizontally.

[Average Value]: Check the checkbox to show the average value.

# Vertical Graph (Middle)

		****	Il verucerorepri(meanur)				
****	****	****	Title	-			
			Lable Source				
			Mode Source	-			-
-100 -67 -33	0 33 67	100		F	mary	Seco	ndary
			Label				
			Source	-			
		12"	Source (sub)				
		I Z	Unit	-			
		•		Min	Max	Min	Max
		24"	Scale   Range	-100	100	-100	100
			Time Span	60sec	Sample	nterval 1sec	2
		36"	Scale Resolution	MEDIUM	🖂 Change	Button 📕 Show	
		30	Decimal Place	Show .	Mathematical	Sign(Scale) 🖬 Show	
			Secondary(Y2) Scale	🗹 Show	Mathematical	Sign(Value) 📕 Hide	
		48"					
					Cancel OK		
		-60"					
		100					
-100 -67 -33	0 33 67	100					

[Title]: Enter the title of the component.

[Label Source]: Enter the source of text shown on the right of the graph. Manual input is available.

[Mode Source]: Enter the source of text shown on the right of the value indication. Manual input is available.

[Label]: Enter the title of [Primary] and [Secondary].

[Source]: Select the data source of [Primary] and [Secondary].

[Source (sub)]: Set the other data source in the same range as the data of [Primary]. The [Source (sub)] appears only when the source of [Secondary] is not entered. [Unit]: Set the unit in the [Primary] and [Secondary].

[Scale | Range]: Set the display range of the X-coordinate. [Primary] is for the range of the upper of the graph, [Secondary] is for the range of the lower of the graph.

[Time Span]: Set the display range of the Y-coordinate.

[Sample Interval]: Set the interval of the graph plot.

[Scale Resolution]: Select the scale resolution of the graph.

[Change button]: Check the checkbox to show the [Change] button. Click the [Change] button to show the [Vertical Graph (Middle)] hidden behind. Check the checkbox of [Show] in [Change Button] to show the component hidden behind. [Decimal Place]: Check the checkbox to show the value after decimal point. [Secondary (Y2) Scale]: Check the check box to show the value input from the data source of [Secondary].

[Mathematical Sign (Scale)]: Check the checkbox to show the minus sign (-) when the value of the X-coordinate is minus.

[Mathematical Sign (Value)]: Check the checkbox to hide the minus sign (-) when the value above graph is minus.

• Winch



[Title]: Enter the title of the component.

[Type]: Select [Main only] or [Port and Stbd]. For [Main only], the information of only the main winch is shown. For [Port and Stbd], the information of each winch on both the port and starboard is shown.

[Length]: Set the source and unit of length for rope.

[Power]: Set the source and unit for rope winding force.

[Speed]: Set the source and unit for rope winding speed.

[Start Value]: Set the minimum value of the bar.

[End Value]: Set the maximum value of the bar.

[Scale Resolution]: Select the scale resolution of the graph.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

# Winch Information

Second	lary Drum			Winchinformation					
					Purt	tain Source Stbd	Port Sou Port	rce Stbd	Unit
FOF	RWARD		AFT	Length -					
				Power - Speed -					
PORT	STBD		STBD	Decimal Place	Staw		Shew		
						Cancel	ок		
2000	2000 m	2000	2000 m						
95	95 ton	95	95 ton						
55									
20	20 m/min	20	20 m/min						
20	20 m/min	20	20 m/mm						

[Title]: Enter the title of the component.

[Length]: Set the source and unit of length for rope.

[Power]: Set the source and unit for rope winding force.

[Speed]: Set the source and unit for rope winding speed.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

Wind Direction

Wind Direction			Wind Direction					
Theoretical			Title		-			
		Apparent	Locati	on	FORE			<u> </u>
214.9		Apparent				Wind Direction	wi	ind Speed
		\$ 1 2	Theoretical	Label	Theoretical			
3.5 kn		meoreaca	Source			-		
	NII	$\rightarrow \land \mid \land \land \mid$	Apparent	Label	Apparent			
Australia		- N. A. B. 198		Source	-		-	
Apparent			Unit		-		-	
201.3			Decimal	Place	Show		Show Show	
201.5		A ALASSA				Cancel OK	_	
3.2	1cm	i i se						
<b>D.</b> Z	kn							

[Title]: Enter the title of the component.

[Location]: Select the reference point for the wind direction and speed from the pulldown list.

[Theoretical]

[Label]: Enter the data name for the theoretical wind direction and speed. [Source]: Select the data source of the theoretical wind direction and speed. [Apparent]

[Label]: Enter the data name for the apparent wind direction and speed. [Source]: Select the data source of the apparent wind direction and speed. [Unit]: Set the unit of the wind direction and wind speed.

[Decimal Place]: Check the checkbox to show the value after decimal point.

# [Large] component (three or more blocks)

### • Alert



• Doppler Log



[Title]: Enter the title of the component.

[SOG Longitudinal Speed]: Select the data source of the longitudinal SOG.

[STW Longitudinal Speed]: Select the data source of the longitudinal STW.

[Bow Transverse Speed]: Select the data source of the longitudinal speed at the bow position.

[Stern Transverse Speed]: Select the data source of the longitudinal speed at the stern position.

[True Wind Direction Source]: Select the source of true wind direction indicated as the red triangle in the center of the component.

[Relative Wind Direction Source]: Select the source of relative wind direction indicated as the red triangle in the center of the component.

[Speed Type Source]: Select the data source same as [Longitudinal Speed Source] to show the abbreviated name of the data source unit.

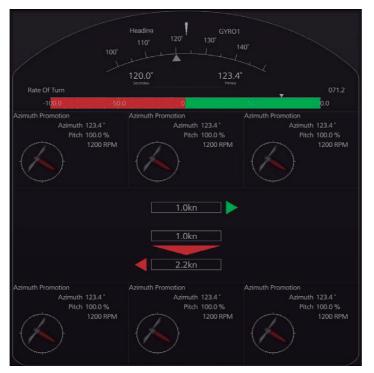
[Sensor Name Source]: Select the appropriate sensor name source.

[Unit]: Set the unit of the ship's speed.

[Decimal Place]: Check the checkbox to show the value after decimal point [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

[Mirror Vertically]: Check the checkbox to invert the display vertically.

• DP



For the setting, see the description for [Compass], [Horizontal Ruler], [Azimuth Promotion], and [Doppler Log].

# • Fore & AFT bridge, Fore & AFT bridge (Wide) to Fore & AFT bridge9 (Wide)



Multiple components are combined on this window. The contents are same as the single component.

## NAV Information

Steering Mod	е	
Route A4		to BBBBBBB
Present Leg		WPT No. 2
Plan Course		021.8 °
XTD Limit		101.0 m
XTD		144.5 m
Distance to W	/OP	1.2 NM
Time to Go		00h09m10s
Turn Radius		1.0 NM
Next Leg		WPT No. 3
Next Course		009.8 °
Next Leg Dist	ance	3.2 NM
Set Course		021.8 °
Mode	GoSEA A	ppr. Enabled
Set and Drift		► 053.1 °
		20.0 kn



[Title]: Enter the title of the component. [Component.Height]: Select the size of component. Present Leg

Route	***
Present Leg	WPT No. ***
Plan Course	*** * °
Course to Steer	****°
XTD Limit	****.* m
ХТD	****.* m
Distance to WOP	*****.* NM
Time to Go	**d**h**m**s
Turn Radius	*****.* NM

Speed And Transverse

Speed.	AndTransverse		SOG	:	Speed And Transverse			
	Speed	Trans	verse		Title			
					Location	FORE		<b>~</b>
SOG	1.5kn	CCRP	3.1kn		Speed Label	Speed		
CTA			2 6		Transverse Label	Transverse		
STW	1.4kn	Bow	2.6kn			Label	Source	
		Stern	0.3kn		SOG Longitudinal Speed			
		Sterri	0.3KH		STW Longitudinal Speed			
	(				CCRP Transverse Speed	CCRP		
					Bow Transverse Speed	Bow		
					Stern Transverse Speed	Stern		
					Speed Type Source			
					Unit			
					Decimal Place	Show	Mathematical Sign	Show
						Cancel	ОК	

[Title]: Enter the title of the component.

[Location]: Select the reference point for the speed from the pull-down list. [Speed Label]: Enter the title shown at the upper of the longitudinal speed value. [Transverse Label]: Enter the title shown at the upper of the transverse speed value. [SOG Longitudinal Speed]: Select the data source of the longitudinal SOG.

[STW Longitudinal Speed]: Select the data source of the longitudinal STW.

[CCRP Transverse Speed]: Select the data source of the longitudinal speed at the CCRP position.

[Bow Transverse Speed]: Select the data source of the longitudinal speed at the bow position.

[Stern Transverse Speed]: Select the data source of the longitudinal speed at the stern position.

[Speed Type Source]: Select the data source same as [Longitudinal Speed Source] to show the abbreviated name of the data source unit.

[Sensor Name Source]: Select the appropriate sensor name source.

[Unit]: Set the unit of the ship's speed.

[Decimal Place]: Check the checkbox to show the value after decimal point [Mathematical Sign]: Check the checkbox to show the minus sign (-) when the value is minus.

## Vertical Graph

		ORT an			Change
-30	RT 10		TBD 1 10	.0 20	 0'
					4'
					8'
-30	-20	-10	10	20	

	Pr	imary		Secon	dary
Label	-	·			
Source	-		•		
Source (sub)	-		·		
Unit	-		ŀ		
	Min	Мах	1	din	Мах
Scale   Range	-100	100	-1	00	100
Time Span	60sec	Sample	Interval	1sec	
Scale Resolution	MEDIUM	Change	e Button	Show	
Decimal Place	Show	Mathematica	al Sign(Scale)	🛃 Show	
Decima Hace			al Sign(Value)	Hide	

[Title]: Enter the title of the component.

[Label]: Enter the title of [Primary] or [Secondary].

[Source]: Select the data source of [Primary] or [Secondary].

[Source (sub)]: Set the other data source in the same range as the data of [Primary]. The [Source (sub)] appears only when the source of [Secondary] is not entered. [Unit]: Set the unit in the [Primary] or [Secondary].

[Scale | Range]: Set the display range of the X-coordinate. [Primary] is for the range of the upper of the graph, [Secondary] is for the range of the lower of the graph.

[Time Span]: Set the display range of the Y-coordinate.

[Sample Interval]: Set the interval of the graph plot.

[Scale Resolution]: Select the scale resolution of the graph.

[Change button]: Check the checkbox to show the [Change] button. Click the [Change] button to show the [Vertical Graph (Middle)] hidden behind. Check the checkbox of [Show] in [Change Button] of the component hidden behind.

[Decimal Place]: Check the checkbox to show the value after decimal point.

[Secondary (Y2) Scale]: Check the check box to show the value input from the data source of [Secondary].

[Mathematical Sign (Scale)]: Check the checkbox to show the minus sign (-) when the value of the X-coordinate is minus.

[Mathematical Sign (Value)]: Check the checkbox to hide the minus sign (-) when the value above graph is minus.

# Vertical Heading Graph



[Title]: Enter the title of the component. [Label]: Enter the title of [Heading] or [Other]. [Source]: Select the data source of [Heading] or [Other].

[Source (sub)]: Set the other data source in the same range as the data of [Heading]. The [Source (sub)] appears only when the source of [Other] is not entered. [Unit]: Set the unit in the [Heading] and [Other].

[Scale | Range]: Set the display range of the X-coordinate. [Heading] is for the range of the upper of the graph, [Other] is for the range of the lower of the graph. [Time Span]: Set the display range of the Y-coordinate.

[Sample Interval]: Set the interval of the graph plot.

[Scale Resolution]: Select the scale resolution of the graph.

[Change button]: Check the checkbox to show the [Change] button. Click the [Change] button to show the [Vertical Heading Graph] hidden behind. Check the checkbox of [Show] in [Change Button] of the component hidden behind.

[Decimal Place]: Check the checkbox to show the value after decimal point. [Secondary (Y2) Scale]: Check the check box to show the value input from the data source of [Secondary].

[Mathematical Sign (Scale)]: Check the checkbox to show the minus sign (-) when the value of the X-coordinate is minus.

[Mathematical Sign (Value)]: Check the checkbox to hide the minus sign (-) when the value above graph is minus.

# 1.15 The Network Transmission Setting Between ECDIS and Radar

Connect the ECDIS and radar (FAR-2××7/FAR-2××8/FCR-2××9/FAR-3××0 series) with the LAN cable to show the radar echo and TT symbols on the ECDIS chart display, and show the ECDIS route and user chart symbol on the radar display.

For non-Furuno radar, the ECDIS chart display can show the radar echo and TT symbol on the ECDIS chart display by connecting the ECDIS and radar by serial interface, using the radar connection box (RCB-002).

# For FAR-2××7, FCR-2××9 series

**Note:** Confirm that the SPU board program version of the FAR-2xx7/FCR-2xx9 series is version "03.50" or after.

- 1. On the SPU board of the FAR-2xx7 and FCR-2xx9 series radars, set the Dip SW (S4) to ON.
- To connect two antenna units, change the antenna number of second antenna unit to [2] and set the IP address and subnet mask as shown below.
   IP address: 192.168.031.102
   Subnet mask: 255.255.255.0
- 3. Do one of the two procedures below according to the radar connected. For FAR-2××7 series
  - 1) Press the **MENU** key to open the main menu.
  - 2) Press and hold the **1 HL OFF** key, then press the **MENU** key five times to open the [INITIALIZE] menu.
  - 3) Open [8. OTHERS]  $\rightarrow$  [5. INS], then select [LAN].
  - 4) Go back to the [INITIALIZE] menu and open [6. TT PRESET]  $\rightarrow$  [2. TT DATA OUTPUT], then select [TTM], [TRUE] and [4800].

## For FCR-2××9 series

- 1) Press and hold the **1 HL OFF** key, then press the **MENU** key five times.
- 2) Select [9 RADAR INSTALLATION] $\rightarrow$ [4 TT PRESET] $\rightarrow$ [1 TTM/TTD PREFERENCE] and then select [TRUE].
- 4. Access the [Common Installation Setting] menu on the ECDIS.
- 5. Open the [Own Ship Setting] menu, then select [Radar Antenna] on the menu bar.
- 6. For one antenna unit, check [RAS001]. For two antenna units, check [RAS001] and [RAS002].

# For FAR-3××0 series

- 1. Press and hold the **1 HL OFF** key, then press the **MENU** key five times.
- 2. Select [9 RADAR INSTALLATION]→[4 TT PRESET]→[1 TTM/TTD PREFER-ENCE] and then select [TRUE].
- 3. Access the [Common Installation Setting] menu on the ECDIS.
- 4. Open the [Own Ship Setting] menu, then select [Radar Antenna] on the menu bar.
- 5. For one antenna unit, check [RAS001]. For two antenna units, check[ RAS001] and [RAS002].

# For FAR-2××8 series

- 1. Press and hold the **1 HL OFF** key, then press the **MENU** key five times to open the [RADAR INSTALLATION] menu.
- 2. Select [0 NEXT].
- 3. Select [2 NETWORK SETTINGS], then set [2 LAN1•3 IP ADDRESS] to [CLASS C].
- 4. Go back to the first page of the [RADAR INSTALLATION] menu, then select [5 IN-STALLATION].
- 5. Set the antenna number ([3 RADAR NO]), taking care not to duplicate the antenna number of other radars.
- 6. Go back to the second page of the [RADAR INSTALLATION] menu, then select [3 OTHER SETTINGS].
- 7. Set [4 ECDIS] to [LAN].
- 8. Go back to the first page of the [RADAR INSTALLATION] menu, then select [6 TT PRESET]  $\rightarrow$  [2 TT DATA OUTPUT].
- 9. Set [2 SELECT SENTENCE] to [TTM] or [TTD].
- 10. Set [3 TTM/TTD REFERENCE] to [TRUE].
- 11. If you want to share the ship's speed and location data with the ECDIS, select [ECDIS] on the either of the following menu items:
  - Main menu  $\rightarrow$  [7 INFORMATION BOX]  $\rightarrow$  [2 OWN SHIP INFO]  $\rightarrow$  [3 SPEED]  $\rightarrow$  [2 SHIP SPEED]
  - Main menu  $\rightarrow$  [7 IINFORMATION BOX]  $\rightarrow$  [2 OWN SHIP INFO]  $\rightarrow$  [4 OWN SHIP POSN]  $\rightarrow$  [2 POSITION SOURCE]

**Note:** The settings for the above two menu items are shared. When either one is changed, the other is also changed.

- If you want to show the marks received from the ECDIS on the FAR-2××8 screen, open the main menu → [2 MARKS] → [6 ECDIS MARKS DISPLAY], then select [ON] or [OFF] as appropriate.
- 13. Access the [Common Installation Setting] menu on the ECDIS.
- 14. Open the [Own Ship Setting] menu, then select [Radar Antenna] on the menu bar.
- 15. For one antenna unit, check [RAS001]. For two antenna units, check [RAS001] and [RAS002].

# For non-Furuno radar

- 1. Open [Installation Parameters]→[Sensor Setting]→[Other Sensor] menu on the ECDIS.
- 2. Check [OTR001] and enter "RA0201" in the [SFID] field. Do not use other than [RA0201] to [RA0204].

**Note 1:** When entering the SFID, do not use the prefix "AI" (AIS excluded) or "II". **Note 2:** Do not enter the same SFID as any other equipment in the network.

Equipment ID	SFID	Data Type	Strict / Loose	Details
OTR001	RA0201	IEC61162-1 Ed4 •	Loose 🔹	Details
OTR002		IEC61162-1 Ed4	Loose 🔹	Details
OTR003		IEC61162-1 Ed4	Loose 🔹	Details
OTR004		IEC61162-1 Ed4	Loose 🔹	Details
OTR005		IEC61162-1 Ed4	Loose 🔹	Details
OTR006		IEC61162-1 Ed4	Loose	Details

- 3. Select [Serial Input/Output] of the PCU you want to set on the menu bar.
- 4. Check the serial port to receive the TT symbol data and select "OTR001" from the [Equipment ID] drop-down list.

The example shown below indicates that the [Serial 01] port of [ECD003] receives the No.1 AIS data.

Basic Setting Own St	nip Setting	Installation	Parameters	CCRS	TC	S	AMS	
Sensor Setting	ECD	03 Serial Inp	out/Output Sett	ing				
▶ <u>Radar Sensor</u>								
Radar Connection Box		Serial No.	Equipr	nent ID	Details	I/F monitor	Output	Filter
MFD		Serial 01	AIS001 ( AI0001 )	No.1 AIS Transp	Details	Start	Output	Filter
		Serial 02		~	Details	Start	Output	Filter
V ECDIS		Serial 03		~	Details	Start	Output	Filter
Vo.3 ECDIS		Serial 04		× 1	Details	Start	Output	Filter
Serial Input/Output		Serial 05		×	Details	Start	Output	Filter
Digital Input		Serial 06		~	Details	Start	Output	Filter
Digital Output		Serial 07		~	Details	Start	Output	Filter
No.4 ECDIS		Serial 08		×	Details	Start	Output	Filter
► <u>No.5 ECDIS</u>	On FI	1D-3100, Serial (	)5 to 08 are not availa	ible.				

# 1.16 How to Set the Forwarding Distance

Set the forwarding distance<sup>\*</sup> as follows. The configuration can be copied to other units connected to the network after saving the configuration.

- \*: The distance the ship travels straight after the steering control.
- 1. Press **Ctrl**, **Shift** and **t** keys simultaneously on the control unit or keyboard. A dialog box for entry of password appears.

Enter Password		×
	Cancel	OK

- Enter the password and click the [OK] button.
   Note: The edit mode is enabled until you press Ctrl, Shift and t keys simultaneously or reboot the unit.
- 3. Click [MENU] to open the menu.
- 4. Click [Navigation Parameter] to show the [Navigation Parameter] setting window.

Navigation Parameter         Delete         Add           TCS         SDD_Parameter         Delete         Add	different values for Port and Starboard
Navigation Parameter Delete Add TCS Delete Add Delete Dele	
SPD   Radius   FWD DIST	
Cost Parameters No. kn NM NM	
Route Information	
Sensor 2 10.0 0.40 0.100	
System / Local Select         2         10.0         0.40         0.100	
System Sensor Settings         J         13.0         0.40         0.100	
Local Sensor Settings 5 10.0 0.80 0.100	
Other Sensor Settings 6 15.0 0.80 0.100	
DISP 7 5.0 1.20 0.100	
Setting	

- 5. Enter [SPD kn] (ship speed), [Radius NM] (turning radius) and [FWD DIST NM] (forwarding distance\*).
- 6. When [FWD DIST NM] is different between port and starboard sides, check the checkbox of "Use different values for Port and Starboard" and then enter each setting value.

Gener	al		Forwar	ding	Distan	ce								
	Ship & Route Parameters					Service S	tate	se o	differe	ent va	ues for	Port and	Starboard	
	Navigation Parameter		Port				Add	SEC.	Starl			lete (	Add	
	Cost Parameters		1	No.	SPD kn	Radius NM	FWD DIST NM				SPD kn	Radius NM	FWD DIST NM	
	Route Information			1	5.0	0.40	0.100	A			5.0	0.40	0.100	Ē
Sensoi					10.0	0.40	0.100			2	10.0	0.40	0.100	
	System / Local Select				15.0	0.40	0.100			3	15.0	0.40	0.100	
Ī	System Sensor Settings				5.0	0.80	0.100			4	5.0	0.40	0.100	
	Local Sensor Settings				10.0	0.80	0.100				10.0	0.80	0.100	
	Other Sensor Settings				15.0	0.80	0.100			6	15.0	0.80	0.100	
DISP					5.0	1.20	0.100			7	5.0	1.20	0.100	
Set	ting	Ţ			5.0	1.20	0.100	Ē			5.0	1.20	0.100	

7. Click [Save] button to save the configuration.

# **1.17** Synchronization With Ship's Clock

The time (UTC) received from the GPS is shown. If the ZDA sentence is input from the ship's clock, the time synchronized with the ship's clock can be shown.

Do as follows to activate the synchronization with the ship's clock.

**Note:** The local time setting is not available when the synchronization with ship's clock is active.

- 1. Press **Ctrl**, **Shift** and **t** keys simultaneously on the control unit or keyboard. The password input dialog box appears.
- 2. Enter the password and click the [OK] button.

**Note:** The service mode remains enabled until you press **Ctrl**, **Shift** and **t** keys simultaneously or reboot the unit.

- 3. Click [MENU] to open the menu.
- 4. Click [Ship & Route Parameters], then click the [Function1] tab.

General		Ship & Route Clinstant Track Cline Function 1 Cline Function 2
Ship & Route Para	neters	
Navigation Paran	leter	Check Required
TCS		Setting for chart alert ON/OFF
Cost Paramete	rs	
Route Informat	on	Interface Test Output RX/TX Log
Sensor		
System / Local Se	lect	Auto Capture Interval(min): 5
System Sensor Se	tings	
Local Sensor Set	ngs	Clear ENC Clear ARCS Clear DNC Clear BSB Clear MUD Clear PUB
Other Sensor Set	ings	Sync with ship's clock
DISP		
Setting		

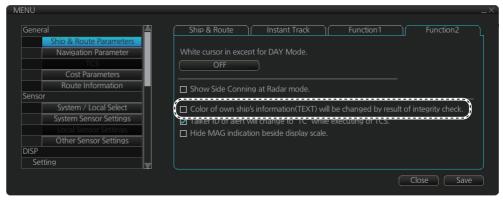
- 5. Click the [OFF] button of [Sync with ship's clock] to set "ON".
- 6. Click the [Save] button to save the configuration.

# 1.18 How to Change the Color of Data in the Sensor Information Box According to Integrity

The following procedure shows how to change the color of the data in the sensor information box with the results of the Integrity Check. For the Integrity Check, see the Operator's Manual for the Chart Radar.

- 1. Press **Ctrl**, **Shift** and **t** keys simultaneously on the control unit or keyboard. The password input dialog box appears.
- Enter the password and click the [OK] button.
   Note: The service mode remains enabled until you press Ctrl, Shift and t keys simultaneously or reboot the unit.
- 3. Click [MENU] to open the menu.

4. Click [Ship & Route Parameters], then click the [Function2] tab.



- 5. Check the checkbox of [Color of own ship's information (TEXT) will be changed by result of integrity check].
- 6. Click the [Save] button to save the configuration.

# 1. INITIAL SETTINGS AND ADJUSTMENTS

This page is intentionally left blank.

# SETTINGS FOR SENSOR 2. **ADAPTER**

The default Equipment ID of the Sensor Adapter is "MCV016". Set the individual Equipment ID before connecting to the network.

Connect the Sensor Adapter to the ECDIS unit after setting the Equipment ID. Then enter the other settings of the Sensor Adapter from the [Common Installation Setting] menu on the ECDIS unit.

#### 2.1 How to Set the Equipment ID

- 1. Set the IP address and subnet mask of the PC as shown below. IP address: 172.31.16.200 Subnet mask: 255.255.0.0
- 2. Connect the laptop PC to the Sensor Adapter with the LAN cable.
- 3. Activate the web browser on the PC and enter the default IP address of the sensor adapter: "172.31.17.108".
- 4. Access the [Common Installation Setting] menu and click [Basic Setting] on the tab bar.

Basic Setting	Installation Parameters	Alert Define List	Save	System Monitor	Factory Test & Default	
Basic Setting	Basic Se	etting				
Peripherals		Sensor A	dapter			
		Equipment ID	MCV016			
		Equipment Name	No.16 Sensor Adap	oter		
		Equipment Type No.	MC-3000S			
		Subsystem		A		
	IP Addre	ss Sensor Network	172 . 31 .	17 . 108		

5. Select the Equipment ID from the drop-down list. The [Equipment Name], [Equipment Type No.] and [IP Address] are automatically entered according to the Equipment ID.

Setting range: "MCV001" to "MCV016"

6. After entering the setting, click [Save] on the Info bar. Several confirmation messages appear. Click [OK] to reboot the system. If you want to discard the entry, click [Discard Changes].

# How to restore the default Equipment ID

When you can not define the Equipment ID of the Sensor Adapter, restore the default and set the Equipment ID again.

- 1. Turn on the No. 8 segment of the DIP switch S10 on the board in the MC-3000S.
- Turn on the Sensor Adapter. The Equipment ID of the Sensor Adapter turns to default "MCV016", and the IP address is set to "172.31.17.108".
- 3. See section 2.1 "How to set the Equipment ID" to set the Equipment ID of the Sensor Adapter.
- 4. Turn off the No. 8 segment of the DIP switch S10 on the board in the MC-3000S.

# 2.2 How to Save the Log File

The log file of the sensor adapter can be saved to a medium (PC, USB memory, etc.). The log file is used to check the status of the sensor adapter.

- 1. Connect the PC to the sensor adapter with the LAN cable.
- Activate the web browser and enter the following address in the address bar. "http://172.31.xx.xxx/cgi-bin/logall.cgi"
   "172.31.xx.xxx" is the IP address of the sensor adapter where to save the log file.
- 3. After entering the address, the window to save the log file appears. Save the log file to the PC.

# 2.3 How to Update the Firmware (MC-3000S)

This section shows you how to update the firmware program of the sensor adapter MC-3000S.

# **Preparation**

PC that has a LAN port

Windows<sup>®</sup> XP is recommended. Disable the firewall and set the IP address and subnet mask of the PC as shown below. **IP address**: 172.31.16.200 **Subnet mask**: 255.255.0.0

- LAN cable
- Binary file for update 2450080-xxxxxxx\_mc\_cs\_boot.bin 2450081-xxxxxxx\_mc\_cs\_mainpg.bin 2450082-xxxxxxx\_mc\_cs\_maint.bin 2450084-xxxxxxx\_mc\_io\_mainpg.bin

Boot program Main program Maintenance program Main program (analog, digital input, and digital output board)

(xxxxxxx: program version)

# 2.3.1 How to activate the maintenance program

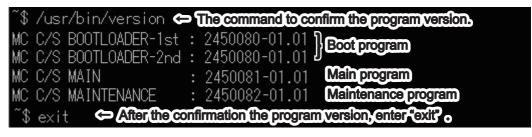
- 1. Turn off all Sensor Adapters.
- 2. Connect the applicable MC-3000S to the PC with the LAN cable.
- 3. Turn on the No. 6 of the DIP-SW (S10) on the MC-CS board (24P0114).
- 4. Turn on the Sensor Adapter MC-3000S.
- The maintenance program activates after about 30 seconds. At this time, the IP address of MC-3000S is changed to "172.31.17.108". Confirm that the LED (CR 74) on the MC-CS board lights 3 times and goes off for a while repeatedly.

# 2.3.2 How to confirm the firmware program version

- 1. Activate the maintenance program of the sensor adapter MC-3000S.
- 2. Activate the command prompt of Windows<sup>®</sup>.
- 3. Enter "telnet 172.31.17.108" on the command prompt.
- 4. Enter the user name and password correctly.



5. Enter "/usr/sbin/version" on the command prompt to confirm the program version. The program version is shown on the command prompt.

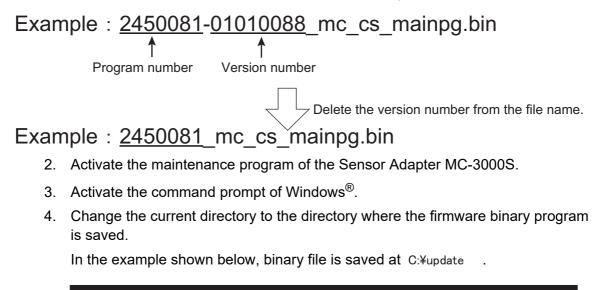


**Note:** The image shown above is an example. The program version number may be different.

6. After confirming the program version, enter "exit" to finish the telnet command.

# 2.3.3 How to update the firmware program

1. Delete the version number from the firmware binary file name.



Note: Change the current directory to the one where the binary file is saved.

- 5. Enter "ftp 172.31.17.108" on the command prompt. Confirm that "220-MC3000\_CS\_MAINTENANCE" is shown.
- 6. Enter the user name and password.

Connected to 172.31.17.108.

220- MC3000\_CS\_MAINTENANCE 🗢 Comilim that this massage appears.

220 MC\_CS\_MAINTENANCE FTP server (Version 6.4/OpenBSD/Linux-ftpd-0.17) ready.

Name (172.31.17.108:tanaka-toshihisa): 👄 Entertheusername.

331 Password required for root.

Password : 🗢 Enterthe password.

 After the login, enter "dir".
 The file names that are saved in the Sensor Adapter are displayed. Confirm that the file names shown below are shown on the display.

```
Name (172.31.17.108:tanaka-toshihisa): 🗢 🖬 🖓 🖓 🖛
331 Password required for root.
Password : 🗢 Enterthe pessional
230 User root logged in.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> dir
           200 PORT command successful.
150 Opening ASCII mode data connection for '/bin/ls'.
                                     2 Sep 30 2011 2450080 mc cs boot.bin
crw-r--r--
           1 root
                               90.
                       root
                               90,
                                     4 Sep 30
                                               2011 2450081_mc_cs_mainpg.bin
crw-r--r--
             1 root
                       root
                                     6 Sep 30
                                               2011 2450082_mc_cs_maint.bin
            1 root
                               90.
crw-r--r--
                       root
                                               2011 2450084_mc_io_mainpg.bin
crw-r--r--
             1 root
                               90, 12 Sep 30
                       root
drwr-xr-x
             2 root
                                     0 Sep 30
                                               2011 backup
                       root
226 Transfer complete
                                                     Checkthese file names.
ftp>
     8. Enter "bin", and then enter "hash".
     9. Enter the command to transfer the firmware program.
```

- Example: put 24500810\_mc\_cs\_mainpg.bin
- 10. When you transfer other program, enter the command to transfer the program.
- 11. Enter "bye" to finish updating the firmware program.

ftp> bin 🗢 Enternecessarily.
200 Type set to I.
ftp> hash 🗢 🖃 🕮 💭 💬 😌 💬
Hash mark printing on (1024 bytes/hash mark).
ftp> put 2450081_mc_cs_mainpg.bin 🗢 The command to transfer the three program.
local: 2450081_mc_cs_mainpg.bin remote: 2450081_mc_cs_mainpg.bin
200 PORT command successful.
150 Opening BINARY mode data connection for '2450081_mc_cs_mainpg.bin'.
#######################################
···.
#######################################
226 Transfer complete.
10888576 bytes sent in 87.84 secs (121.1 kB/s)
<sup>ftp&gt; bye</sup> 🗢 The command Collidsh Che Cip command.
221 Goodbye
12 Confirm the firmware program version (see section 2.3.2)

Confirm the firmware program version (see section 2.3.2).

# 2. SETTINGS FOR SENSOR ADAPTER

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# 3. HUB-3000 IGMP QUERIER SETTINGS

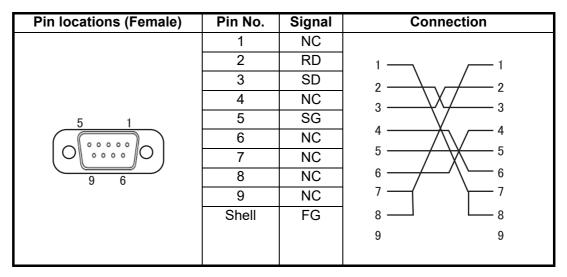
When constructing a network with two or more FAR-2××7 radars via HUB-3000, set the IGMP querier of the HUB-3000.

# Items to prepare:

- PC with RS-232C serial port (with D-SUB9 pin connections)
- RS-232C serial crossover cable (with D-SUB9 pin connections)
- Software to control a serial device (HyperTerminal, TeraTerm, Putty, etc.)

Note: This manual uses TeraTerm in the explanations and procedure which follow.

# RS-232C crossover cable



# **Procedure**

- 1. Connect the RS-232C serial cable to the PC serial port.
- Connect the loose end of the RS-232C serial cable to the HUB-3000 serial port. Note: When removing the serial cable, disconnect the HUB-3000 first, then disconnect the PC.
- 3. Start the TeraTerm application on the PC.
- 4. Click the [Serial Port] radio button, then select the connected COM port from the dropdown menu.

○ TCP/ĮP	Hos <u>t</u> : myhost.e>	ample.com
	☑ Hist <u>o</u> ry Service: ○ Telnet	TCP port# 22
	© <u>S</u> SH	SSH version: SSH2
	O Other	Protogol: UNSPE
⊙ S <u>e</u> rial	Po <u>r</u> t: COM1: S	erial port (COM1)

- 5. Click [OK].
- 6. Click [Setup], then [Serial port] to open the [Serial port setup] window.

			Tera Term: Serial port	setup	
COM1:9600baud - Tera Term VT					
ile <u>E</u> dit <u>S</u> etup Control <u>W</u> indow Terminal	Help		<u>P</u> ort:	COM1 -	ОК
Window <u>F</u> ont			Baud rate:	9600 💌	
Keyboard Sgrial port			<u>D</u> ata:	8 bit 💌	Cancel
<u>P</u> roxy SS <u>H</u> SSH Authentication		<b></b>	P <u>a</u> rity:	none 🔹	
SSH <u>A</u> urrentication SSH F <u>o</u> rwarding SSH KeyGenerator			<u>S</u> top:	1 bit 🔹	Help
T <u>C</u> P/IP General			Elow control:	none 💌	
Additional settings Save setup			_ Transmit dela	у	
Restore setup			0 msec	:/ <u>c</u> har 0 m	sec/line
Load key map					

7. Change the settings as shown below, then click [OK].

Baud rate	: 9600	Data	: 8 bit	Parity	: none
Stop	: 1 bit	Flow Control	: none		

- 8. Press the Enter key. You will be prompted for a Username and Password.
- 9. Enter the [Username] and [Password] as shown below, then press the Enter key.

Username:	admin		
Password:	admin		
	Welcome t	to HUB-3000	) GigabitHUB
Switch>			

- 10. Input "enter" at the "Switch>" line, then press the Enter key.
- 11. Press the Enter key again.
- 12. At the "Switch#" line, input "show ip igmp-snooping", then press the **Enter** key. The current settings for the HUB-3000 will be displayed.

```
Switch> enter
Switch#Jan 1 20:32:14 User admin enter privilege mode from console 0, level
= 15
Switch# show ip igmp-snooping
Global IGMP snooping configuration:
-----
Globally enable : Enabled
VLAN nodes
                : 1
Dlf-frames filtering : Enabled
Sensitive : Disabled
               : Disabled
Ouerier
Querier address : 10.0.0.200
Router age
              : 260 s
```

If the "Querier" line shows "Enabled", skip to step 17. If the "Querier" line shows "Disabled", go to step 13.

- 13. At the "Switch#" line, input "config" then press the Enter key.
- 14. At the "Switch\_config#" line, input "ip igmp-snooping querier" then press the **Enter** key.
- 15. At the "Switch\_config#" line, input "show ip igmp-snooping" then press the **Enter** key.
- 16. The "Querier" line should now show "Enabled". If not, repeat steps 13 to 15.

17. At the "Switch#" line, input "write" then press the **Enter** key. This will save the configuration.

```
Switch# config
Switch_config# ip igmp-snooping querier
Switch_config# show ip igmp-snooping
Global IGMP snooping configuration:
-----
Globally enable : Enabled
VLAN nodes
                 : 1
Dlf-frames filtering : Enabled
Sensitive
                : Disabled
Querier
                : Enabled
Querier address : 10.0.0.200
Router age
                : 260 s
Response time
                : 15 s
Switch_config# write
Saving current configuration...
OK!
```

- 18. When the write process finishes, the HUB-3000 will restart.
- 19. Referring to steps 8 through 12, check to make sure the "Querier" line is showing "Enabled". If the "Querier" line shows "Disabled", repeat the above procedure.

## 3. HUB-3000 IGMP QUERIER SETTINGS

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# **APPX. 1 EQUIPMENT ID LIST**

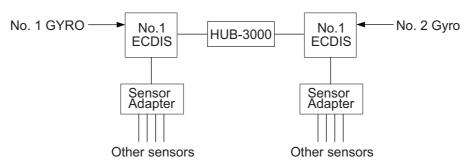
Equipment ID	Equipment Name	Gateway Network	Sensor Network	Remarks
MFD001	No.1 MFD	192.168.31.51	172.31.16.51	
MFD002	No.2 MFD	192.168.31.52	172.31.17.51	
MFD003	No.3 MFD	192.168.31.53	172.31.16.52	
MFD004	No.4 MFD	192.168.31.54	172.31.17.52	
MFD005	No.5 MFD	192.168.31.55	172.31.16.53	
MFD006	No.6 MFD	192.168.31.56	172.31.17.53	
MFD007	No.7 MFD	192.168.31.57	172.31.16.54	
MFD008	No.8 MFD	192.168.31.58	172.31.17.54	
MFD009	No.9 MFD	192.168.31.59	172.31.16.55	
MFD010	No.10 MFD	192.168.31.60	172.31.17.55	
MFD011	No.11 MFD	192.168.31.61	172.31.16.56	
MFD012	No.12 MFD	192.168.31.62	172.31.17.56	
MFD013	No.13 MFD	192.168.31.63	172.31.16.57	
MFD014	No.14 MFD	192.168.31.64	172.31.17.57	
MFD015	No.15 MFD	192.168.31.65	172.31.16.58	
MFD016	No.16 MFD	192.168.31.66	172.31.17.58	
ECD001	No.1 ECDIS	192.168.31.1	172.31.16.1	Default setting for PCU-3000
ECD002	No.2 ECDIS	192.168.31.2	172.31.17.1	
ECD003	No.3 ECDIS	192.168.31.3	172.31.16.2	
ECD004	No.4 ECDIS	192.168.31.4	172.31.17.2	
ECD005	No.5 ECDIS	192.168.31.5	172.31.16.3	
ECD006	No.6 ECDIS	192.168.31.6	172.31.17.3	
ECD007	No.7 ECDIS	192.168.31.7	172.31.16.4	
ECD008	No.8 ECDIS	192.168.31.8	172.31.17.4	
ECD009	No.9 ECDIS	192.168.31.9	172.31.16.5	
ECD010	No.10 ECDIS	192.168.31.10	172.31.17.5	
ECD011	No.11 ECDIS	192.168.31.11	172.31.16.6	
ECD012	No.12 ECDIS	192.168.31.12	172.31.17.6	
ECD013	No.13 ECDIS	192.168.31.13	172.31.16.7	
ECD014	No.14 ECDIS	192.168.31.14	172.31.17.7	
ECD015	No.15 ECDIS	192.168.31.15	172.31.16.8	
ECD016	No.16 ECDIS	192.168.31.16	172.31.17.8	
RAD001	No.1 Radar	192.168.31.21	172.31.16.11	
RAD002	No.2 Radar	192.168.31.22	172.31.17.11	
RAD003	No.3 Radar	192.168.31.23	172.31.16.12	
RAD004	No.4 Radar	192.168.31.24	172.31.17.12	
RAD005	No.5 Radar	192.168.31.25	172.31.16.13	
RAD006	No.6 Radar	192.168.31.26	172.31.17.13	
RAD007	No.7 Radar	192.168.31.27	172.31.16.14	
RAD008	No.8 Radar	192.168.31.28	172.31.17.14	
RAD009	No.9 Radar	192.168.31.29	172.31.16.15	
RAD010	No.10 Radar	192.168.31.30	172.31.17.15	
RAD111	No.1 FAR-2××8 Radar	192.168.31.21	172.31.16.11	

Equipment ID	Equipment Name	Gateway Network	Sensor Network	Remarks
RAD112	No.2 FAR-2××8 Radar	192.168.31.22	172.31.17.11	
RAD113	No.3 FAR-2××8 Radar	192.168.31.23	172.31.16.12	
RAD114	No.4 FAR-2××8 Radar	192.168.31.24	172.31.17.12	
RAD115	No.5 FAR-2××8 Radar	192.168.31.25	172.31.16.13	
RAD116	No.6 FAR-2××8 Radar	192.168.31.26	172.31.17.13	
RAD117	No.7 FAR-2××8 Radar	192.168.31.27	172.31.16.14	
RAD118	No.8 FAR-2××8 Radar	192.168.31.28	172.31.17.14	
CRA001	No.1 Chart Radar	192.168.31.31	172.31.16.21	
CRA002	No.2 Chart Radar	192.168.31.32	172.31.17.21	
CRA003	No.3 Chart Radar	192.168.31.33	172.31.16.22	
CRA004	No.4 Chart Radar	192.168.31.34	172.31.17.22	
CRA005	No.5 Chart Radar	192.168.31.35	172.31.16.23	
CRA006	No.6 Chart Radar	192.168.31.36	172.31.17.23	+
CRA007	No.7 Chart Radar	192.168.31.37	172.31.16.24	
CRA008	No.8 Chart Radar	192.168.31.38	172.31.17.24	Do not Select.
CRA009	No.9 Chart Radar	192.168.31.39	172.31.16.25	-
CRA010	No.10 Chart Radar	192.168.31.40	172.31.17.25	
RAS001	No.1 Radar Sensor	192.168.31.101	-	
RAS002	No.2 Radar Sensor	192.168.31.102	-	
RAS003	No.3 Radar Sensor	192.168.31.103	_	
RAS004	No.4 Radar Sensor	192.168.31.104	_	
RAS005	No.5 Radar Sensor	192.168.31.105	-	
RAS006	No.6 Radar Sensor	192.168.31.106	-	Do not Select.
RAS007	No.7 Radar Sensor	192.168.31.107	-	
RAS008	No.8 Radar Sensor	192.168.31.108	-	
RAS009	No.9 Radar Sensor	192.168.31.109	-	
RAS010	No.10 Radar Sensor	192.168.31.110	-	
MCV001	No.1 Sensor Adapter	-	172.31.16.101	
MCV002	No.2 Sensor Adapter	-	172.31.17.101	
MCV003	No.3 Sensor Adapter	-	172.31.16.102	
MCV004	No.4 Sensor Adapter	-	172.31.17.102	
MCV005	No.5 Sensor Adapter	-	172.31.16.103	
MCV006	No.6 Sensor Adapter	-	172.31.17.103	
MCV007	No.7 Sensor Adapter	-	172.31.16.104	
MCV008	No.8 Sensor Adapter	-	172.31.17.104	
MCV009	No.9 Sensor Adapter	-	172.31.16.105	
MCV010	No.10 Sensor Adapter	-	172.31.17.105	
MCV011	No.11 Sensor Adapter	-	172.31.16.106	
MCV012	No.12 Sensor Adapter	-	172.31.17.106	
MCV013	No.13 Sensor Adapter	-	172.31.16.107	
MCV014	No.14 Sensor Adapter	-	172.31.17.107	
MCV015	No.15 Sensor Adapter	-	172.31.16.108	
MCV016	No.16 Sensor Adapter	-	172.31.17.108	Default setting for sensor adapter

# APPX. 2 SUBSYSTEM

Where the network configuration requires the use of a HUB-3000, the [Subsystem] settings must also be configured. For example, in a configuration like the one below, if the Subsystem settings are not configured, No. 1 ECDIS can only receive data from No. 1 Gyro, and No. 2 ECDIS can only receive data from No. 2 Gyro.

By configuring the Subsystem settings, the HUB-3000 allows the sharing of sensor data between No. 1 ECDIS and No. 2 ECDIS.

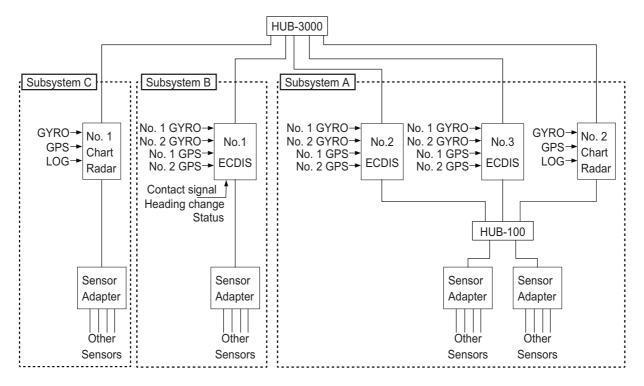


Subsystems A to Z are defined as follows:

- Subsystem A: Configurations which include sensor adapters connected to a HUB-100.
- Subsystem B to Z: Configurations where sensor adapters are directly connected to the PCU.

Examples of Subsystem settings are:

- Subsystem A: No. 2 Chart Radar, No.2 ECDIS, No. 3 ECDIS
- Subsystem B: No. 1 ECDIS
- Subsystem C: No. 1 Chart Radar



# APPX. 3 RCB-002 IP ADDRESS SET-TING

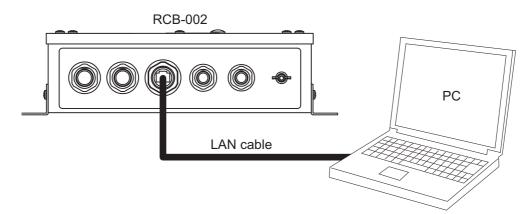
When multiple Radar Connection Box RCB-002s are connected to the same network, change the IP address as follows. Assign a different IP address to each RCB-002. IP address setting is not required for configurations with a single RCB-002.

# **Preparation**

- PC: Used for LAN connection with the RCB-002
- LAN cable: Used for connection between PC and RCB-002
- IP address setting tool (IPSetting.exe): Download from "Tech-Net" and save it on the PC.

# Procedure

- 1. Set the IP address and subnet mask for the PC as follows.
  - IP address: 192.168.31.110
  - Subnet mask: 255.255.255.0
- 2. Connect the PC to the RCB-002, using a LAN cable.



- 3. Turn on the RCB-002 power.
- 4. Run the IP address setting tool (IPSetting.exe) on the PC.

RP	
RCB	RD031111(RCB-002)
IP ADDRESS	192.168.031.111 SET

5. Confirm that "RD031111 (RCB-002)" and "192.168.031.111" appear on the [RCB-002 IP Setting] window.

**Note:** When the indication on the [RCB-002 IP Setting] window is not correct, confirm the following points.

- Confirm that the IP address and subnet mask setting for the PC is correct.
- Check the connection between the PC and RCB-002. Reconnect as necessary.

- 6. Enter the IP address as follows, then click the [SET] button.
  - No.1 RCB: 192.168.031.111 (Default setting)
- No.3 RCB: 192.168.031.113

• No.2 RCB: 192.168.031.112

• No.4 RCB: 192.168.031.114

7. Click the [CLOSE] button.

to step 8.

8. Run the IP address setting tool (IPSetting.exe) on the PC again, then the IP address entered at step 6 appear in the [RCB-002 IP Setting] window. Note: If the IP address setting is not applied, reboot the RCB-002 and PC, then retry step 4

**AP-5**