



5. Software Update

Chapter 5. Software Update

5.1 Updating the Software

This section describes software update of this equipment.

Note

When software update starts, the tasks that are active are automatically terminated. Complete the necessary operation such as saving of settings prior to the start of update.

Required Item

The following item is required to update the MFD software.

Table Required Item

No.	Name	Model Name
1	CD/DVD or USB memory containing software update data *1	—

*1 Do not use Flash drives which are password protected or encrypted.

WARNING



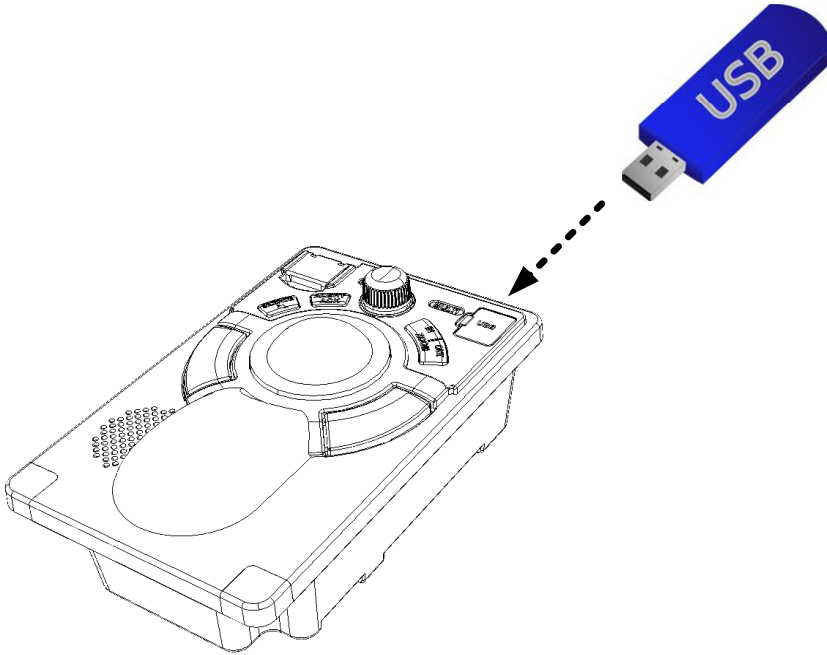
When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.



Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed.
If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

Procedure

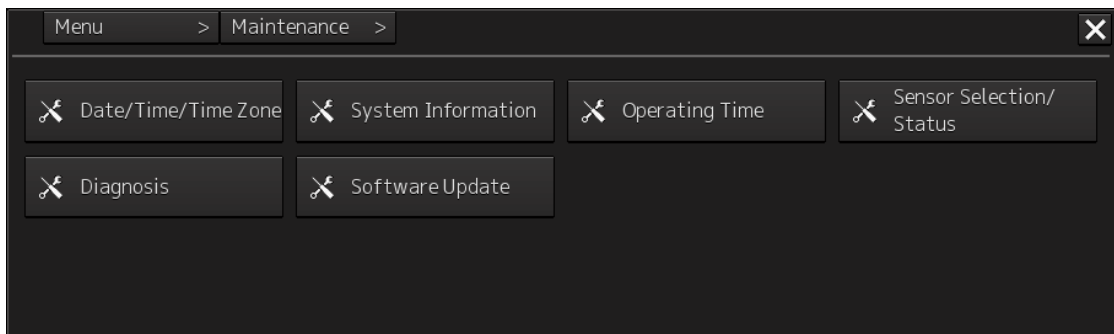
1. **Set the CD/DVD or USB flash memory containing the update data.**



2. **Click on the [Menu] button on the left toolbar.**

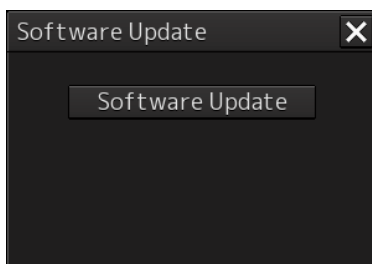
The menu is displayed.

3. **Click on [Maintenance] - [Software Update] - [Software Update] on the menu.**

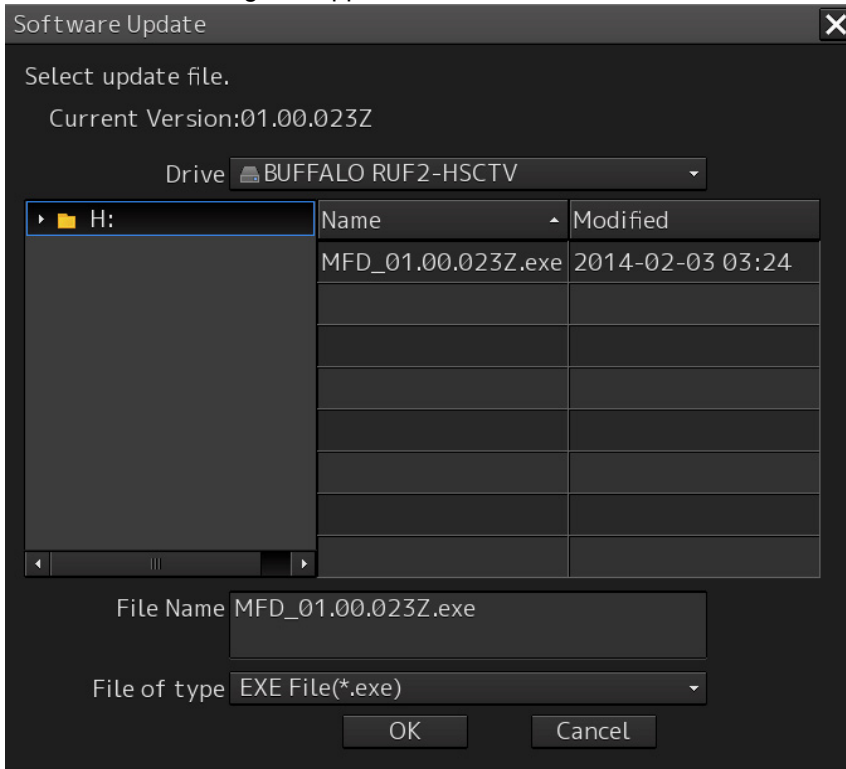


The "Software Update" dialog box appears.

4. **Click on the [Software Update] button.**



A file selection dialog box appears.



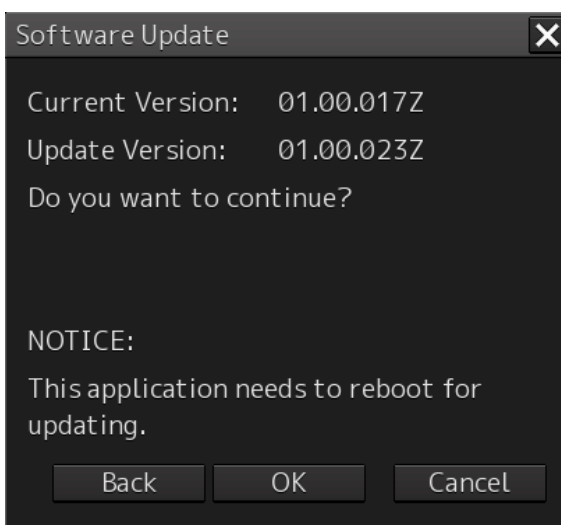
5. **From the [Drive] combo box, select the drive you want to store updated data.**

6. **From the file list, select the file MFD Setup.exe.**

MFD_xx.xx.xxxx.exe is displayed in [File name].

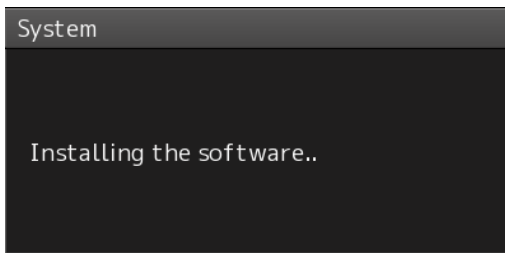
7. **Click on the [OK] button.**

The update content confirmation dialog box appears.



8. Confirm the contents and click on [OK].

Installation of the update is started and the following message is displayed.

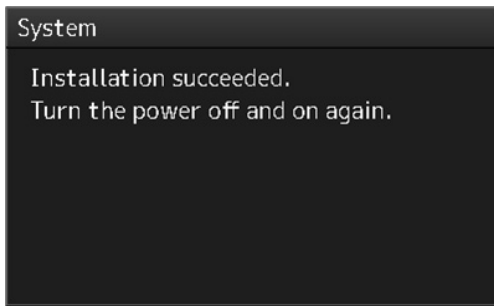


Wait for a while until the installation completes.

Note

This equipment may restart during installation.

When installation is completed, the following message is displayed.



9. Turn off the power of this equipment.

10. Restart this equipment.

11. Start MFD, and confirm that the software version number has been updated in the [Software] tab by selecting [Maintenance] - [System Information].

5.2 Backing Up/Recovering Data

CAUTION



Do not turn off the power during Backup/Restore.
Otherwise, a function may fail, and an accident may occur.



Do not do the backup operation of data while sailing.
The radar application should be ended to begin the data backup. It becomes impossible to observe using radar and this may lead to accidents.



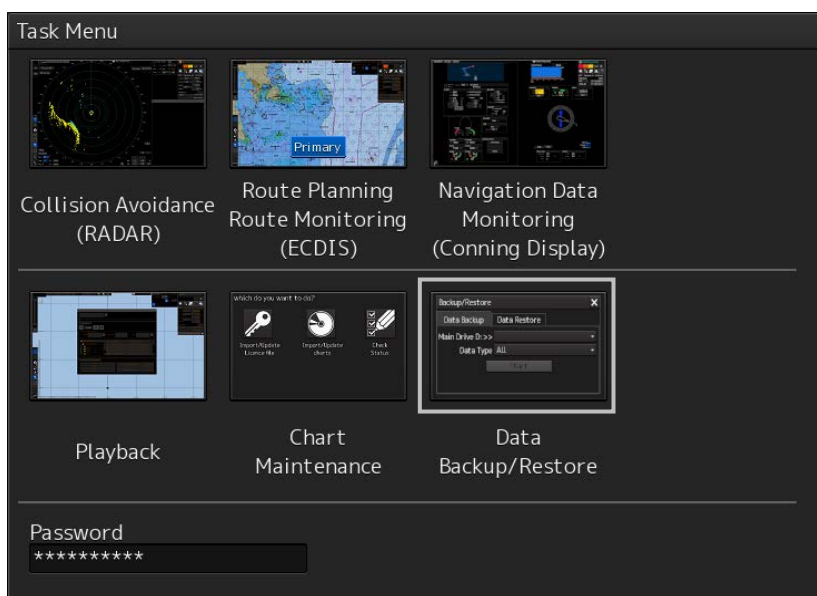
Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed.
If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

5.2.1 Backing Up Data

For the maintenance of your data, please back up your data periodically according to the following procedure.

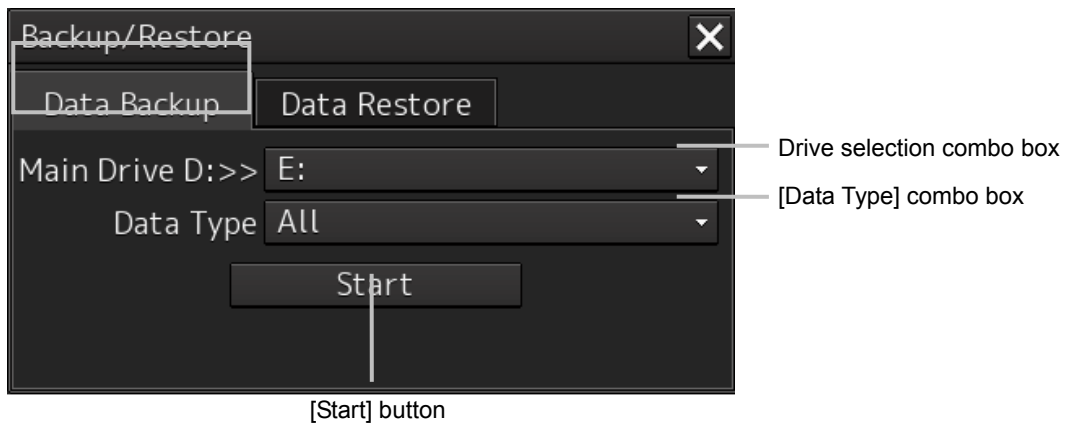
Connect a USB memory stick or other external storage medium for data backup.

1. **Press the Power ON button on the operation unit.**
The Power button illuminates. After a while, the task menu is displayed.
2. **Click on the [Data Backup/Restore] button on the task menu.**



The "Backup/Restore" dialog box appears.

3. Click on the [Data Backup] tab



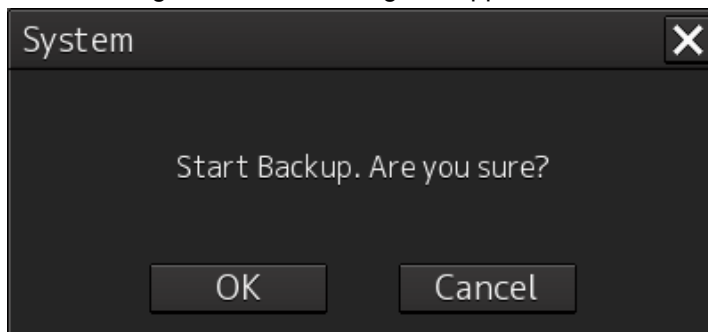
4. Select the backup destination of your data from the drive selection combo box.

5. In the [Data Type] combo box, select the type of the data you are backing up.

- All: Backs up all of the user data.
- Except Charts: Backs up the user data excluding chart data.

6. Click on the [Start] button.

The following confirmation dialog box appears.



7. Click on the [OK] button.

Copying of data to the backup destination you selected in the drive selection combo box starts.

Note
Do not perform any other operations until backup finishes. Doing other operations may cause the backup operation to fail.

5.2.2 Restoring Backup Data

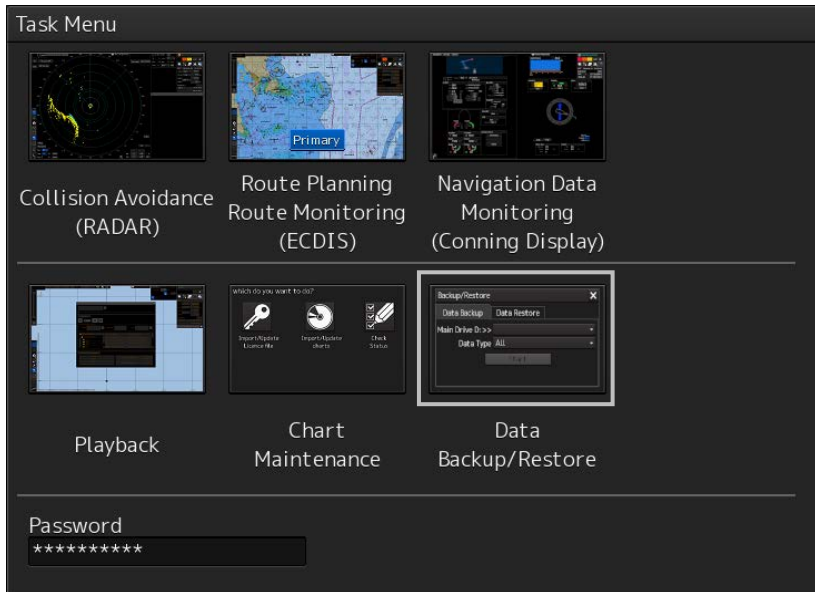
To restore backup data to this equipment, perform the following procedure.

Connect a USB memory stick or other external storage medium containing backup data.

1. Press the [Power] button on the operation panel.

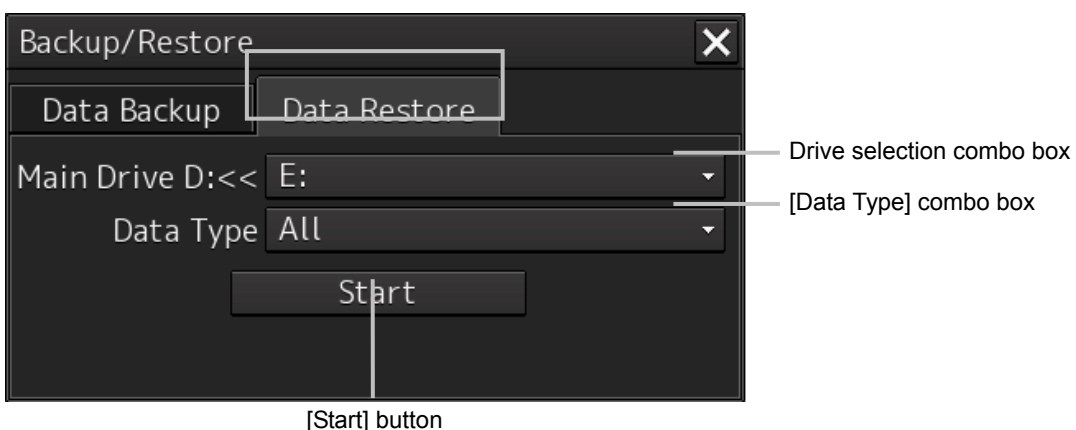
The [Power] button illuminates. After a while, the task menu is displayed.

2. Click on the [Data Backup/Restore] button on the task menu.



The "Backup/Restore" dialog box appears.

3. Click on the [Data Restore] tab

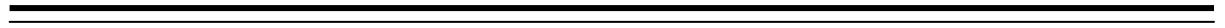


4. Select the drive in which backup data is stored from the drive selection combo box.

5. In the [Data Type] combo box, select the type of the data you are restoring.

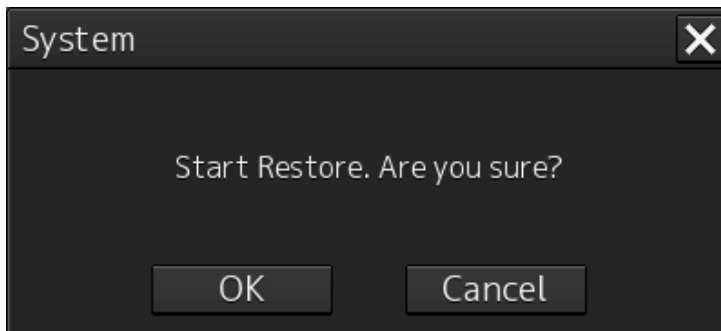
All: Restores all of the user data.

Except Charts: Restores the user data excluding chart data.



6. Click on the [Start] button.

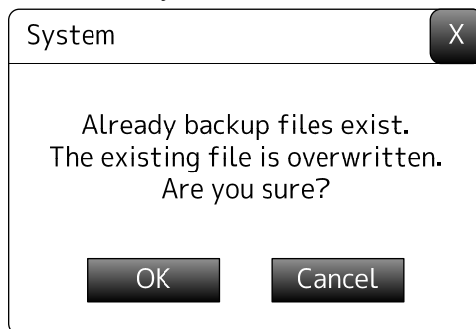
The following confirmation dialog box appears.



7. Click on the [OK] button

Restoration of data from the drive you selected in the drive selection combo box starts.

If data already exists on the SSD, an overwrite confirmation dialog box appears.



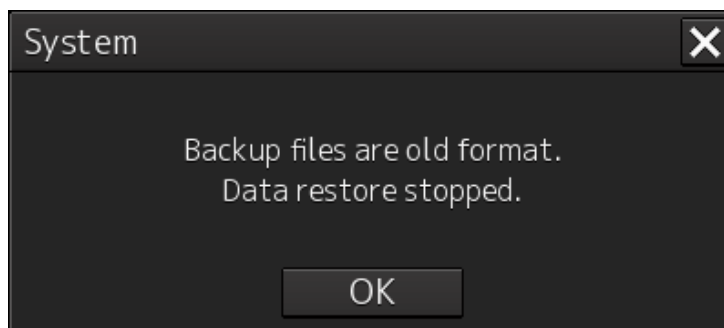
To start restoring data, click on the [OK] button.

Note

Do not perform any other operations until restoration finishes. Doing other operations may cause the restoration operation to fail.

Memo

If there is no compatibility between the data you attempted to restore and this equipment, the following dialog box appears and restoration will not be performed.



Click on the [OK] button and cancel data restoration.

5.3 Recovering the C Drive Image

CAUTION



Do not turn off the power during Backup/Restore.
Otherwise, a function may fail, and an accident may occur.



Do not do the backup operation of data while sailing.
The radar application should be ended to begin the data backup. It becomes impossible to observe using radar and this may lead to accidents.



Whenever you try to perform disk image recovery, always make sure that the backup power is fed to the PSU of the Display Unit. Unexpected shutdown during recovery may cause a system malfunction.

The operating system (OS) of this equipment runs on the C drive.

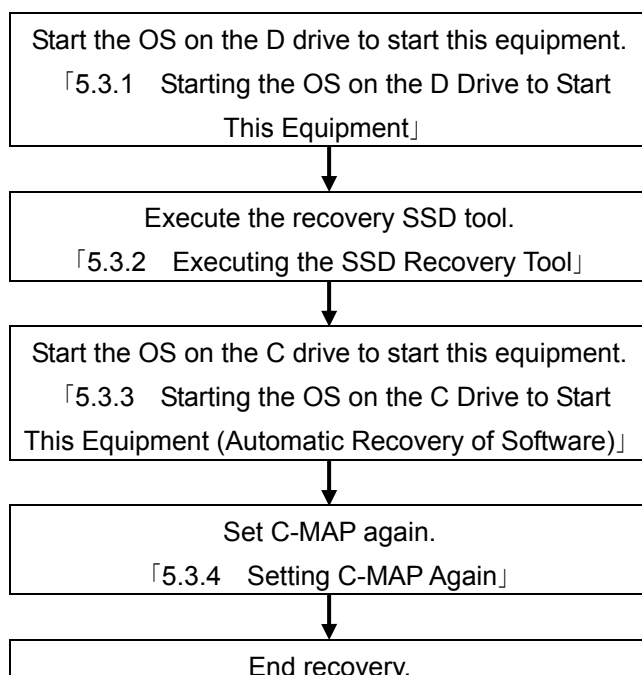
The entire content of the C drive is saved in the D drive C in its image.

In case the operation of the OS on the C drive becomes unstable, the image of the C drive can be written back from the D drive.

Note

Once the image of the C drive is written back, the information concerning C-MAP is cleared.
After image write back is performed, re-register the C-MAP database and license, and perform update as necessary.

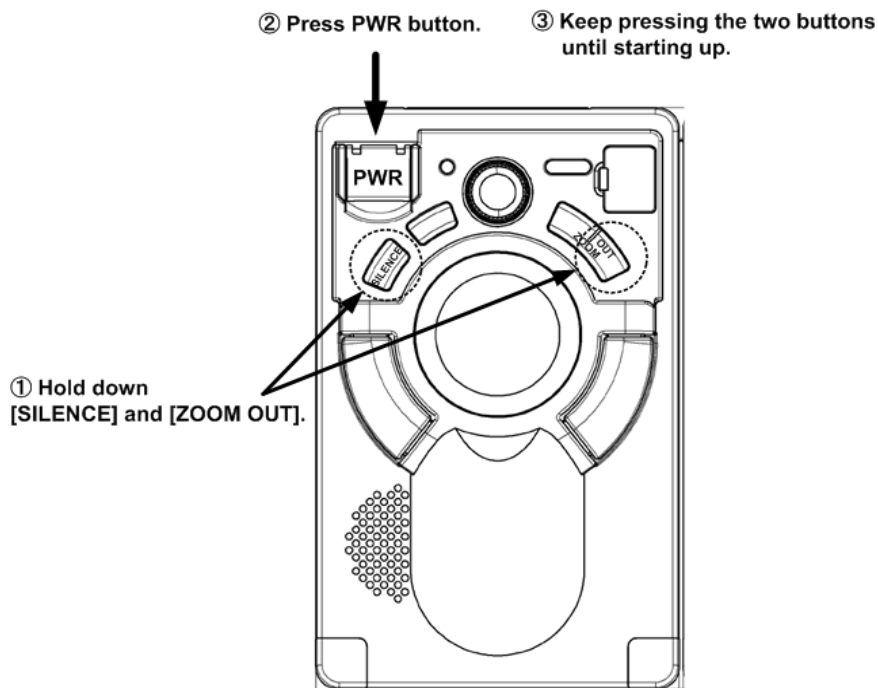
The flow of C drive image write back is as follows.



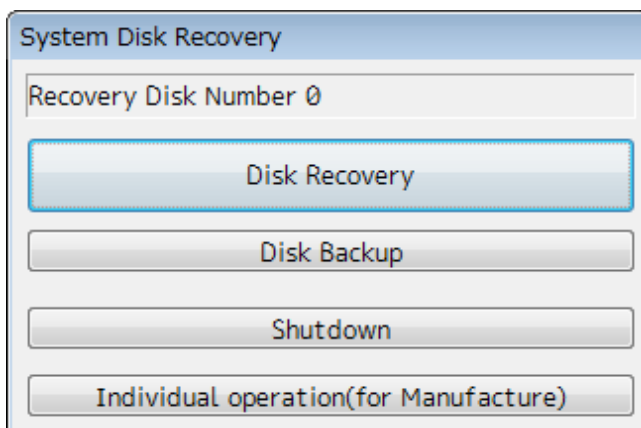
5.3.1 Starting the OS on the D Drive to Start This Equipment

Start the OS on the D drive to start this equipment according to the following procedure.

1. **Enter the power to this equipment while simultaneously holding down the [SILENCE] key and [ZOOM OUT] keys.**



When startup is completed, the following message is displayed.



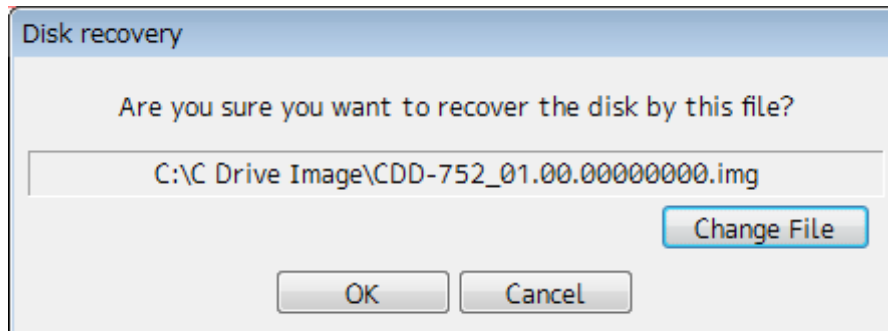
The recovery SSD tool can be executed in this state.

5.3.2 Executing the SSD Recovery Tool

Execute the SSD recovery tool to write back the C drive image.

1. **Click on the [Disk Recovery] button in the dialog box that appears after starting from the D drive.**

The following dialog box appears.



2. **Select the image file you want to write back to the C drive.**

Normally, select the image file that is displayed in the dialog box.

To specify another image file, click on the [Change File] button and then select the desired image file from the file list that appears.

Note

Because the equipment has been started from the D drive, the regular C drive is displayed as the D drive and the regular D drive is displayed as the C drive. So please be careful with this when selecting an image file.

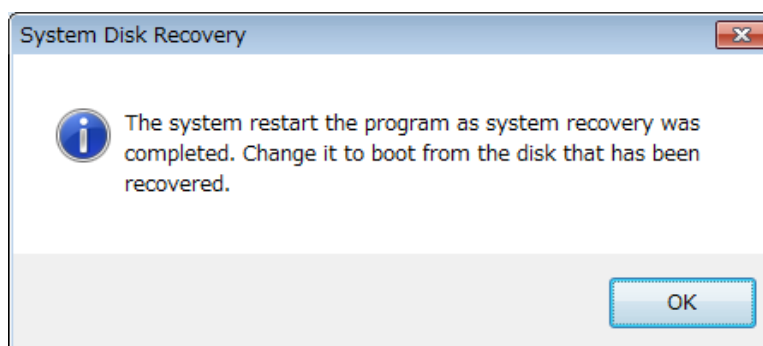
3. **Click on the [OK] button.**

Image file write back starts.

Caution

Do not perform any other operations until write back finishes. Doing other operations may cause image write back to fail.

When write back is completed, the following message is displayed.



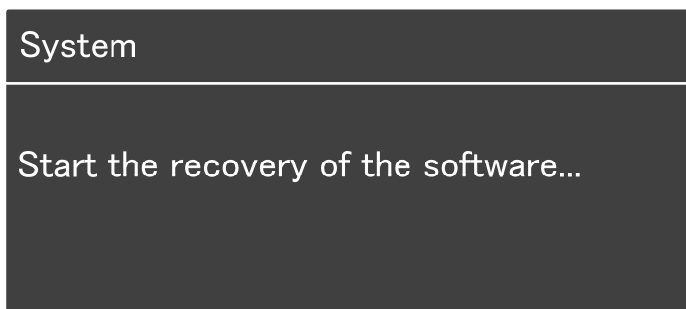
5.3.3 Starting the OS on the C Drive to Start This Equipment (Automatic Recovery of Software)

Start the OS written back to the C drive to start this equipment.

1. Click on the [OK] button in the dialog box that appears when write back finishes.

As the OS starts from the C drive, the applications and the various settings of the OS on the C drive automatically recover.

The following dialog box appears during recovery operation.

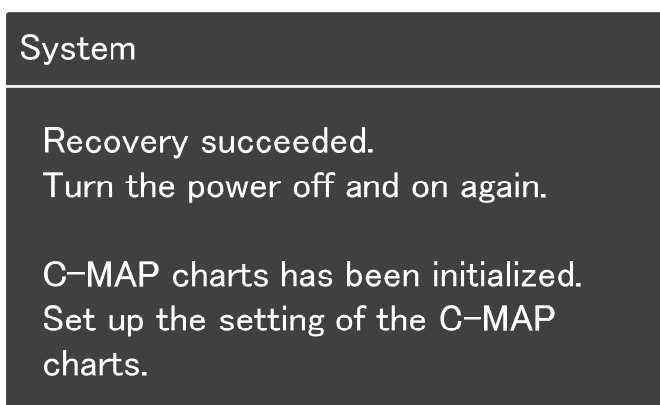


Caution

This equipment restarts during recovery operation. Do not perform any other operations until recovery finishes.

Doing so may cause recovery to fail, leading to accidents.

When recovery is completed, the following messages are displayed.



2. Press the [Power] button on the operation panel to turn OFF the power to this equipment.

5.3.4 Setting C-MAP Again

Start this equipment again and perform settings associated with C-MAP.

Register the database and license again.

Also, perform update as necessary.

For further information, see "Additional Manual for Chart Installation 4.3 Importing C-MAP Ed.3".

5.4 Rollback of the Software

CAUTION



Do not turn off the power during Rollback.
Otherwise, a function may fail, and an accident may occur.



Do not do the rollback operation of data while sailing.
The radar application should be ended to begin the data backup. It becomes impossible to observe using radar and this may lead to accidents.



Whenever you try to perform rollback, always make sure that the backup power is fed to the PSU of the Display Unit. Unexpected shutdown during rollback may cause a system malfunction.

By rollback operation, you can downgrade MFD software version to the previous version.



The software version you can downgrade is until the version you have updated just before. You cannot downgrade the software version to the second or more versions from the latest install version.

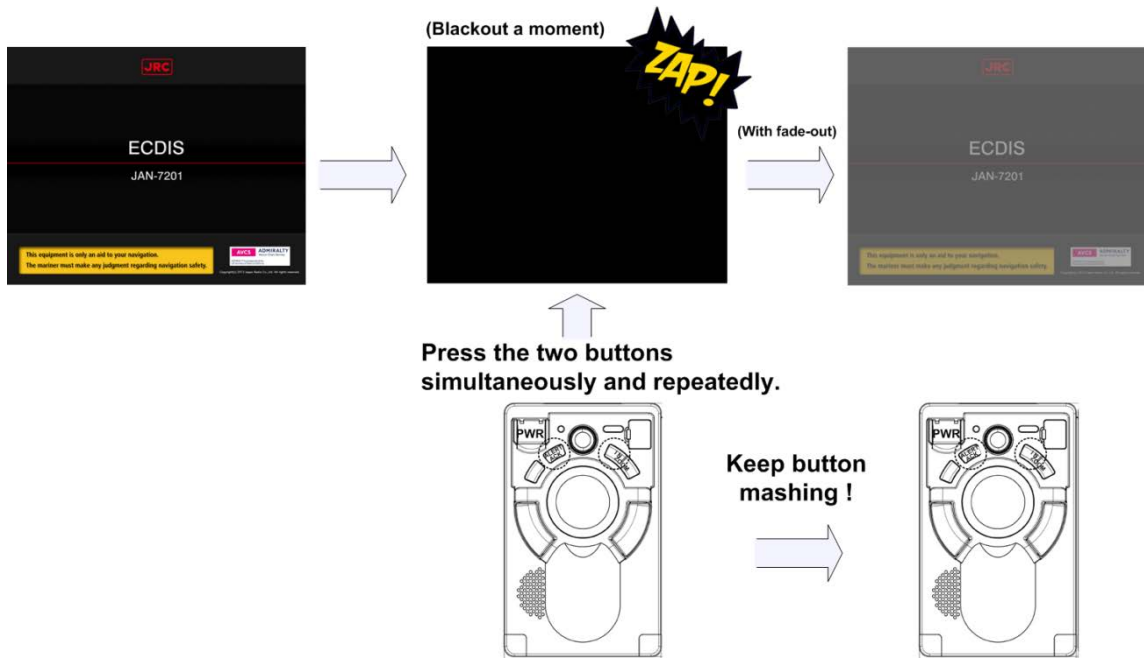
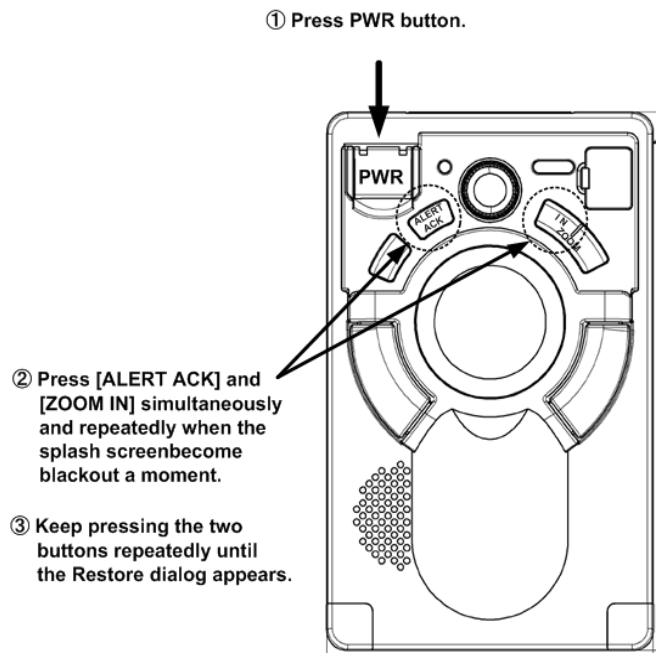


If the software of the Display Unit have never updated ever, you cannot downgrade it.

1. Turn on the Display Unit power.

The splash screen will appear.

2. **Press [ALERT ACK] and [ZOOM IN] buttons simultaneously and repeatedly when the splash screen become blackout a moment.**
Keep pressing the two buttons repeatedly until the Restore dialog appears.

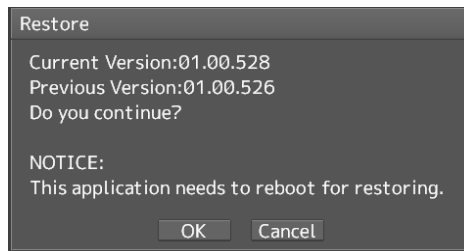


Note

If you try to press the two buttons at the same time of its booting up, the MFD application would not start up correctly because of freeze at the splash screen.

In that case, turn OFF the power by pressing the PWR button on the TOPU, and then turn ON it again.

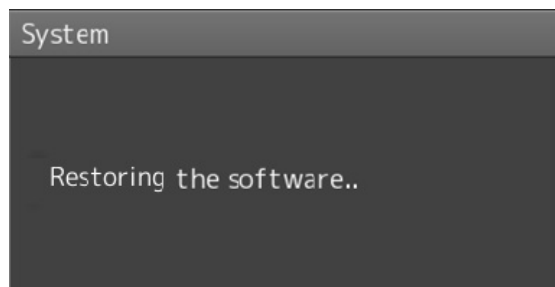
3. Restore dialog appears.



Confirm the contents and click [OK]. Rollback will start and the following message will be displayed.

Note

If you perform a rollback, Following user data of the latest version will be erased. Certificate, Connection setting for ISW, Portlist, Personal settings, Route, User chart, Total distance

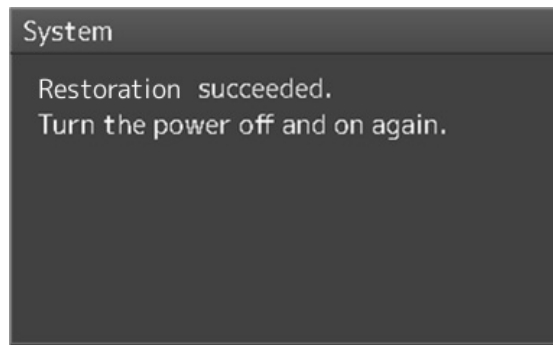


Wait for a while until the rollback completes.

Note

This equipment may restart during installation.

When rollback is completed, the following message is displayed.



4. Turn off the power of this equipment.
5. Restart this equipment.
6. Start MFD, and confirm that the software version number has been updated in the [Software] tab by selecting [Maintenance] - [System Information].

5.5 Update of Firmware

WARNING



When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.



Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

CAUTION



Do not turn off the power during firmware updating. Otherwise, a function may fail, and an accident may occur.



Do not do the firmware updating operation of data while sailing. The radar application should be ended to begin the data backup. It becomes impossible to observe using radar and this may lead to accidents.



Whenever you try to CCU or TOPU firmware updating, always make sure that the backup power is fed to the PSU of the Display Unit. Unexpected shutdown during updating may cause a system malfunction.

This section describes the procedures for CCU, TOPU, and SLC/ALC firmware updating.

5.2.1 Update the CCU firmware

Note

When firmware update starts, the tasks that are active are automatically terminated. Complete the necessary operation such as saving of settings prior to the start of update.

The following item is required to update the CCU Firmware.

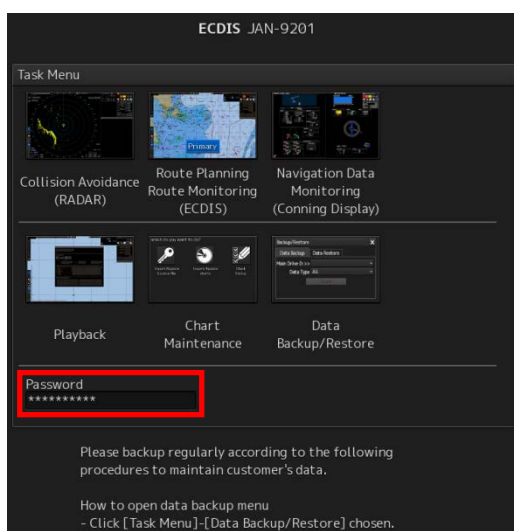
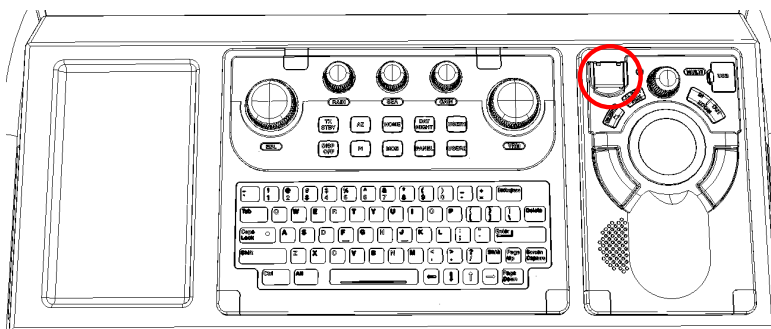
Table Required Item

No.	Name	Model Name
1	USB flash drive containing CCU Firmware update Tool and data *1	—

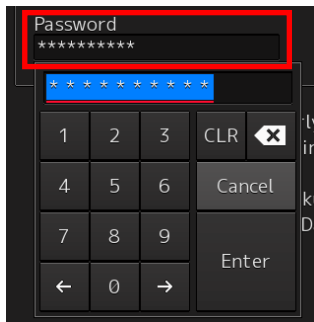
*1 Do not use Flash drives which are password protected or encrypted

1. Turn the power ON and activate the maintenance tool

- (1) Apply power to the Display Unit by using the PWR switch of the trackball operation unit. The Task selection screen will be displayed.

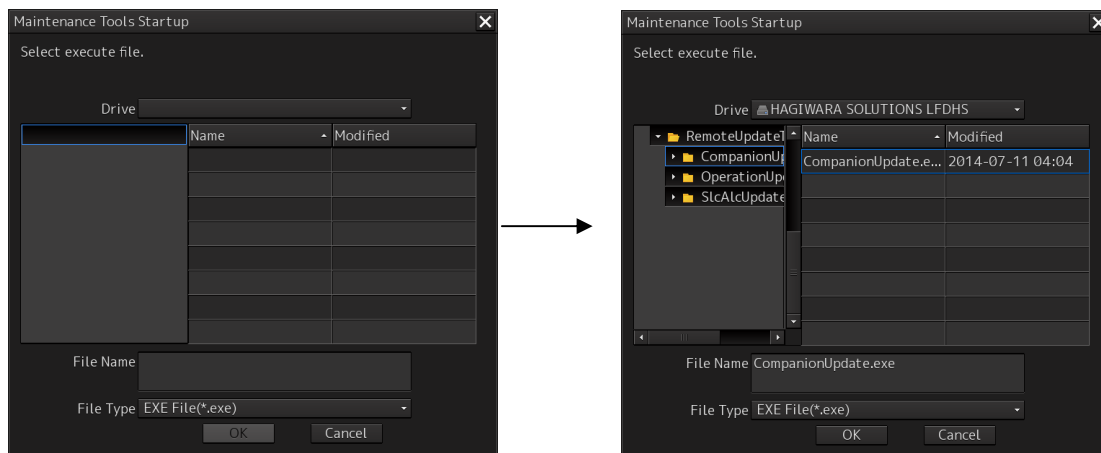


- (2) Position the cursor on the Password window and left-click on it. The Password input screen is displayed. Enter “1074”.

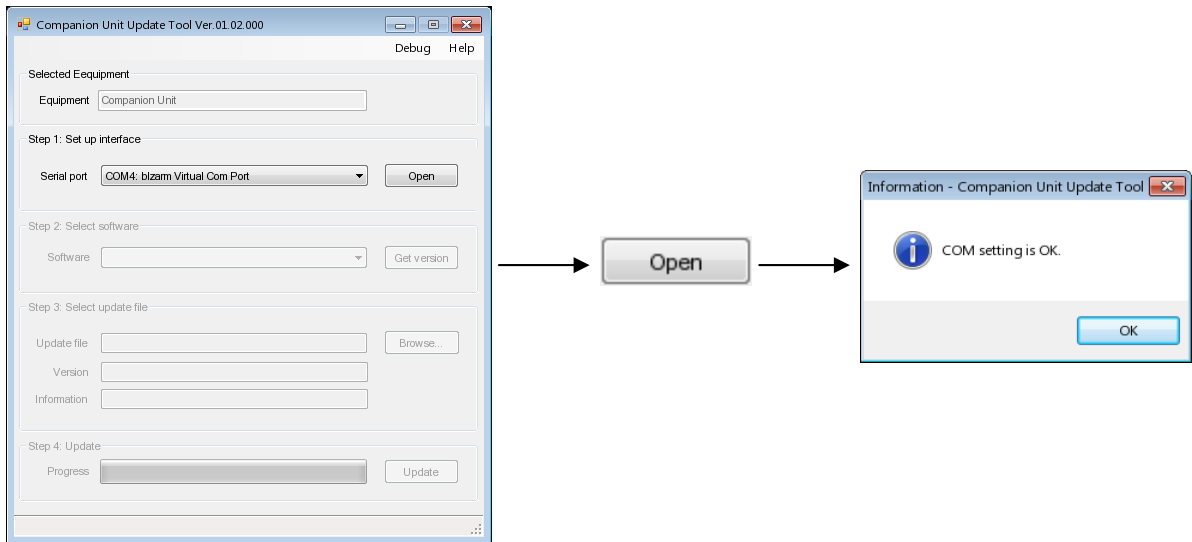


2. Updating the CCU Firmware by using the remote update tool

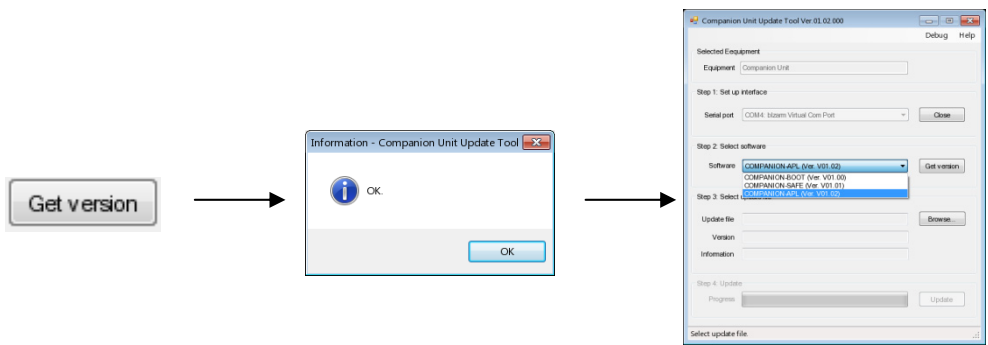
- (1) The maintenance tool is activated. Connect the USB flash drive containing the CCU Firmware remote update tool to the USB port of the trackball operation unit.



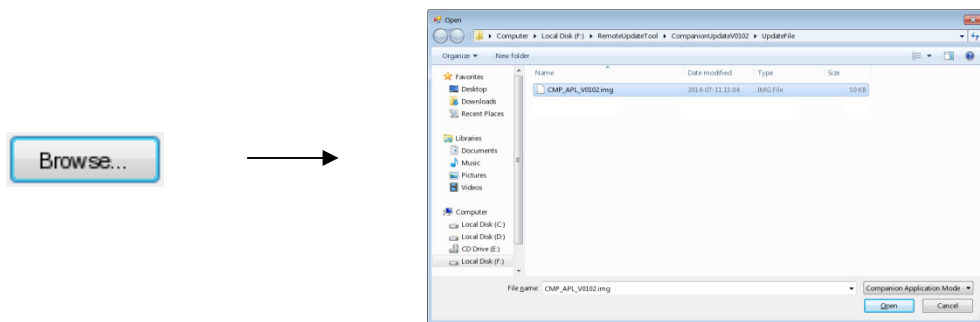
- (2) Select **CompanionUpdate.exe** and press OK. The remote update tool is activated.
- (3) Check the COM port in the **Step1 Setup Interface** item.
Check that **COM4:blzam Virtual Com Port** is selected. Do not select any other COM port.
After checking, press the Open button.



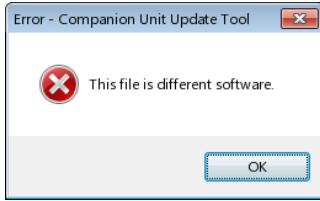
(4) Press the “**Get Version**” button in the **Step2 Select Software** item. Subsequently, select **COMPANION-APL (Ver.01.**)** from the tab. (**: Firmware version)



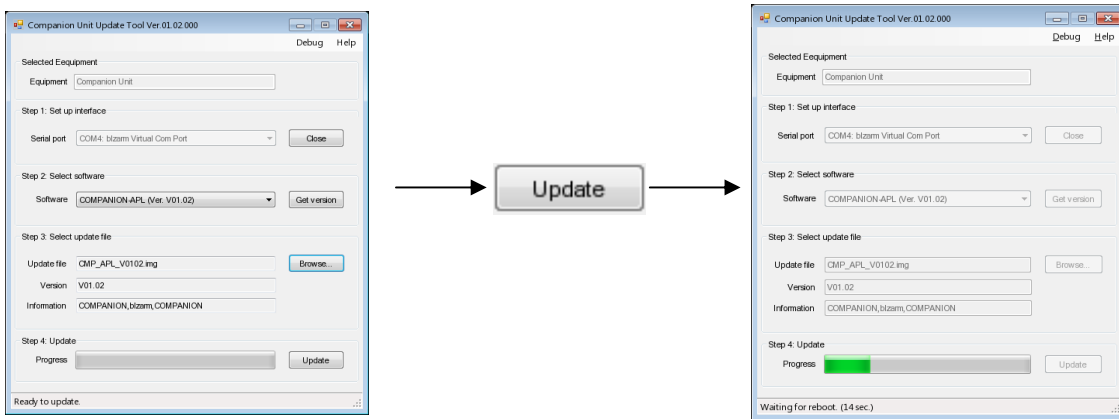
(5) Press the “**Browse...**” button in the **Step3 Select update file** item. When the Explorer screen is displayed, select the latest CMP firmware file (CMP_APL_***.img).



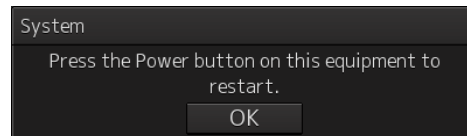
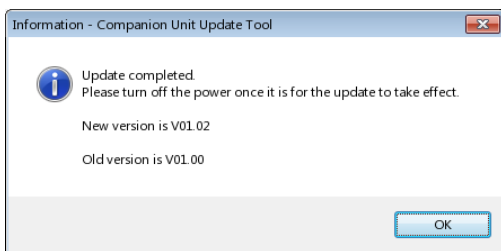
When the Firmware type and the update file do not match, an error occurs.



(6) After the file is selected, the “**Update**” button is enabled in the **Step4 Update** item. Start Update by pressing the button.



(7) When Update is finished normally, the Update completion window is displayed. When the **OK** button is pressed, the remote update tool is terminated and processing returns to the Task screen. When the restart confirmation screen is displayed, restart.



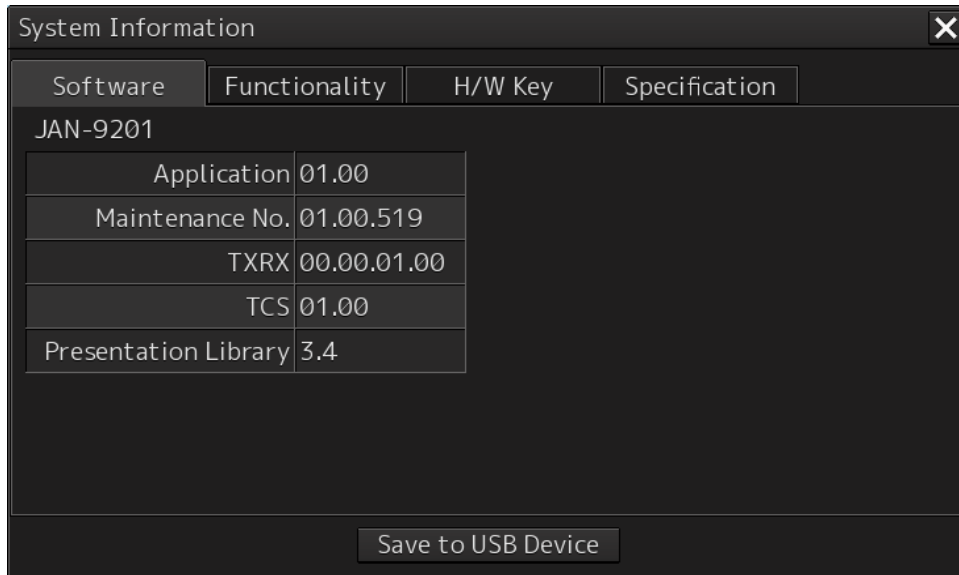
3. Confirming the updating version

After updating, confirm the firmware version in maintenance menu.

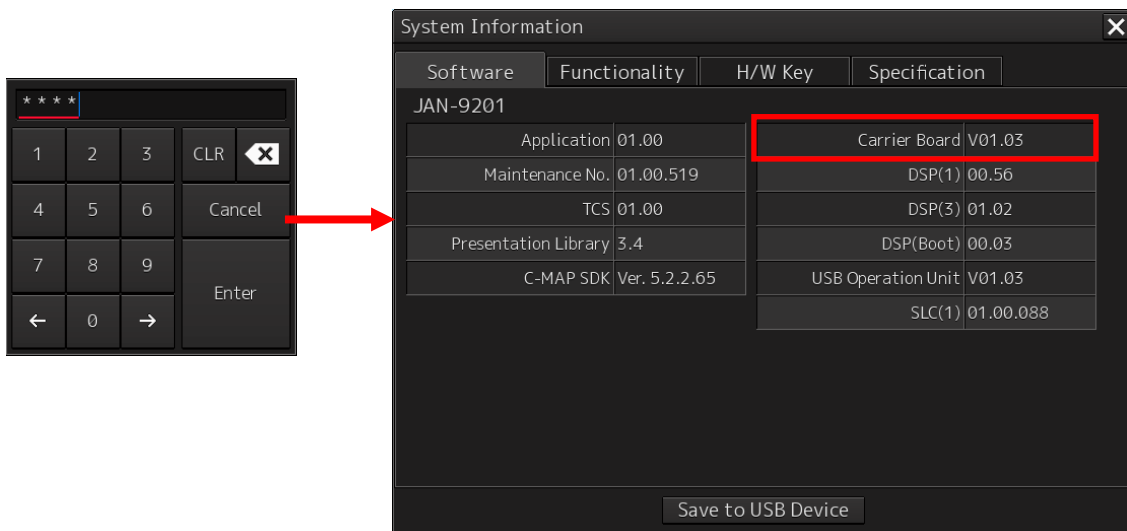
- (1) Click on the [Menu] button on the left toolbar.
The menu is displayed.

- (2) Click on the [Maintenance] - [System Information] button on the menu.
 The [System Information] dialog box appears.
 Click on the [Software] tab.

- (3) The software information is displayed.



- Click on this list and code input dialog is displayed.
 Enter "0000" and additional software information is displayed.



- (4) Confirm updating firmware version.
 Confirm that the version number displayed at "Carrier Board" equals to the CMP firmware file.

5.2.2 Update the TOPU firmware

Note


When firmware update starts, the tasks that are active are automatically terminated. Complete the necessary operation such as saving of settings prior to the start of update.

Note

In TOPU update, do NOT use the USB port on TOPU. It will be reset during the firmware update sequence. The port will become unavailable and the updating will be failure.

The following items are required to update the TOPU Firmware.

Table Required Item

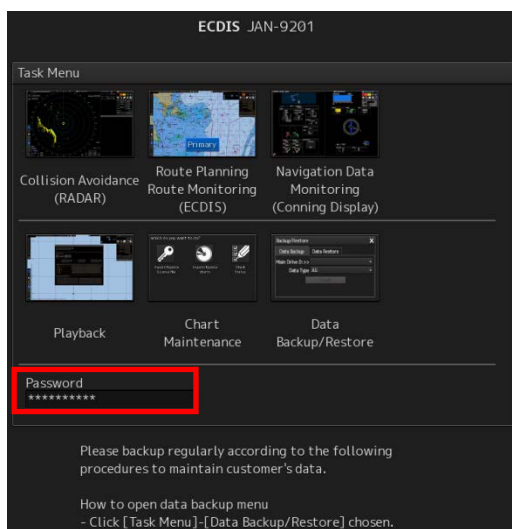
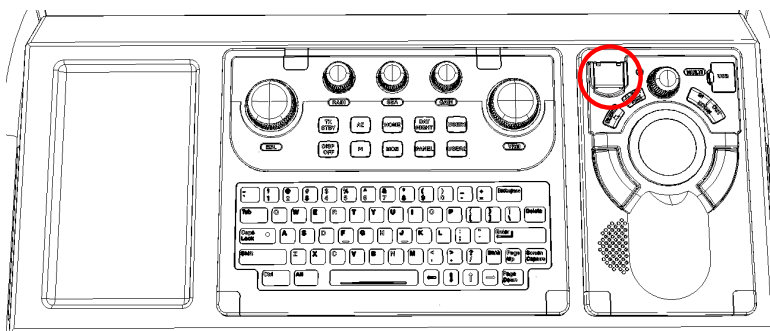
No	Name	Size	External Appearance
1	Flat head screwdriver	6 mm	
2	USB flash drive containing TOPU firmware update Tool and data *1	-	-

*1 Do not use Flash drives which are password protected or encrypted

1. Supplying the power and activating the maintenance tool

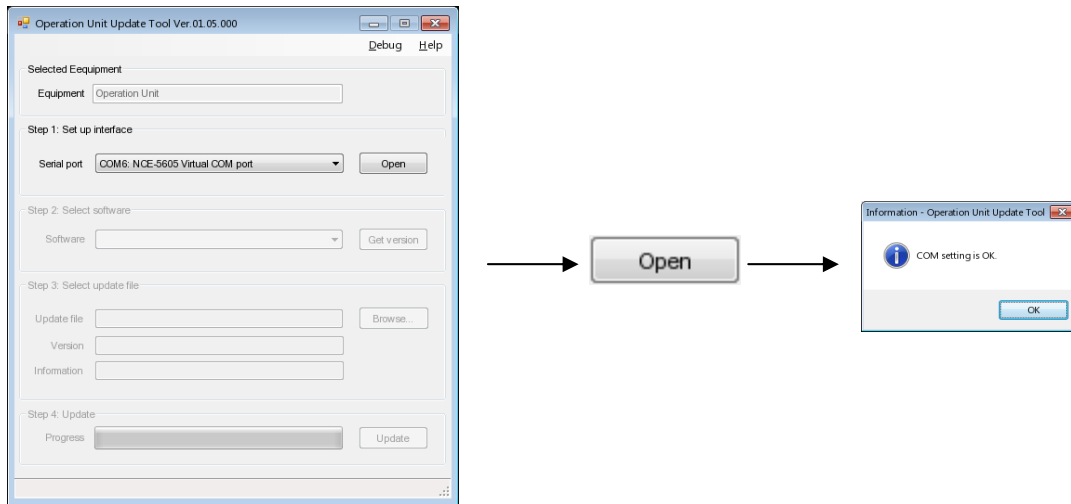
(1) Supply the power to the Display Unit by using the PWR switch of the trackball operation unit.

The Task selection screen is displayed.

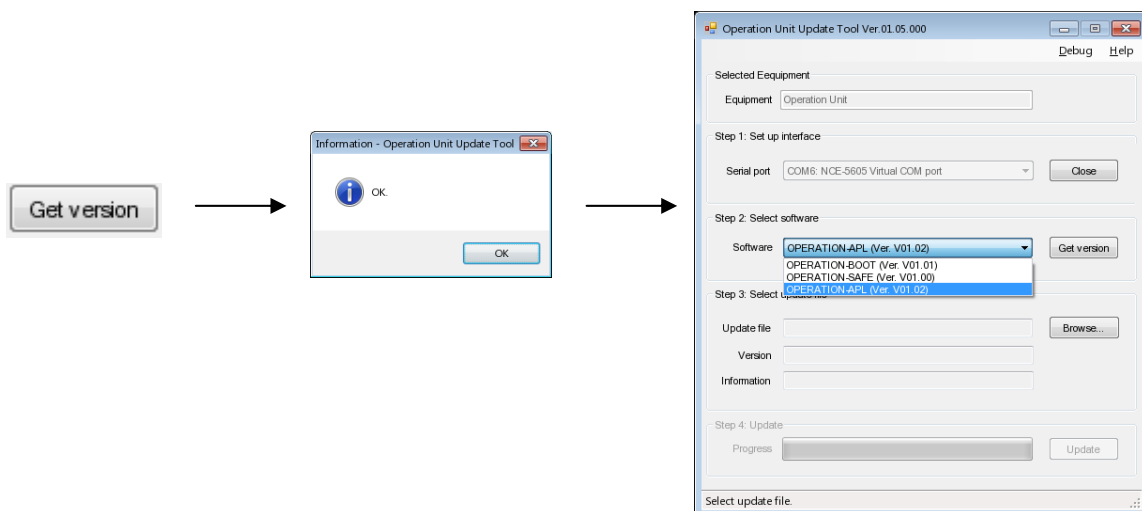


(3) Check the COM port in the **Step1 Setup Interface** item.

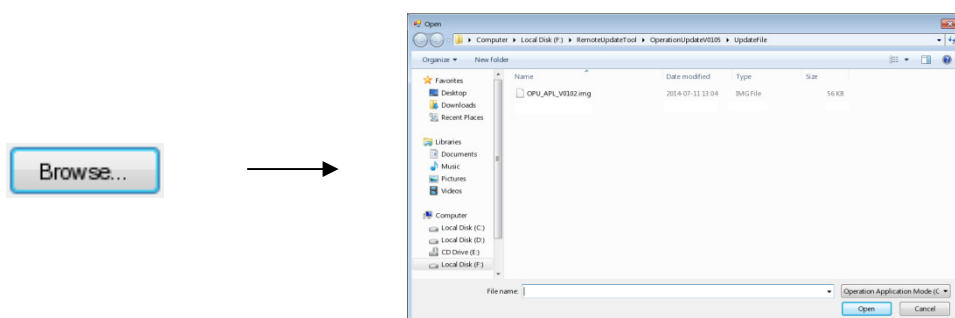
Check that **COM6:NCE-5605 Virtual COM Port** is selected. Do not select any other COM port. After checking, press the **Open** button.



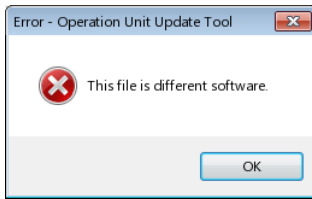
(4) Press the **“Get Version”** button in the **Step2 Select Software** item. Subsequently, select OPERATION-APL (Ver.V01.***) from the tab. (**: Firmware version)



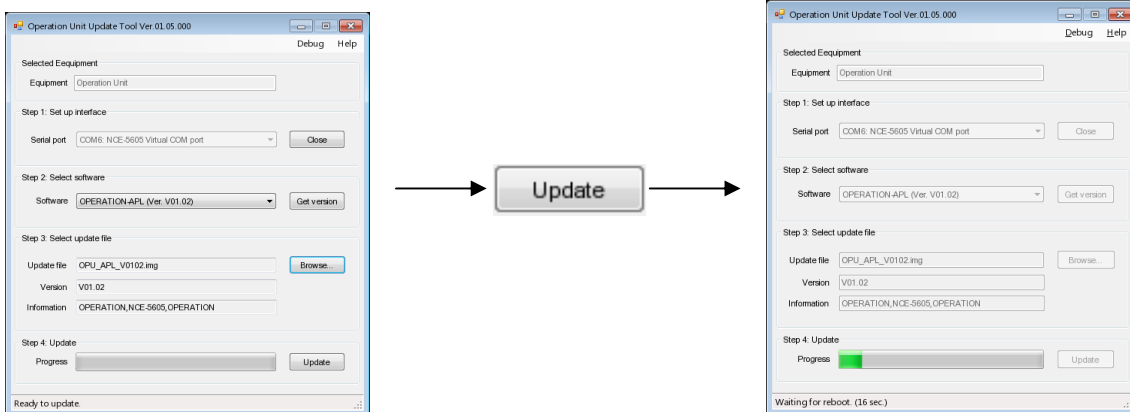
(5) Press the **“Browse...”** button in the **Step3 Select update file** item. When the Explorer screen is displayed, select the latest TOPU CMP firmware file (OPU_APL_***.img).



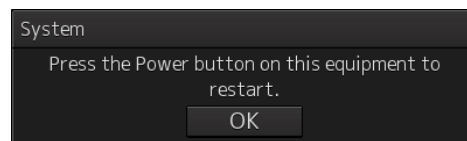
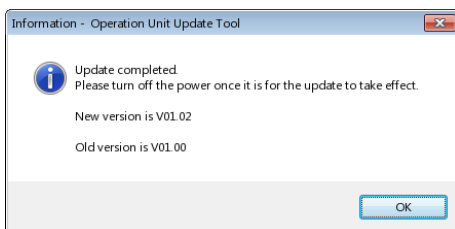
When the Firmware type and the update file do not match, an error occurs.



(6) After the file is selected, the “Update” button is enabled in the **Step4 Update** item. Start Update by pressing the button.



(7) When Update is finished normally, the Update completion window is displayed. When the **OK** button is pressed, the remote update tool is updated and processing returns to the Task screen. When the restart confirmation screen is displayed, restart.

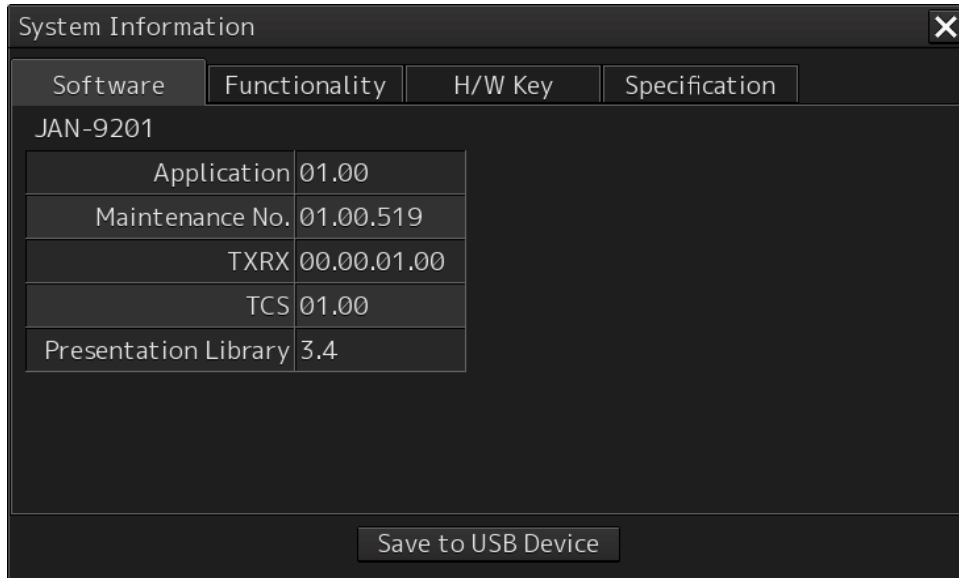


3. Confirming the updating version

After updating, confirm the firmware version in maintenance menu.

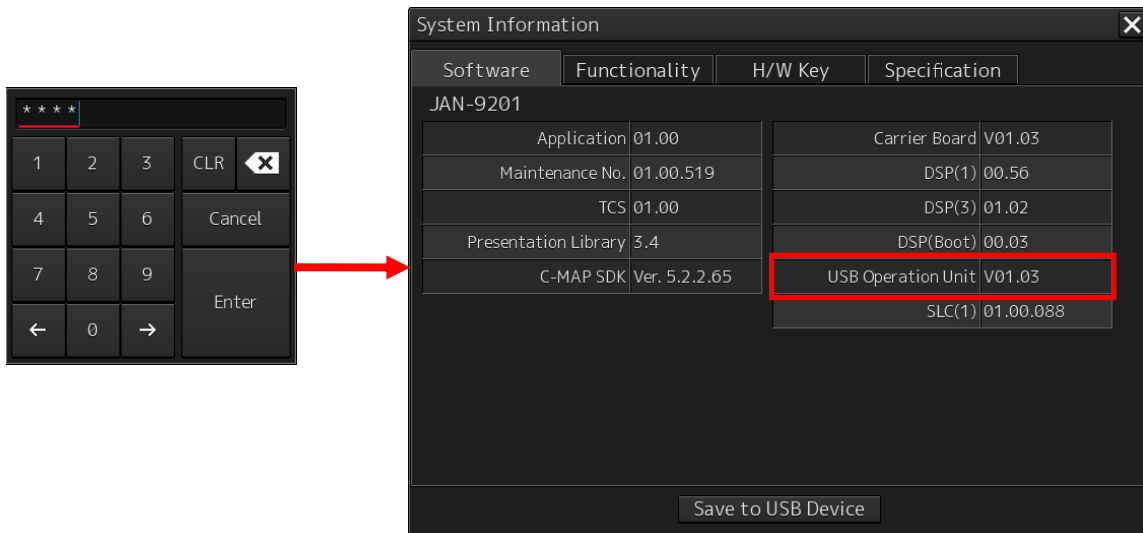
- (1) Click on the [Menu] button on the left toolbar.
The menu is displayed.
- (2) Click on the [Maintenance] - [System Information] button on the menu.
The [System Information] dialog box appears.
Click on the [Software] tab.

(3) The software information is displayed.



Click on this list and code input dialog is displayed.

Input "0000" and additional software information is displayed.



(4) Confirm updating firmware version.



Confirm that the version number displayed at "USB Operation Unit" equals to the TOPU CMP firmware file.

Update the SLC/ALC firmware

Update the firmware of SLC/ALC that have been installed to the latest version.

The items shown in the following table are required for updating work.

Table Required Tools

No	Name	Size	Appearance
1	Flat head screwdriver	6 mm	
2	Phillips screwdriver	Size #2	
3	USB flash drive containing SLC firmware update Tool and data *1	-	-

*1 Do not use Flash drives which are password protected or encrypted



Do not lose the screws as they will be used again.

Note

When firmware update starts, the tasks that are active are automatically terminated. Complete the necessary operation such as saving of settings prior to the start of update.

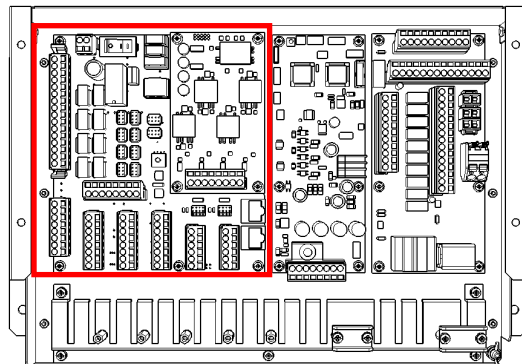
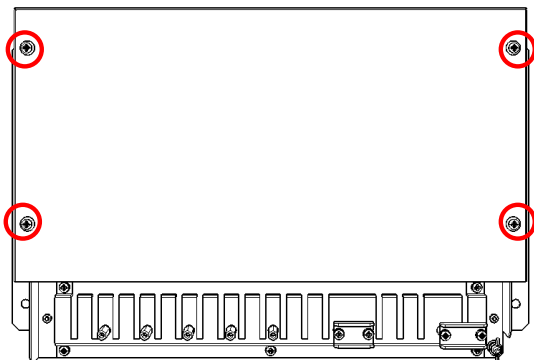
4. Prior confirmation

Confirm the following contents before the update.

(1) Number of SLCs/ALCs that are installed on this ship

Check the JB on this ship and check the number of SLCs/ALCs that have been installed. Firmware updating must be carried out for all the SLCs/ALCs.

Open the cover (fixed by four screws) of each JB and check that SLC or ALC have been installed.



(2) Confirming the setting of SLC/ALC S3 rotary switch

Check the setting of S3 rotary switch of SLC/ALC. If there is an SLC with the same switch setting in each of the MAIN network and SUB network, the firmware cannot be updated correctly.

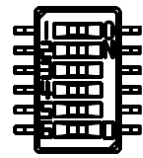
SLC/ALC S3 rotary switch

SW setting	Mode
0	No.1 SLC
1	No.2 SLC
2	No.3 SLC
3	No.4 SLC
4	No.5 SLC
5	No.6 SLC
6	No.7 SLC
7	No.8 SLC
8	No.9 SLC
9	No.10 SLC
A	No.11 SLC
B	No.12 SLC
C	No.1 ALC
D	No.2 ALC
E	No.3 ALC
F	No.4 ALC

MAIN/SUB network identification seal
 SLC No. identification seal
 SLC/ALC identification seal

LAN connector
 J8111: For Main
 J8112: For Sub

Main/Sub network setting



SW1	LAN Setting (for SLC)	OFF	Main LAN
		ON	Sub LAN
SW2	LAN Type	OFF	IEC61162-450
		ON	JRC
SW3	Set Always OFF		
SW4	Set Always OFF		
SW5	Set Always OFF		
SW6	Set Always OFF		

(3) Confirming network connection

By using the network connection from Display Unit, update the SLC firmware.

Check the network connection in advance.

Check that Display Unit, NQA-2443 Sensor LAN Unit (referred to as the Sensor LAN Unit henceforth), and SLC/ALC are all turned on.

SLC that is connected to MAIN LAN:

Check that **CCU LAN1 - Sensor LAN unit for Main - SLC J8111** are connected through the Ethernet Cable.

SLC that is connected to SUB LAN:

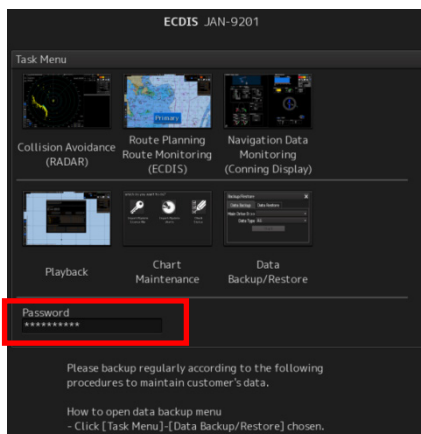
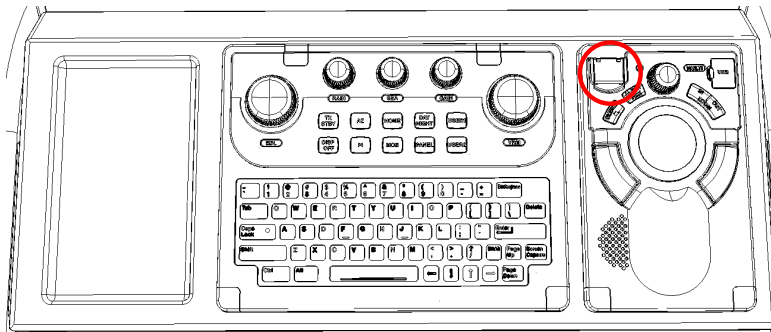
Check that **CCU LAN2 - Sensor LAN unit for Sub - SLC J8112** are connected through the Ethernet cable.

5. Supplying the power and activating the maintenance tool

Check that Display Unit, Sensor LAN Unit, and SLC are all turned on. For Display Unit, check also that the breaker of NBD-913 is turned ON.

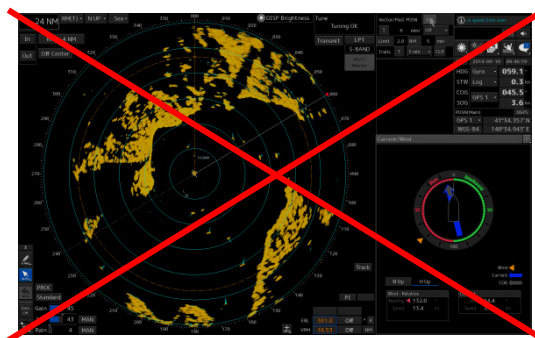
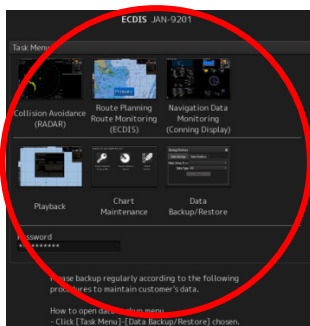
Update can be performed from any Display units as long as they are connected to SLC through the network.

- (1) Turn on the power of Display Unit by using the PWR switch of the trackball operation unit. The Task selection screen will be displayed.

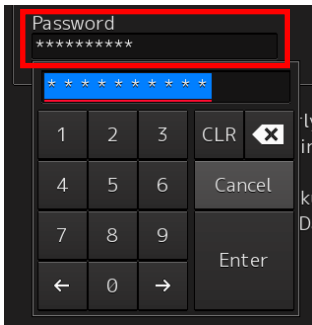


CAUTION!!

Whenever you begin update the SLC firmware, make sure that the other Display Unit on the network does not run the Task applications (RADAR, ECDIS...etc.). Other Display Units must be set Task select Screen during the updating.

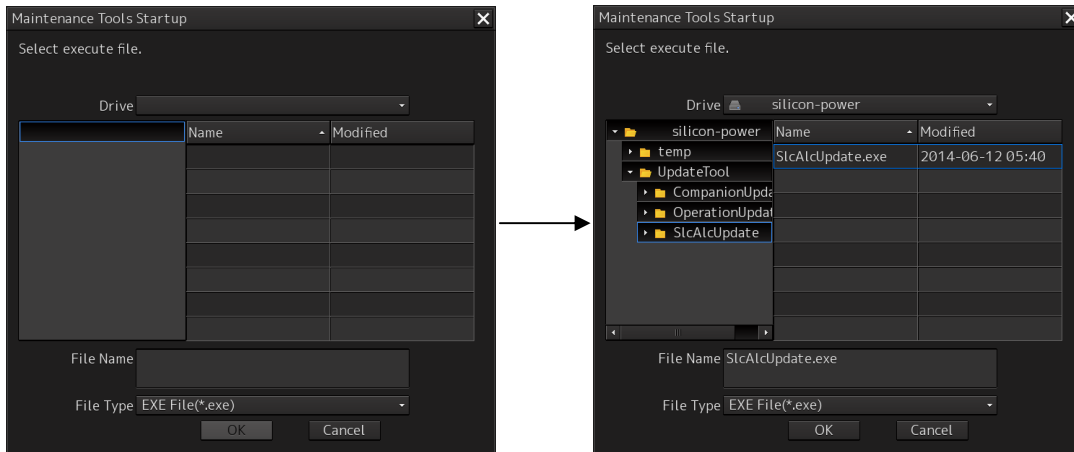


- (2) Position the cursor on the Password window and left-click on it. The Password input screen is displayed. Enter “1074”.



6. Updating SLC/ALC firmware by using the remote update tool

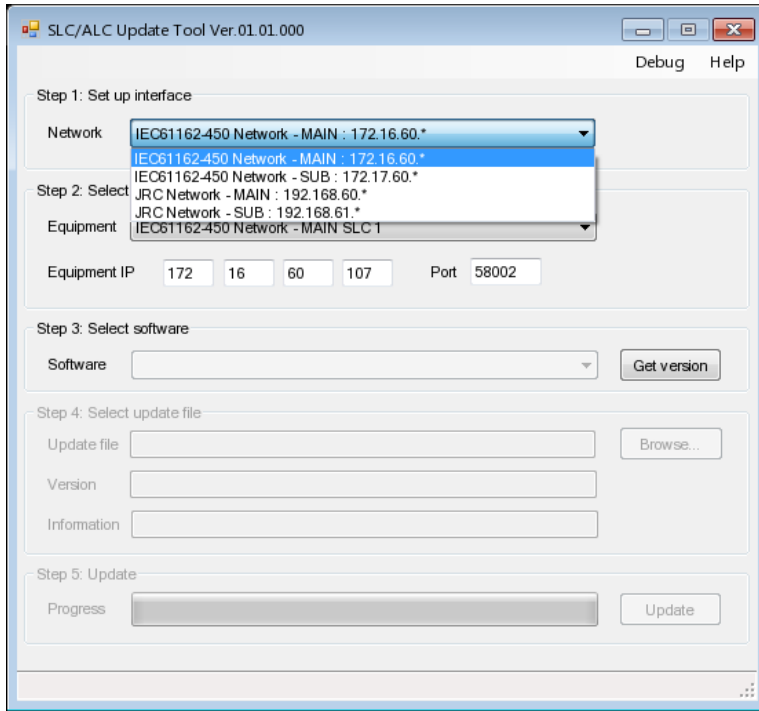
- (1) The maintenance tool is activated. Connect the USB flash drive containing the SLC/ALC remote update tool to the USB port of the trackball operation unit.



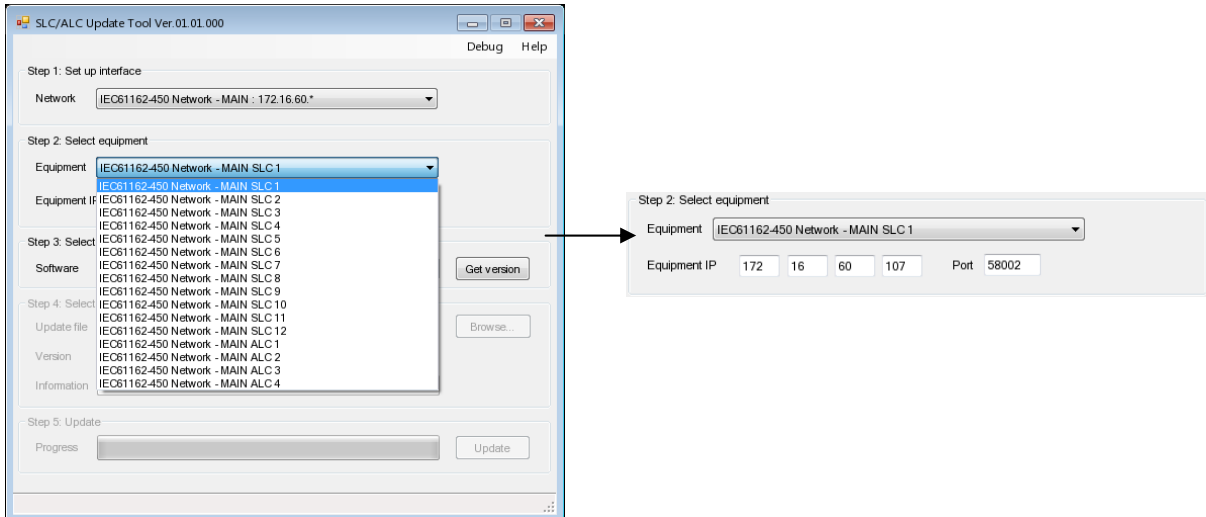
- (2) Select SlcAlcUpdate.exe and press OK. The remote update tool is activated.

- (3) Select a network in the Step1 Setup Interface item.

SLC that is connected to MAIN LAN: IEC61162-450 Network-MAIN:172.16.60.*
 SLC that is connected to SUB LAN: IEC61162-450 Network-SUB :172.17.60.*



- (4) In **Equipment of Step2 Select equipment**, select the SLC for which firmware update is to be performed. The IP address of the selected SLC is automatically input in **Equipment IP**. Do not change the port.

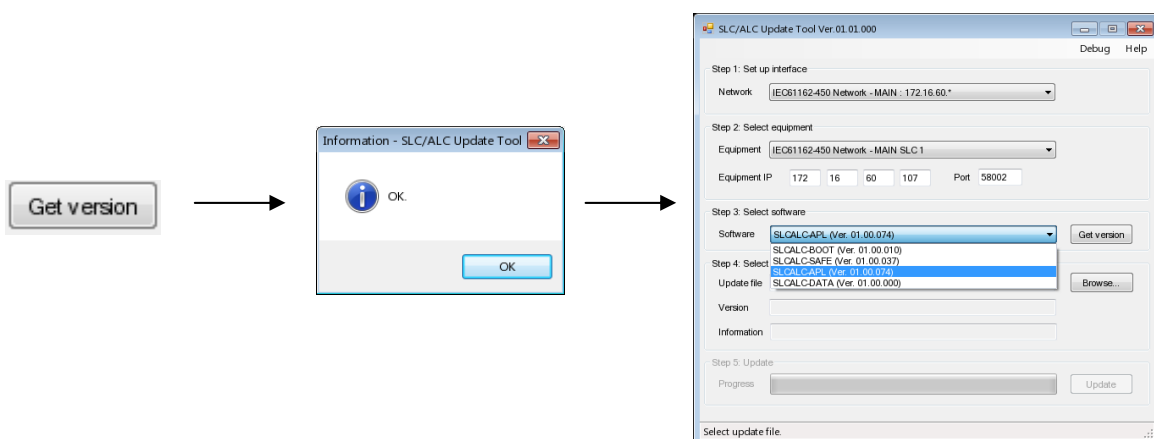


Use the No.* seal of SLC as the numeric digits of SLC*. For instance, No.2 SLC=SCL2.

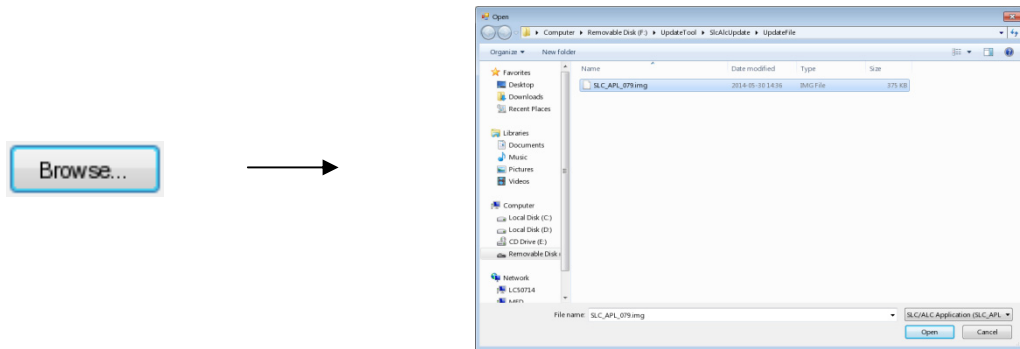
The following table shows the list of IP addresses of SLC/ALC for confirmation.

S3 Position	Operation mode	No.	Main LAN	Sub LAN
0	SLC	SLC1	172.16.60.107	172.17.60.107
1		SLC2	172.16.60.108	172.17.60.108
2		SLC3	172.16.60.109	172.17.60.109
3		SLC4	172.16.60.110	172.17.60.110
4		SLC5	172.16.60.111	172.17.60.111
5		SLC6	172.16.60.112	172.17.60.112
6		SLC7	172.16.60.113	172.17.60.113
7		SLC8	172.16.60.114	172.17.60.114
8		SLC9	172.16.60.115	172.17.60.115
9		SLC10	172.16.60.116	172.17.60.116
A		SLC11	172.16.60.117	172.17.60.117
B		SLC12	172.16.60.119	172.17.60.118
C	ALC	ALC1	172.16.60.118	172.17.60.119
D		ALC2	172.16.60.120	172.17.60.120
E		ALC3	172.16.60.121	172.17.60.121
F		ALC4	172.16.60.122	172.17.60.122

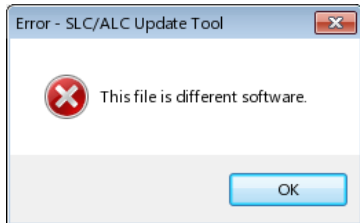
(5) Press the “**Get Version**” button on the **Step3 Select Software** item. Subsequently, select SLC/ALC-APL (Ver.01.00.***) from the tab. (**: Firmware version)



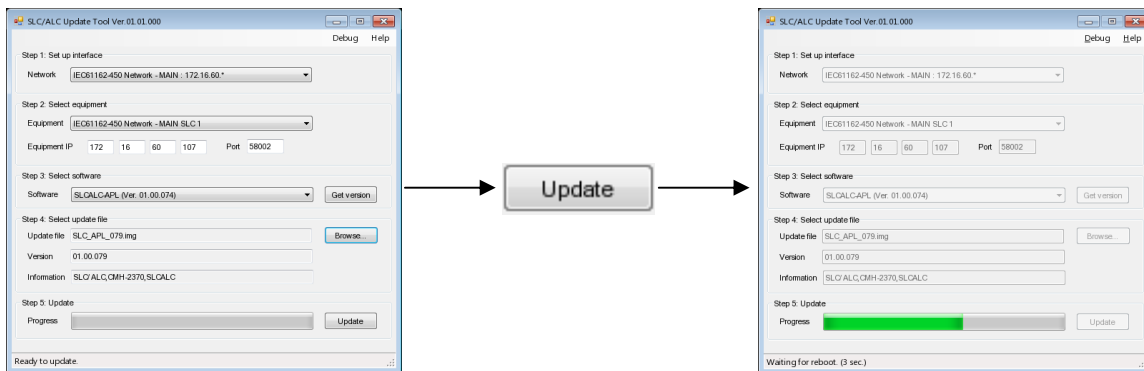
- (6) Press the “**Browse...**” button in the **Step4 Select update file** item. When the Explorer screen is activated, select the latest SLC/ALC firmware file (SLC_APL_***.img).



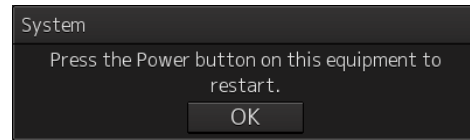
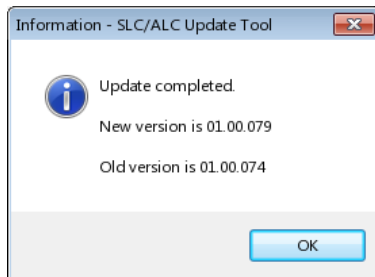
When the firmware type and update file do not match, an error occurs.



- (7) After the file is selected, the “**Update**” button is enabled in the **Step5 Update** item. Start Update by pressing the button.



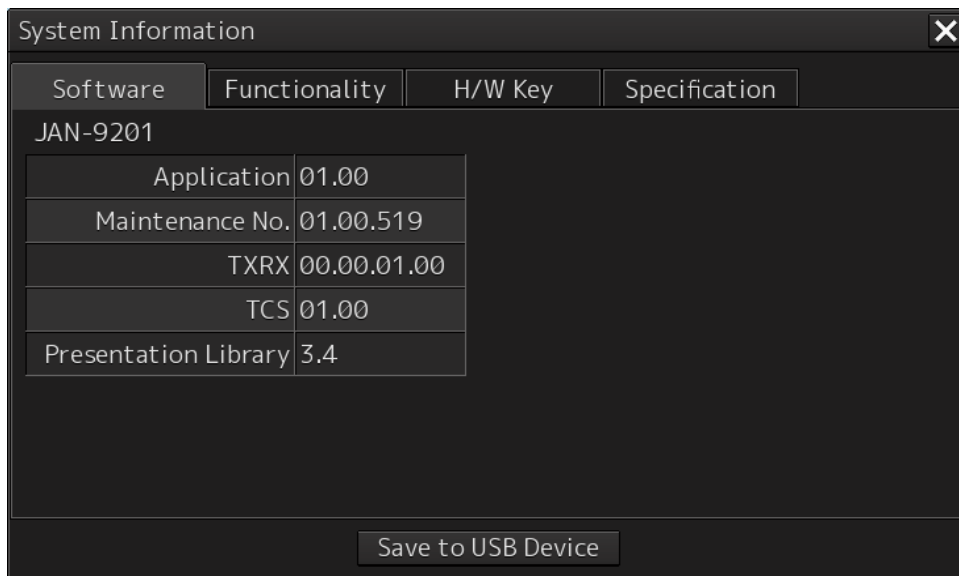
- (8) When Update is finished normally, the Update completion window is displayed. When the **OK** button is pressed, the remote update tool is terminated and processing returns to the Task screen. When the activation confirmation screen is displayed, restart.



7. Confirming the update version

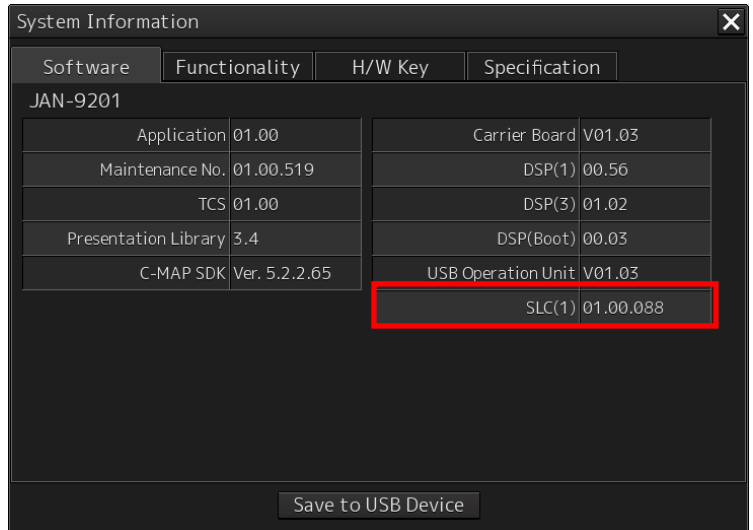
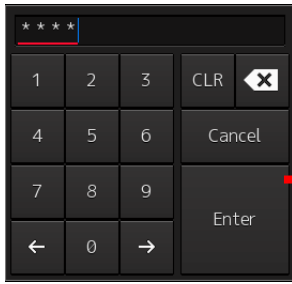
After updating, confirm the firmware version in maintenance menu.

- (1) Click on the [Menu] button on the left toolbar.
The menu is displayed.
- (2) Click on the [Maintenance] - [System Information] button on the menu.
The [System Information] dialog box appears.
Click on the [Software] tab.
- (3) The software information is displayed.



Click on this list and code input dialog is displayed.

Enter **“0000”** and additional software information is displayed.



(4) Confirm updating software version.

Confirm that the version number displayed at “**SLC(n)**” equals to the SLC/ALC firmware file.



6. Connection to External Navigation Equipment

Chapter 6. Connection to and Settings of External Navigation Equipment

6.1 Connection with Radar Options

6.1.1 Interswitch Unit

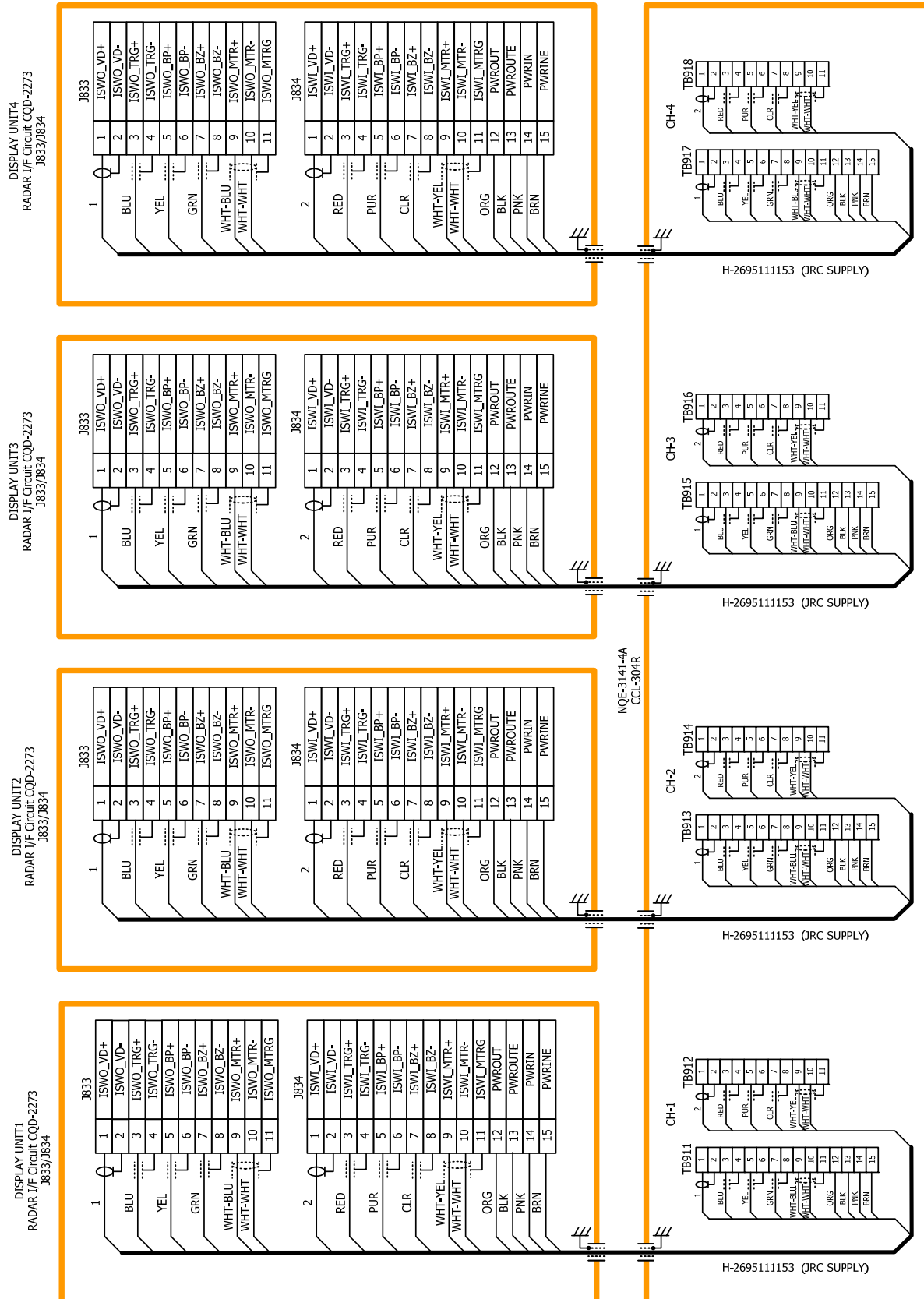
6.1.1.1 Checking the Installation Status

For information about checking the installation status of the interswitch unit, please refer to Chapter 5 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual."

6.1.1.2 Setting the Interswitch Unit

For information about checking the installation status of the interswitch unit, please refer to Chapter 5 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual."

6.1.1.3 Interconnection Diagram



6.1.2 Power Control Unit

The NQE-3167 power control unit is used when a scanner unit and a transmitter-receiver unit are installed away from the bridge, such as at the foremast.

In the case of a dual scanner unit, the maximum cable length between the display unit and the scanner unit is "65 m." In the case of a triple scanner unit, the maximum cable length between the display unit and the scanner unit is "35 m."

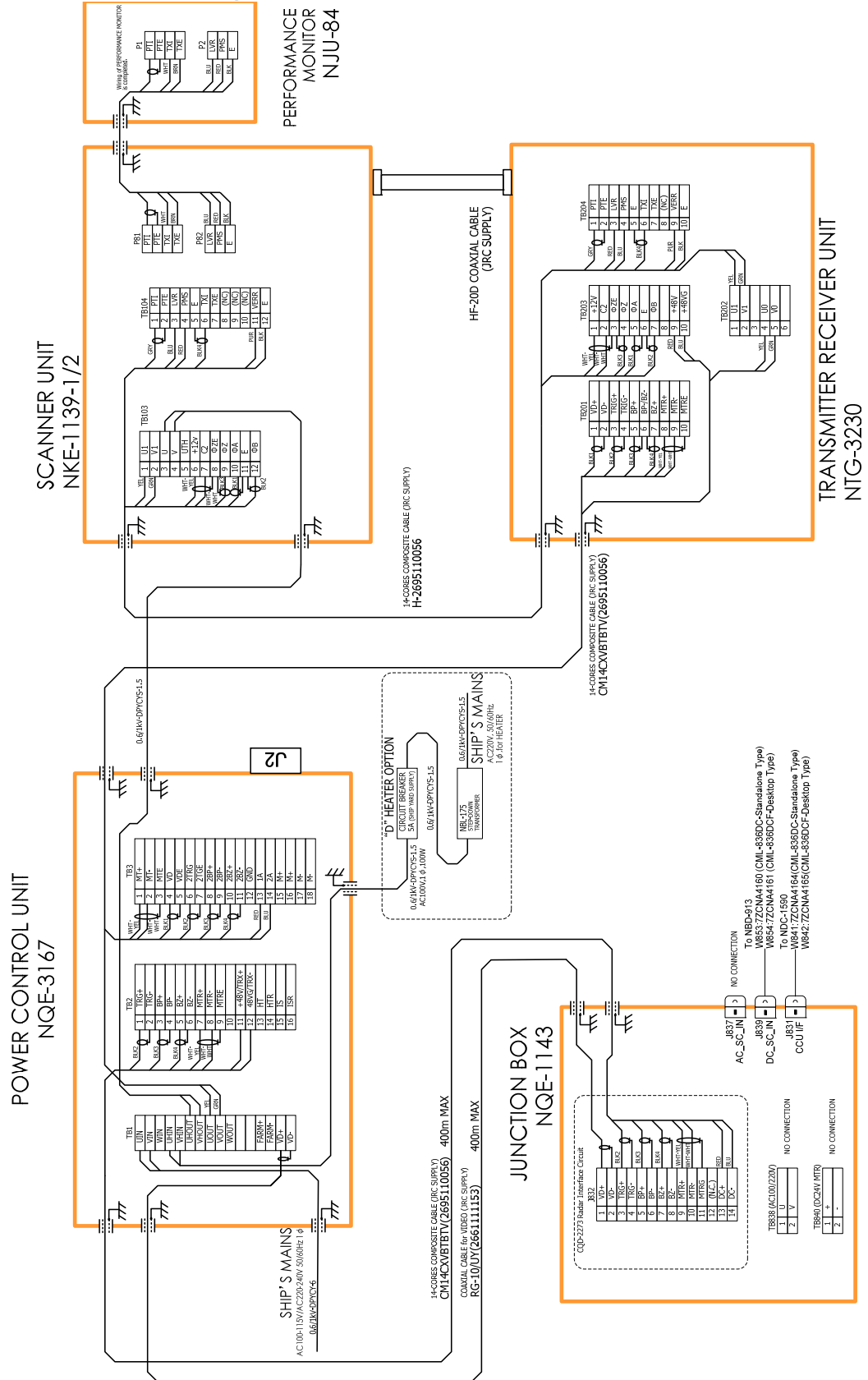
By using the NQE-3167 power control unit, it is possible to extend the maximum cable length between the display unit and the scanner unit (transmitter-receiver unit) up to "465 m."

Maximum cable length between the scanner unit and the transmitter-receiver unit	30 m
Maximum cable length between the transmitter-receiver unit and the power control unit	35 m
Maximum cable length between the display unit and the power control unit	400 m

6.1.2.1 Checking the Installation Status

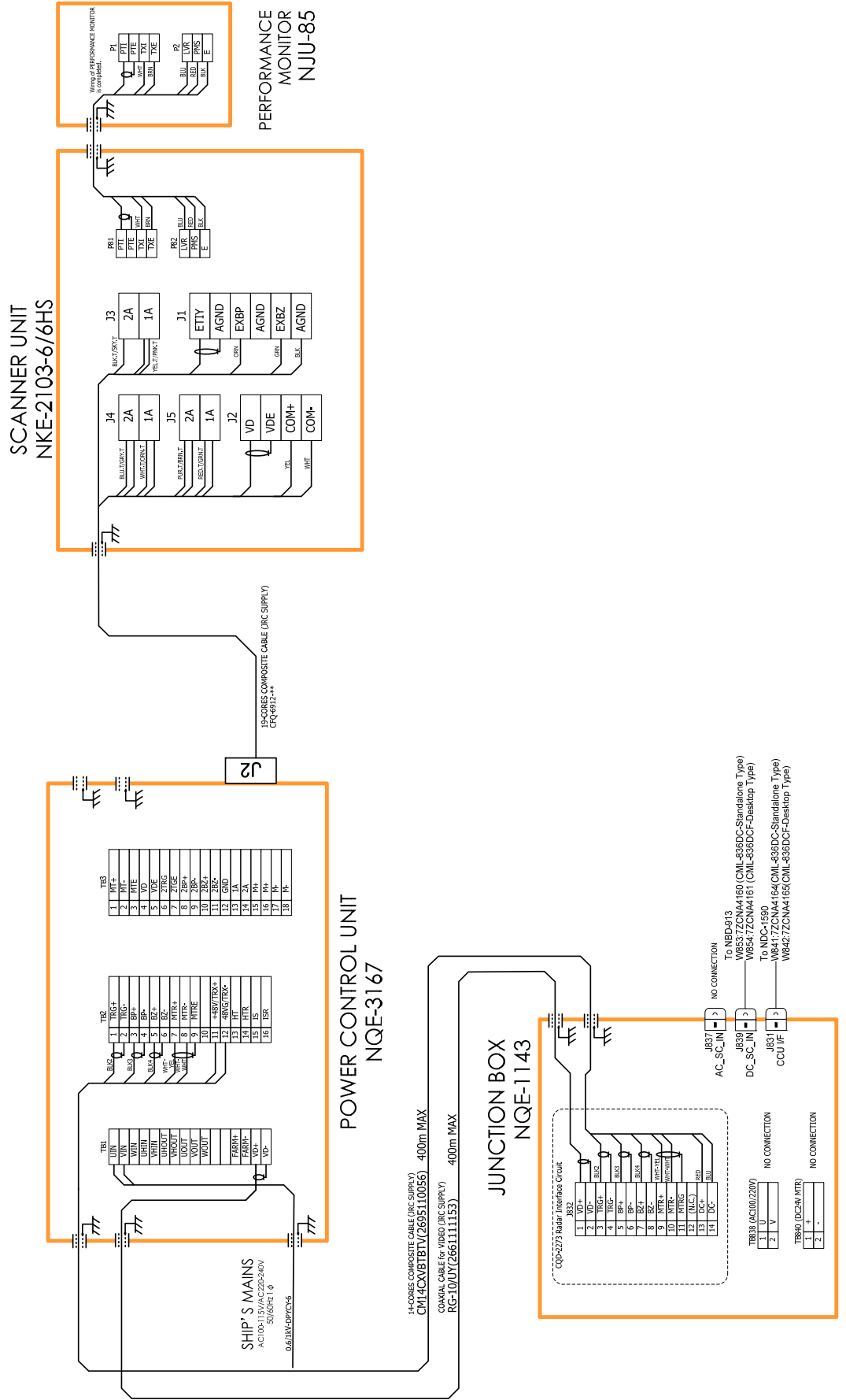
For information about checking the installation status of the interswitch unit, please refer to Chapter 5 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual."

6.1.2.2 Interconnection Diagram for JMR-9230-S3, JMR-7230-S3



JMR-9230-S3, JMR-7230-S3レーダー パワーコントロールユニット間 盤間接続図
(S-BAND 30kW RADAR)

6.1.2.8 Interconnection Diagram for JMR-9210-6X/6XH, JMR-7210-6X/6XH



6.2 Connection with VDR

6.2.1 Checking the Installation Status

The following two types of connection methods are available for connection with the voyage data recorder (VDR).

1. Connection via LAN (IEC61162-450).
2. Connection through analog RGB

Please refer to Chapter 5 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual" and check the installation status with the VDR.

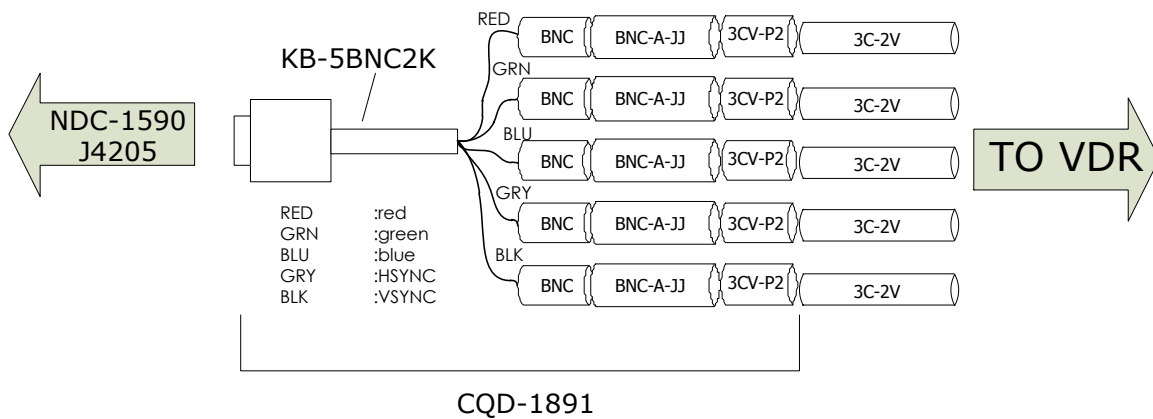
6.2.2 VDR Interface Kit

The VDR interface kit is used to connect the analog RGB signal to the VDR. For the details, refer to Chapter 5 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual".

VDR Interface Kit CQD-1891 Packing list:

DSUB15P – BNC cable (KB5BNC2K, 2 meters)	1 pc.
BNC to BNC adapter (BNC-A-JJ)	5 pc.
BNC connector (3CV-P2)	5 pc.

Use a 3C-2V coaxial cable for connection.



6.3 Connection with ECDIS

6.3.1 Checking the Installation Status

Please refer to Chapter 3 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual" and check the installation status with the ECDIS.

6.3.2 Connecting with the ECDIS

The video signal of the RADAR is output from the J836 of the CQD-2273 radar interface circuit. The radar interface circuit is mounted in the NQE-1143 JB.

Connect the No.1 ECDIS to J836 EX_OUT (VD+, VD-, TRG+, TRG-, BP+, BP-, BZ+, BZ-).

Target tracking information is output via LAN. Connect the ECDIS to the NQA-2443 Sensor LAN switch. When connecting an ECDIS of the JAN-901B/701B, JAN-901/901M/701 or JAN-2000 model to the JMR-9200/7200 Series RADAR, perform output settings of the IEC61162-1 TX terminal of the serial LAN interface circuit (SLC) in the display unit of the RADAR, and then output the target tracking information.

For the details, please refer to Chapter 3 in the "JMR-92XX/72XX JAN-92XX/72XX Installation Manual"

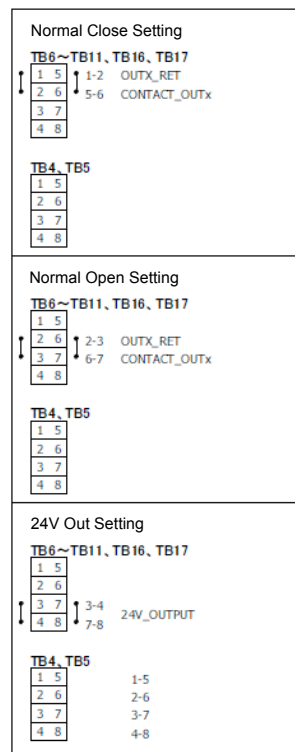
6.4 Connection with BNWAS

The display unit of this product has the function to input/output the various contact signals for the Bridge Navigational Watch Alarm System (BNWAS*). Connect necessary signals by referring to the table below.

All signals are preset at normally open when shipped from the factory.

Terminal Block	Signal Name	IN/OUT	Description	Remarks
CMH-2370 SLC J8108	SYS ALM	OUT	The system alarm status is output.	Set to normally closed with a jumper.* 1
CMH-2370 SLC J8108	ARPA ALM	OUT	The dangerous ship alarm status is output.	Set to normally closed with a jumper.*
NDC-1590 J4302	PWR FAIL	OUT	The disconnection of the ship's main power supply is detected. It is necessary to connect the backup DC24V power supply of the NBD-913 PSU in advance.	Normally closed
CMH-2370 SLC J8107	SYS ACK	IN	The ACK signal of system alarm is input.	"False" denotes either an open or disconnected state. "True" denotes a closed state.
CMH-2370 SLC J8107	ARPA ACK	IN	The ACK signal of dangerous ship alarm is input.	"False" denotes either an open or disconnected state. "True" denotes a closed state.
CMH-2370 SLC J8108	ACK OUT	OUT	The ACK signal of alarm is output.	Set to normally open with a jumper.* 1
NDC-1590 J4302	WMRS T	OUT	The watch timer reset signal is output.	Normally open

*1 Serial LAN interface circuit jumper settings



(*) BNWAS Bridge Navigation Watch Alarm System

6.5 Subsystem Installation

Use the "Subsystem Installation" dialog to verify and change the subsystem configuration of this equipment.

6.5.1 Displaying the "Subsystem Installation" dialog

- 1 Display the dialog of the Installation submenu.
- 2 Select [System Configuration] in the 1st Classification pane and [Subsystem Configuration] in the 2nd Classification pane.

The "Subsystem Installation" dialog is displayed in the Edit/Result pane.

The screenshot shows the 'Installation' dialog box with the 'System Configuration' tab selected. The 'Subsystem Installation' section is active, displaying various configuration options for task stations and junction boxes.

Installation (Close button X)

Installation Information | Language | **System Configuration** | Ship's Parameters | Settings

Subsystem Installation

- CCRP
- Serial Port
- Contact
- A/D
- Data Output
- Network

Own Task Station

- Task Station 2 (dropdown)
- No.2 RADAR (dropdown)
- IP Address(Main): 192.168.60.35
- IP Address(Sub): 192.168.61.35
- USB OPU: Trackball+Keyboard (dropdown)
- Serial OPU: Trackball (dropdown)

Junction Box

- Junction Box 1: No.1 RADAR (dropdown)
 - SLC 1(Main) (dropdown)
 - AOC
 - RIF + GIF (dropdown)
- Junction Box 2: No.2 RADAR (dropdown)
 - SLC 2(Main) (dropdown)
 - AOC
 - ALC 1(Main) (dropdown)
- Junction Box 3: None (dropdown)

Control Status

- Master: Master (dropdown)
- Master Unit: None (dropdown)

Device Installation

- Task Station 1: No.1 RADAR (dropdown)
- Task Station 2: No.2 RADAR (dropdown)
- Task Station 3: No.1 ECDIS (dropdown)
- Task Station 4: No.1 CON (dropdown)
- Task Station 5: None (dropdown)
- Task Station 6: None (dropdown)
- Task Station 7: None (dropdown)
- Task Station 8: None (dropdown)
- RADAR1
- RADAR2
- VDR(JRC)
- Printer
- Heading Sensor 1: Gyro (dropdown)
- Heading Sensor 2: Gyro (dropdown)
- Log 1: 1AX (dropdown)
- Log 2: 2AX (dropdown)
- GPS 1
- GPS 2
- GPS 3
- GPS 4

Set

6.5.2 Changing the subsystem configuration

Set the following items in the "Subsystem Installation" dialog.

If the presence/absence of the equipment is set in this dialog, the menu display/hide and configuration contents relating to the equipment change according to the setting contents.

Setting item	Description of setting	Setting value
Own Task Station	Select the Task Station number of the equipment from the combo box. Select from the task stations that were set in Task Stations 1 to 8 of Device Installation.	Task Station 1 ~ Task Station 8
	Select installation/non-installation of the USB OPU (Operation Unit) by using the [USB OPU] check box. When the unit is installed, select the installation contents in the [USB OPU] combo box. Memo When OPU is installed, the OPU active/inactive monitoring is performed. When there is no response, the following alert is displayed and OPU is restarted. OPU: OPU-USB(Communication error) Keyboard: OPA-OPB(Communication error)	Installation/non-installation of the unit Absent: Clear Present: Select Installation contents No keyboard operation unit (optional): Select Trackball. Keyboard operation unit (optional): Select Trackball + Keyboard.
	Select the installation/non-installation of Serial OPU (Operation Unit) by using the [Serial OPU] check box. When OPU is installed, select the installation contents in the [Serial OPU] combo box. Memo When OPU is installed, the OPU active/inactive monitoring is performed. When there is no response, the following alert is displayed and OPU is restarted. OPU: OPU-Serial(Communication error) Keyboard: OPA-OPB(Communication error)	Installation/non-installation Non-installation: Clear Installation: Select Installation contents No keyboard operation unit (optional): Select Trackball. Keyboard operation unit (optional): Select Trackball + Keyboard.
Junction Box	Select installed/not installed of junction boxes 1 to 8 from the [Junction Box 1 ~ 8] check boxes.	Not installed: Clear. Installed: Select.
	In the combo box for selecting a Task Station, select the equipment that is directly connected to Radar I/F or Gyro I/F of the junction box.	Equipment that is assigned to any of Task Stations 1 to 8 of Device Installation
	Select the equipment to be installed in the Junction Box that was selected from [Junction Box 1 ~ 8] check boxes.	None SLC 1 to 8(Main) SLC 1 to 8(Sub) ALC 1 to 8 RIF GIF RIF + GIF
	When SLC is selected from the combo box, select installed/not installed of AOC with the [AOC] check box.	Not installed: Clear. Installed: Select.

Setting item	Description of setting	Setting value
Device Installation	<p>Select installed/not installed of the device by using the check box of each subsystem.</p> <p>For the subsystem that is installed, select the parameters from the combo box.</p> <p>No restrictions are placed on the order of assigning the devices to Taskstation1-Taskstation8.</p> <p>The following shows an example of device assignment to task stations:</p> <p>(Example) Device assignment in ascending order of the values of IP-address 4th octets (Refer to 4.11 "JRC Network IP Address.")</p> <p>1: No.1 RADAR 2: No.2 RADAR 3: No.1 ECDIS 4: No.2 ECDIS 5: No.1 CON</p> <p>Note: The subsystems that are displayed as disabled will be supported in the future.</p>	<p>Not installed: Clear. Installed: Select.</p> <p>Subsystem Task Station 1~Task Station 8 RADAR 1, 2 ^{*1} VDR(JRC) Primer Heading Sensor 1, 2 Log 1, 2 GPS 1~4 Ship's Clock Echo Sounder (T/D 1~4) AIS NAVTEX Anemometer Water TEMP Meter Current Meter Climate Meter Autopilot Rudder Engine/Propeller Engine Telegraph Bow Thruster Stem Thruster Azimuth Thruster Generator Fin Stabilizer YEOMAN Digitizer Radar Simulator S-JOY 1 to 5 GPS Selector Log Selector</p>

(*1) For ECDIS, the communication radar is to be checked.

Table 4-1 Device numbers that can be selected

No.	Device numbers that can be selected
1	None
2	No.1 RADAR
3	No.2 RADAR
4	No.3 RADAR
5	No.4 RADAR
6	No.5 RADAR
7	No.6 RADAR
8	No.7 RADAR
9	No.8 RADAR
10	No.1 ECDIS
11	No.2 ECDIS

No.	Device numbers that can be selected
12	No.3 ECDIS
13	No.4 ECDIS
14	No.1 CON
15	No.2 CON
16	No.1 CON (Wing)
17	No.2 CON (Wing)
18	No.1 CON (Remote)
19	No.2 CON (Remote)
20	No.1 RPS
21	No.2 RPS

Setting example

The following diagram shows the setting example of [Own Task Station] and [Device Installation] when the subsystem is configured as follows:

No.1 RADAR (S band radar) as Task Station 1

No.2 RADAR (X band radar) as Task Station 2

No.1 ECDIS as Task Station 3

No.2 ECDIS as Task Station 4

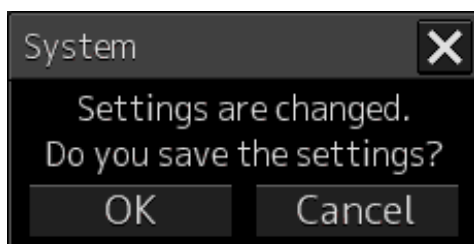
Conning as Task Station 5

The screenshot displays two configuration panels. The 'Own Task Station' panel on the left includes a dropdown for 'Task Station 1' (set to 'No.1 RADAR'), IP address fields for 'Main' and 'Sub' (both set to '0.0.0.0'), and checkboxes for 'USB OPU' (checked, set to 'Trackball+Keyboard') and 'Serial OPU' (unchecked, set to 'Trackball'). Below this is the 'Junction Box' section with four entries: 'Junction Box 1' (checked, 'SLC 1(Main)', 'RIF + GIF', 'AOC' checked), 'Junction Box 2' (checked, 'SLC 2(Main)', 'ALC 1', 'AOC' unchecked), 'Junction Box 3' (unchecked, 'None'), and 'Junction Box 4' (unchecked, 'None'). The 'Device Installation' panel on the right lists 'Task Station 1' through 'Task Station 8' (checked 1-5, unchecked 6-8) with corresponding device dropdowns: 'No.1 RADAR', 'No.2 RADAR', 'No.1 ECDIS', 'No.2 ECDIS', 'No.1 CON', and 'None'. It also lists various sensors and devices: 'RADAR1', 'RADAR2', 'VDR(JRC)', 'Printer', 'Heading Sensor 1' (Gyro), 'Heading Sensor 2' (Gyro), 'Log 1' (2AX), 'Log 2' (2AX), 'GPS 1', 'GPS 2', 'GPS 3', and 'GPS 4' (all checked).

6.5.3 Saving subsystem configuration changes

- 1 Click on the [Set] button in the "Subsystem Installation" dialog.

A dialog is displayed prompting confirmation of saving the configuration changes.



- 2 To save the changes, click on the [OK] button. To cancel the changes, click on the [Cancel] button.

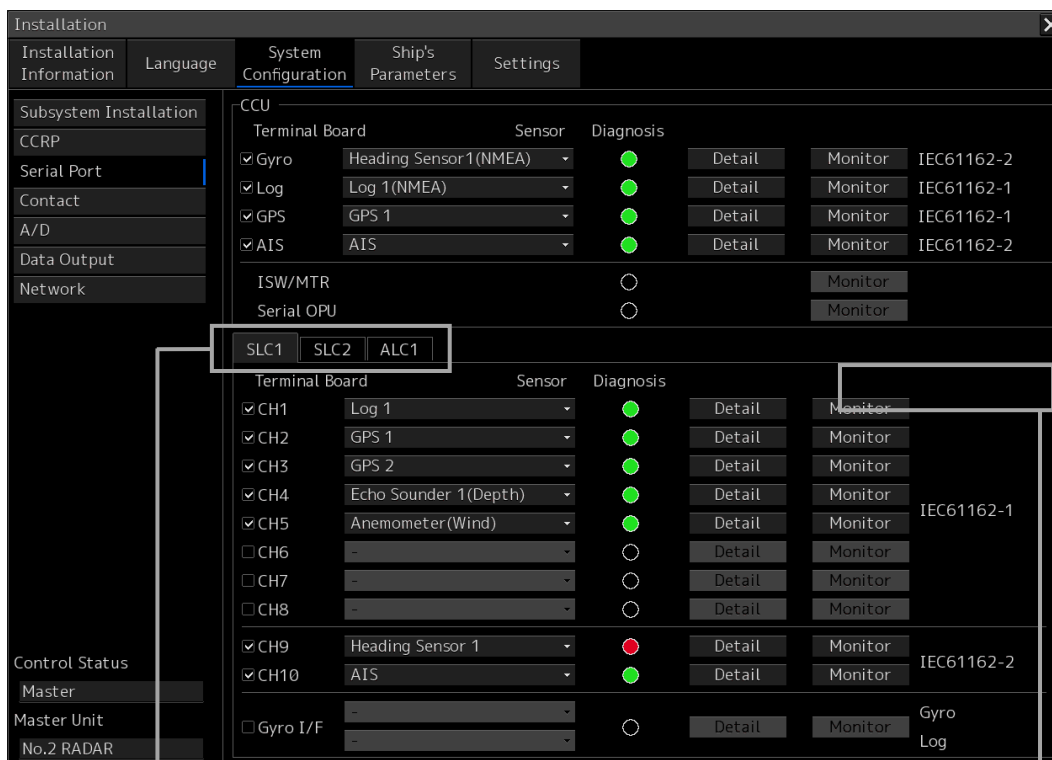
6.6 Setting Up a Serial Port

Use the "Serial Port" dialog to verify the setting of the serial port of this equipment and perform the initial setting. The status of ISW/MTR and Serial OPU can also be monitored.

6.6.1 Displaying the "Serial Port" dialog.

1. Display the dialog of the Installation submenu.
2. Select [System Configuration] in the 1st Classification pane and [Serial Port] in the 2nd Classification pane.

The "Serial Port" dialog is displayed in the Edit/Result pane.



Tab name
SLC1~8(M)/
SLC1~8(S)/
ALC1~8

Is displayed only if the SLC1 ~ 8 (S).
Refer to "For making SLC(Main) and
SLC(Sub) the same setup".

[Diagnosis] lamp light colors

The [Diagnosis] lamp displays the diagnosis result as to whether the sentence of the specified sensor is received for each serial port and also displays the status of ISW/MTR and Serial OPU.

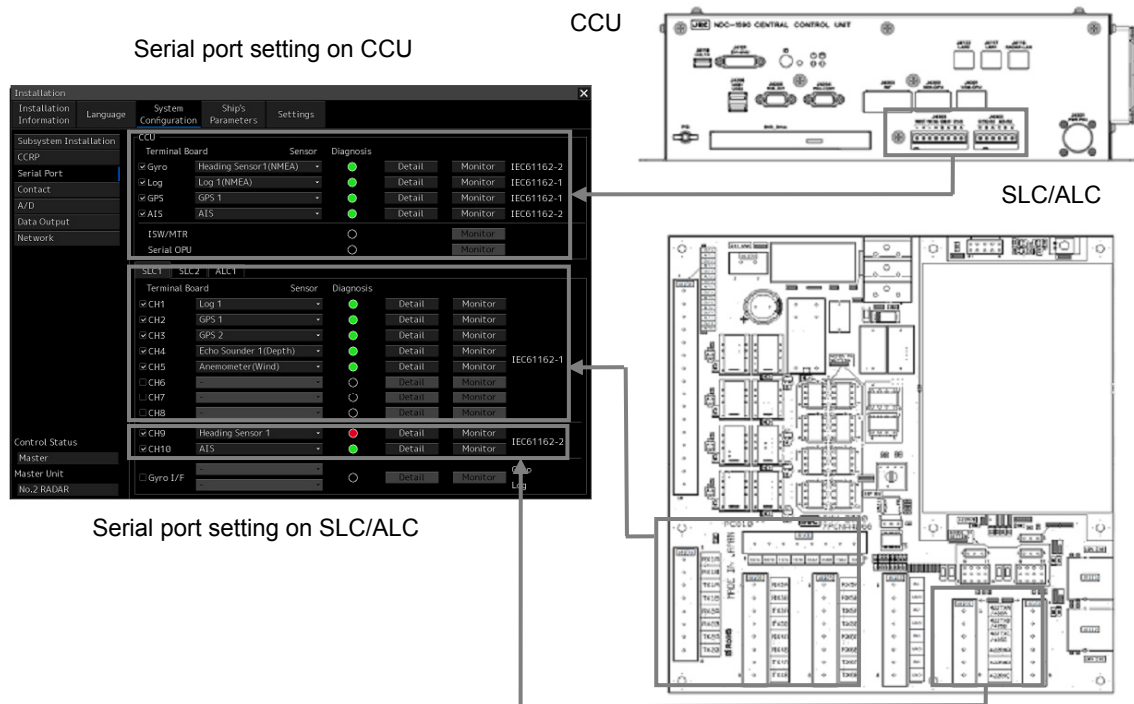
- Lit in red:** Data not received.
- Lit in green:** Data is receiving.
- Lit in orange:** In diagnosis (before decision).
- No color:** Serial port is disabled.

Note

- When the RADAR slave mode is active, the [Diagnosis] lamp of ISW/MTR is disabled.
- When the [Serial OPU] check box is set to Off after selecting [Service]-[Installation]-[System Configuration]-[Subsystem Installation], the [Diagnosis] lamp of serial OPU is disabled.

6.6.2 Setting a serial port

In the "Serial Port" dialog, allocate the sensor to be connected for the serial port on CCU and the serial port on SLC(Main/Sub)/ALC.



[Setting a serial port on CCU]

Setting Item	Description of Setting	Setting Value
Gyro	<ol style="list-style-type: none"> 1. Select the check box and enable the serial port for the Gyro. 2. Select the sensor to be connected to the Gyro serial port from the [Sensor] combo box. When no sensor is selected, select [-]. 	To enable: Select. To disable: Clear. The sensors that can be selected vary according to the subsystem installation status. Refer to "Table 4-2 Sensors that can be selected on the Task Station".
LOG	<ol style="list-style-type: none"> 1. Select the check box and enable the serial port for the LOG. 2. Select the sensor to be connected to the LOG serial port from the [Sensor] combo box. When no sensor is selected, select [-]. 	
GPS	<ol style="list-style-type: none"> 1. Select the check box and enable the serial port for the GPS. 2. Select a sensor to be connected to the serial port for the GPS from the [Sensor] combo box. When no sensor is selected, select [-]. 	
AIS	<ol style="list-style-type: none"> 1. Select the check box and enable the serial port for the AIS. 2. Select a sensor to be connected to the serial port for the AIS from the [Sensor] combo box. When no sensor is selected, select [-]. 	

Table 4-2 Sensors that can be selected on CCU

Serial port	Sensor name	Devices required as the subsystem (set to "installed" in the "Subsystem Installation" dialog)
Gyro	Heading Sensor(NMEA)	Heading Sensor 1
	Heading Sensor(Gyro I/F)	
LOG	Log(NMEA)	Log 1
	Log(Gyro I/F) *1	
	Selector	Log Selector
GPS	GPS 1	GPS 1
	GPS 2	GPS 2
	GPS 3	GPS 3
	GPS 4	GPS 4
	Selector	GPS Selector
AIS	AIS	AIS

(*1) Can be selected only when "Heading Sensor (Gyro I/F)" is selected for the Gyro port.

When "Log(Gyro I/F)" is selected, log data is acquired together with the Heading Sensor data from the Gyro port and communication is not performed through the LOG port. Therefore, the Diagnosis lamp, the Detail button, and the Monitor button are disabled.

[Setting serial ports on the SLC/ALC that is installed]

Setting Item	Description of Setting	Setting Value
CH1 to CH8 (IEC-61162-1)	<ol style="list-style-type: none"> Click on any of SLC1(M) to SLC8(M), SLC1(S) to SLC8(S) and ALC1 to ALC8 tabs. Enable the serial port of the channel by selecting the check box. Select the sensor to be connected to the channel from the [Sensor] combo box. When no sensor is selected, select [-]. 	To enable: Select. To disable: Clear. The sensors that can be selected vary according to the subsystem installation status. Refer to "Table 4-3 Sensors that can be selected on SLC/ALC".
CH9/CH10 (IEC-61162-2)	<ol style="list-style-type: none"> Click on any of SLC1(M) to SLC8(M), SLC1(S) to SLC8(S) and ALC1 to ALC8 tabs. Enable the serial port of the channel by selecting the check box. Select the sensor to be connected to the channel from the [Sensor] combo box. When no sensor is selected, select [-]. 	
Gyro I/F	Items are displayed only for SLC + "GIF" "RIF+GIF" in Gyro I/F. <ol style="list-style-type: none"> Click on any of SLC1(M) to SLC8(M) and SLC1(S) to SLC8(S) tabs. Enable the serial port of the channel by selecting the check box. Select the sensor (Gyro and Log) to be connected to the channel from the [Sensor] combo box. When no sensor is selected, select [-]. 	To enable: Select. To disable: Clear. Sensors that can be selected: Gyro: Heading Sensor 1/2 Log: Log 1/2 * The sensors that can be selected vary according to the subsystem installation status.

Table 4-3 Sensors that can be selected on the SLC/ALC

Sensor name	Devices required as the subsystem (set to "installed" in the "Subsystem Installation" dialog)
Heading Sensor 1	Heading Sensor 1
Heading Sensor 2	Heading Sensor 2
Log 1	Log 1
Log 2	Log 2
GPS 1	GPS 1
GPS 2	GPS 2
GPS 3	GPS 3
GPS 4	GPS 4
Ship's Clock	Ship's Clock
Echo Sounder(Depth)	Echo Sounder(Depth)
AIS	AIS
NAVTEX	NAVTEX
Anemometer(Wind)	Anemometer(Wind)
Water Temperature Meter	Water Temperature Meter
Current Meter	Current Meter
Climate Meter	Climate Meter
TRI *1	TRI
Autopilot	Autopilot
Rudder	Rudder
Engine/Propeller	Engine/Propeller
Engine Telegraph	Engine Telegraph
Thruster	Thruster
Azimuth Thruster	Azimuth Thruster
Generator	Generator
Fin Stabilizer	Fin Stabilizer
YEOMAN Digitizer	YEOMAN Digitizer
RADAR1(TT RX)	RADAR1
RADAR2(TT RX)	RADAR2
Other than sensors	
Alert(to CAM) *2	
Alert(from Subsystem) *2	
Alert(to BNWAS) *2	
IAS(NMEA) *2	
DSC *2	
— *3	

(*1) TRI (Turn Rate Indicator): Indicates a device that transmits ROT.

(*2) Used for alert handling. For details, refer to "4.8 CAM Configuration and Setting".

(*3) In the case of the port used for a data output, it is used.

Refer to "4.10 Setting Data Output".

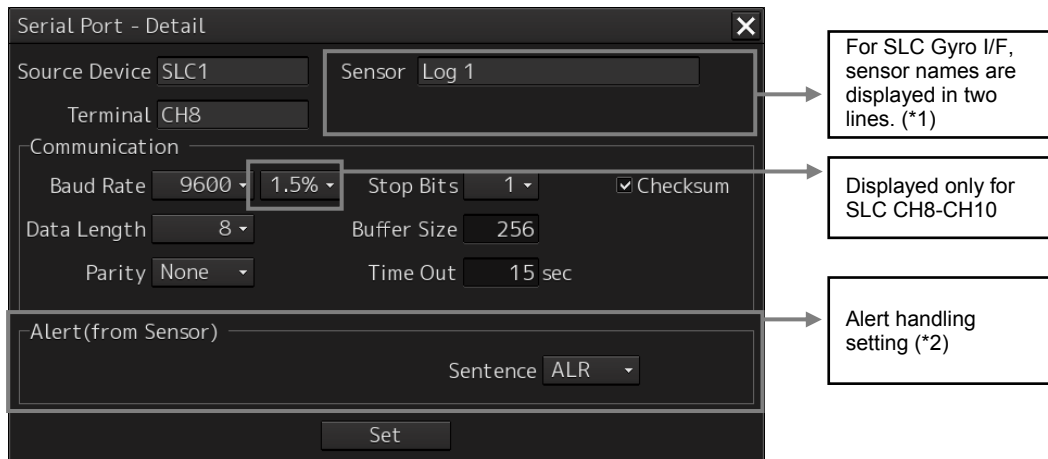
[port settings for data output]

[CHx] check box : Select to enable.

[Sensor] combo box : "—"

6.6.3 To change the communication settings of the Serial Port

1. Click the [Detail] button of the enabled serial port and display the [Detail] dialog.



(*1) Sensor name display pattern

[For sensor other than SLC Gyro I/F]

Sensor

[For SLC Gyro I/F]

Gyro Sensor

Log Sensor

(*2) Display pattern of alert handling setting

[Various sensors (*1)]

(*1) Other than "Alert(from Subsystem / to CAM / to BNWAS)", and "DSC"



[When the sensor is "Alert(from Subsystem)"]



[When the sensor is "Alert(to CAM)"]



[When the sensor is "Alert(to BNWAS)"]



[When the sensor is "DSC", or "-" (not selected)]

No display

2. Perform the settings shown in the following table and then click on the [Set] button.

Setting Item	Description of Setting	Setting Value
Baud Rate	Select the baud rate of the corresponding serial port from the combo box. In the [Detail] dialog of CH8 to CH10, the [Baud Rate] addition ratio combo box is displayed on the right side of the [Baud Rate] combo box.	Selectable baud rates vary depending on the serial port (refer to "Table 4-4 Selectable baud rates").
[Baud Rate] addition ratio combo box	The combo box is displayed in the [Detail] dialog of AIS, GYRO ^{*1} , and CH8 to CH10. The addition ratio (%) for adjusting the baud rate can be changed in the combo box. The baud rate that is used for communication is the value obtained by adding the addition ratio set here to the value that is set in the [Baud Rate] combo box. Example) $4800 \times (1 + \frac{1.5}{100}) = 4872$ Addition ratio <Adjustment method> At first, use 1.5% as the addition ratio. If data cannot be received, decrease it in decrements of 0.5%. (*1) Only when selection of a sensor is other than "Heading Sensor 1/2(Gyro I/F)".	0.0% to 3.0% (Can be set in the unit of 0.5%)
Data Length	Select the data length of the corresponding serial port from the combo box.	5/6/7/8
Parity	Select the parity of the corresponding serial port from the combo box.	None/Odd/Even
Stop Bits (Stop Bit Length)	Select the stop bit length of the corresponding serial port from the combo box.	1/2
Buffer Size	Enter the buffer size of the corresponding serial port in the box.	0 to 10240 bytes
Time Out	Enter the time-out duration of the corresponding serial port on the box.	0 to 999sec
Checksum	Select the check box and enable the checksum of the sentence of the corresponding serial port.	To enable: Select. To disable: Clear.
Subsystem	This item is displayed only when "Alert(from Subsystem)" or "Alert(to CAM)" is selected as the sensor. Select a device for alert handling. For details, refer to "4.8 CAM Configuration and Setting."	Subsystem installed (task station and sensor)/BNWAS
Primary/Secondary	Displayed only when "IAS(MODBUS)" is selected for the sensor. Set Primary/Secondary for the input from IAS.	Primary / Secondary
Sentence	Set the type of alert sentence. If "-" is selected, no alert checks are made.	-/ALR/ALF * The selection of "-" indicates that the type of alert sentence is unselected; it can be selected only for general sensors (e.g., GPS and Log).

Access Source	Displayed only when "Alert(to BNWAS)" is selected for the sensor. Select the equipment that communicates with BNWAS. When the system configuration does not contain CAM, select ECDIS. In other cases, select AMS.	AMS/ECDIS
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Table Selectable baud rates

Serial port	Baud rate
Serial port on CCU	
Gyro (when Heading Sensor (NMEA) is selected)	4800/38400
Gyro (when Heading Sensor (Gyro I/F) is selected)	Fixed to 38400
Log (when Log (NMEA) is selected)	Fixed to 4800
GPS	Fixed to 4800
AIS	Fixed to 38400
Selector	Fixed to 4800
Serial port on SLC/ALC	
CH1-8	2400/4800/9600
CH9/10	2400/4800/9600/19200/38400
Gyro I/F	Fixed to 38400

Note

- In the case of the serial port which assigned "IAS (NMEA)", carry out network transmission setting of Primary(connects to SLCx(Main)), and Secondary (connects to SLCx(Sub)) to the same setup.

For making SLC(Main) and SLC(Sub) the same setup

A setup of SLC(Sub) can be changed into the contents set up by SLC(Main).

When there is connection which is different by SLC(Main) and SLC(Sub), after performing this operation, it changes individually.

1. The tab of SLCx(S) which sets up is chosen.
2. Click the "Same as SLCx (Main)" button.

The preset value of SLCx(Sub) is changed into the same contents as SLCx(Main).

6.6.4 Checking the communication status

The communication status can be displayed in order to see if serial port communication is being performed normally.

[Line Monitor] and [Packet Monitor] are available to display the communication status.

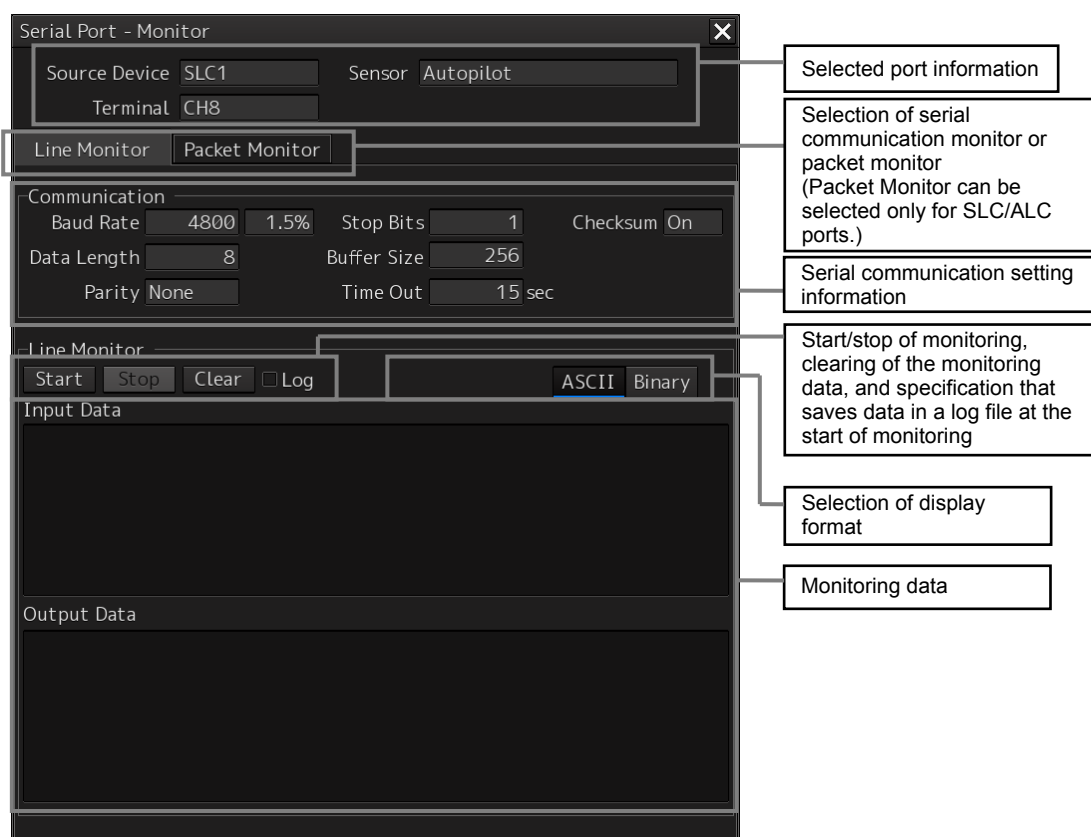
- Line Monitor: Displays the serial port communication data.
Packet Monitor: Displays the LAN communication status between the SLC/ALC and this equipment.
(Only for SLC/ALC serial ports)

Memo

- For the sentence format, refer to "Chapter 6 Sentence Format."
- When communication statuses are displayed on multiple equipment units through one port, and any of the equipment unit stopped monitoring, monitoring has stopped by all the equipment units. In this case, restart monitoring.

Line Monitor

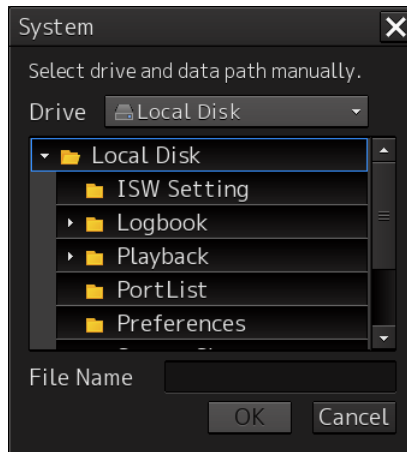
1. Click on the [Monitor] button of the enabled serial port to display the "Monitor" dialog box.



2. Click on the [Start] button to start monitoring.

Monitoring will be started. If communication is being performed, the communication data is displayed in the [Input Data] and [Output Data] areas.

To save the monitoring data in a log file, select the [Log] check box, and then click on the [Start] button. A dialog box is displayed for selecting the file to be saved.



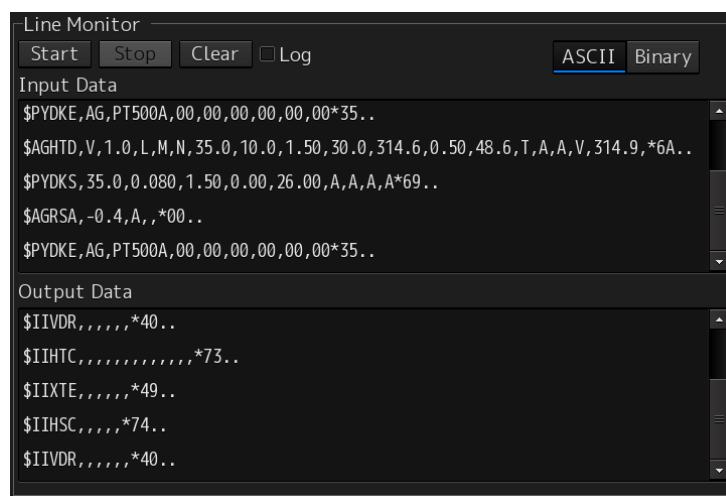
Enter the file name and click on the [OK] button. Monitoring will be started.

Memo

Data saved in a log file is limited to 5MB. When the data size has reached the limit, the save processing is stopped automatically.

To change the data display format, select [ASCII] or [Binary], and then click on the [Start] button. The data display format currently displayed can also be changed after monitoring is complete.

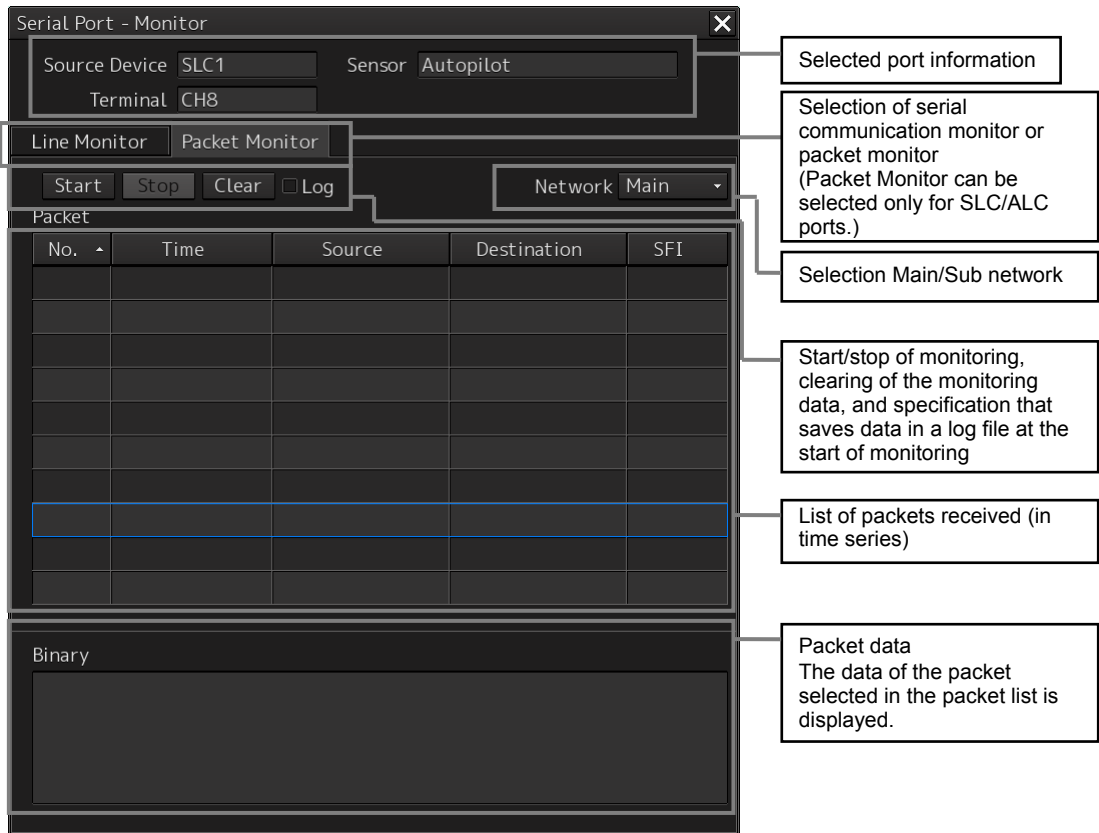
<Monitoring data display example>



3. Click on the [Stop] button to stop monitoring.

Packet Monitor

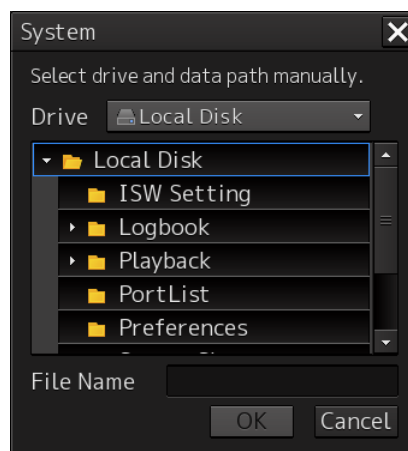
1. Click on the [Monitor] button of the enabled serial port to display the "Monitor" dialog box, and click on the [Packet Monitor] tab.



2. Click on the [Start] button to start monitoring.

Monitoring will be started. If communication is being performed, the packets received are displayed in the packet list.

To save the monitoring data in a log file, select the [Log] check box, and then click on the [Start] button. A dialog box is displayed for selecting the file to be saved.



Enter the file name and click on the [OK] button. Monitoring will be started.

Memo

Data saved in a log file is limited to 5MB. When the data size has reached the limit, the save processing is stopped automatically.

<Monitoring data display example>

Packet				
No. -	Time	Source	Destination	SFI
8	0.797	0.0.0.0	0.0.0.0	0000
9	0.906	0.0.0.0	0.0.0.0	0000
10	1.000	0.0.0.0	0.0.0.0	0000
11	1.406	0.0.0.0	0.0.0.0	0000
12	1.406	0.0.0.0	0.0.0.0	0000
13	1.797	0.0.0.0	0.0.0.0	0000
14	1.797	0.0.0.0	0.0.0.0	0000
15	1.797	0.0.0.0	0.0.0.0	0000
16	1.797	0.0.0.0	0.0.0.0	0000
17	1.906	0.0.0.0	0.0.0.0	0000

Binary	
24	49 49 58 54 45 2C 2C 2C 2C 2C 2A 34 39 0D
0A	

3. Click on the [Stop] button to stop monitoring.

6.7 Setting Contacts (Contact Input/Output)

In the "Contact" dialog, functions can be assigned to the input/output of the contacts that belong to CCU and SLC/ALC.

CCU contact output

CCU

SLC/ALC contact output

SLC/ALC

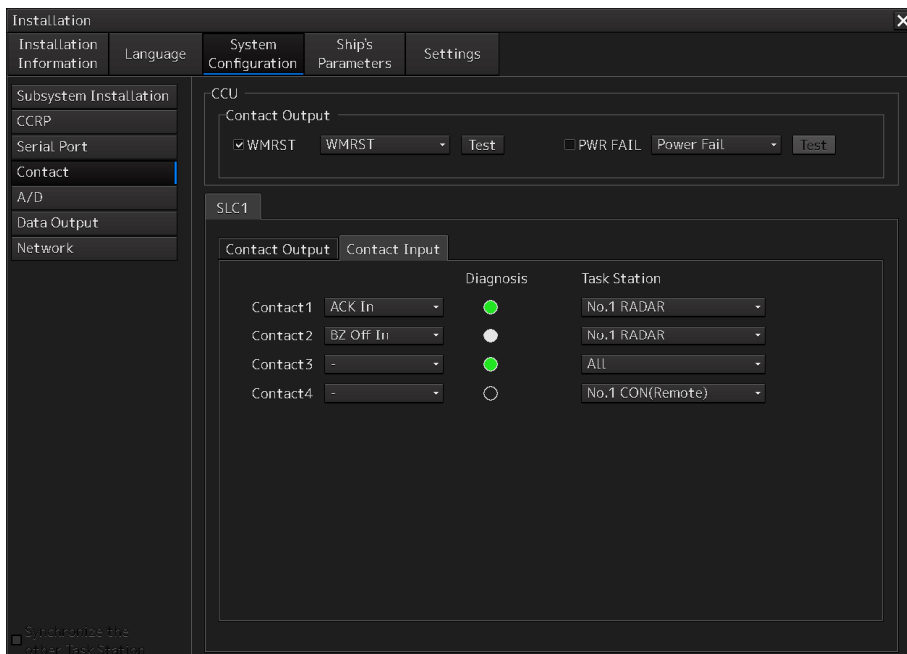
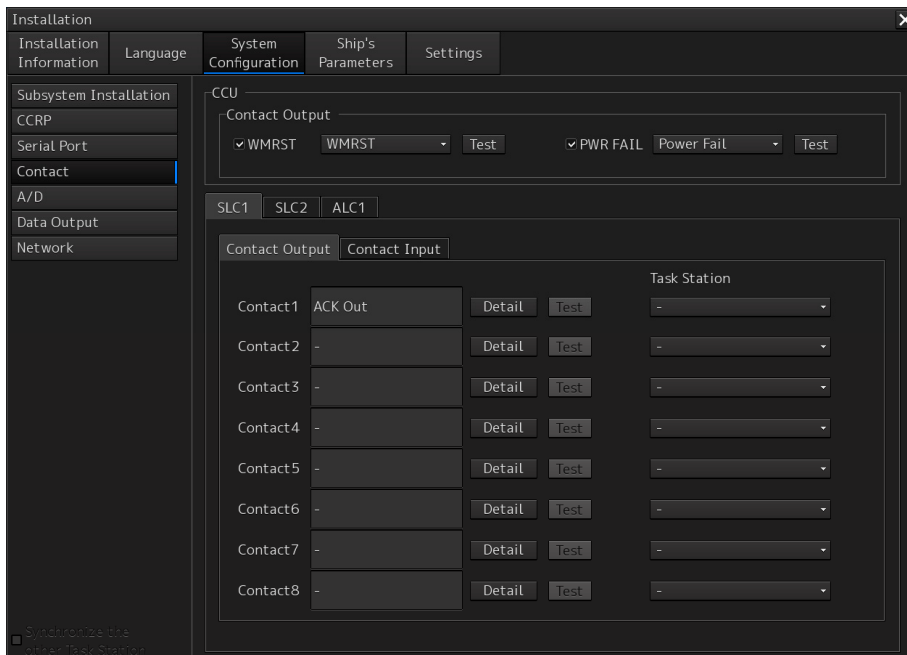
SLC/ALC contact input

SLC/ALC contact input

6.7.1 Displaying the "Contact" dialog

1. Display the dialog of the Installation submenu.
2. Select [System Configuration] in the 1st Classification pane and [Contact] in the 2nd Classification pane.

The "Contact" dialog is displayed in the Edit/Result pane.



When SLC1(Main) to SLC8(Main), SLC1(Sub) to SLC8(Sub), and ALC1 to ALC8 are selected as "installed" in the "Subsystem Installation" dialog, the functions that are currently assigned to the contact output of Contact 1 to Contact 8 are displayed on the [Contact Output] tab. The functions that are currently assigned to the contact input of Contact 1 to Contact 4 are displayed on the [Contact Input] tab.

6.7.2 Enabling the watch timer reset contact output of the Task station

1. Select the check box of [WMRST] (watch timer reset).
2. Select the function to be assigned:
 - WMRST (BNWAS timer reset)
 - Power Fail (Alarm issued if the main AC power supply fails)

6.7.3 Enabling the contact output for PWR FAIL of a task station

1. Select the [PWR FAIL] (power fail) check box.
2. Select the function to be assigned:
 - Power Fail (Alarm issued if the main AC power supply fails)
 - INS System Fail (Alarm to notify that alert notifications cannot be transmitted to BNWAS via the SLC/ALC)
(For details of INS System Fail, refer to "4.8 CAM Configuration and Setting." in the Installation Manual)

6.7.4 Selecting the function to be assigned to each contact input of the SLC/ALC

1. Select any of the SLC1(M) to SLC8(M), SLC1(S) to SLC8(S), and ALC1 to ALC8 tabs.
2. Select the [Contact Input] tab.
3. Select the function to be assigned to each contact input from the [Contact 1] to [Contact 4] combo boxes:
 - ACK In (ACK input)
 - BZ Off In (BNWAS) (Buzzer Off input from BNWAS)*1
 - BZ Off In (A/P) (Buzzer Off input from Autopilot) *1
 - No.1 Gyro SEL (Gyro 1 selection contact input)
 - No.2 Gyro SEL (Gyro 2 selection contact input)
 - PWR ACK IN (PWR ACK input)
 - Event (event input)

(*1) Refer to "4.8 CAM Configuration and Setting" in the Installation Manual.

Active/Inactive of each function is indicated by the diagnosis lamp.

Lit in green: Active

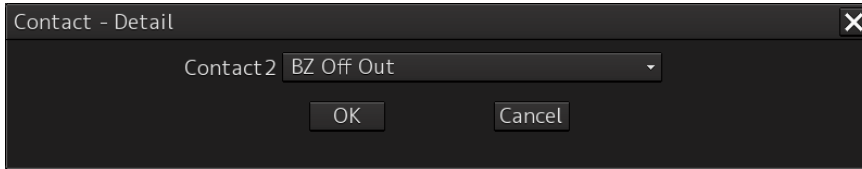
Off: Inactive

4. The task station used by the [Task Station] combo box is chosen to the point of contact which assigned the function.

In the case of the item referred to at all the task stations, "All" is chosen.

6.7.5 Selecting a function to be assigned to each contact output of SLC/ALC

1. Select any of the SLC1(M) to SLC8(M), SLC1(S) to SLC8(S), and ALC1 to ALC8 tabs.
2. Click on the [Detail] (detail setting) button of any of Contact 1 to Contact 8.
The "Contact-Detail" dialog is displayed.

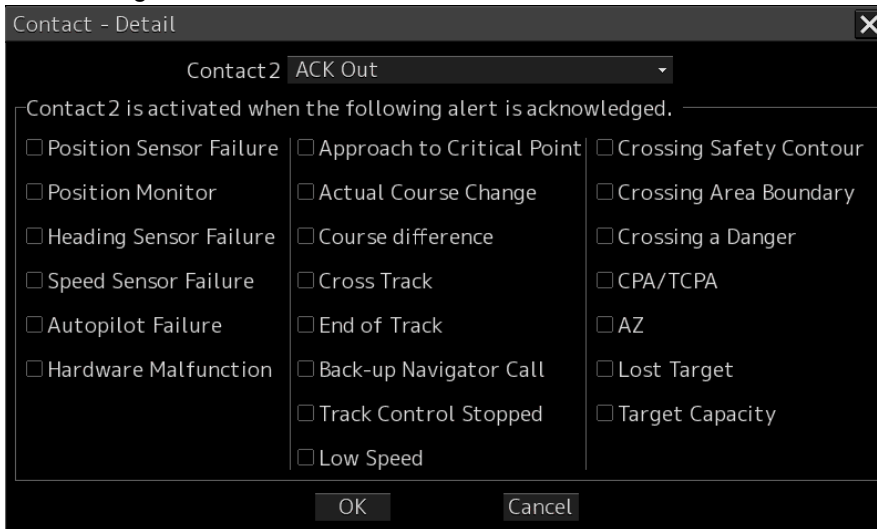


3. **Click on the function to be assigned from the combo box.**
For the functions that can be assigned, refer to "Table. Contact outputs that can be selected".

Selecting [ACK OUT]

Check boxes are displayed in the "Contact-Detail" dialog box.

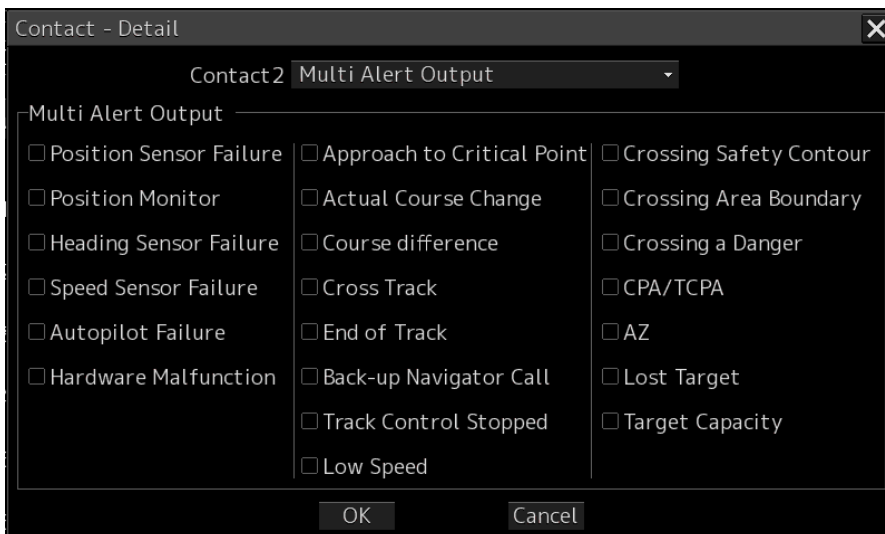
Select the alert to be enabled by clicking on the check box of it. When the selected alert is acknowledged, the contact is activated.



Selecting [Multi Alert Output]

Check boxes are displayed in the "Contact-Detail" dialog box.

Select the alerts to be enabled by clicking on the check box of them. When any of the checked alert occurs, the contact is activated.



4. **Click on the [OK] button.**

The selected function is assigned to each contact output. To change the function to be

assigned or cancel the assignment, click on the [Cancel] button.

5. The task station used by the [Task Station] combo box is chosen to the point of contact which assigned the function.

If function is "Timer Reset", "All" can choose.

If function is "BZ Off Out(A/P)", it is fixed to "AMS & TCS".

Table. Contact output that can be selected

Contact output that can be selected	Description
ACK Out	ACK output (contact output to be output when the enabled alert are approved)
BZ Off Out (BNWAS) ^{*2}	Buzzer OFF output for BNWAS
BZ Off Out (A/P) ^{*2}	Buzzer OFF output for Autopilot
BZ Off Out (Gyro) ^{*2}	Buzzer OFF output for Gyro Compass
Alarm Transfer	BNWAS ALARM output (contact output that is output from CAM to BNWAS for transfer of alarm via BNWAS)
Timer Reset	Timer reset notification
Position Sensor Failure	Position sensor failure alarm (automatic sailing)
Position Monitor	Position monitor warning (position reliability deterioration)
Heading Sensor Failure	Heading sensor failure alarm (automatic sailing)
Heading Monitor ^{*1}	Heading alarm
Speed Sensor Failure	Speed sensor failure alarm (automatic sailing)
Autopilot Failure	Autopilot and communication failure warning (automatic sailing)
Hardware Malfunction	Hardware failure alert
Software Malfunction	System malfunction alarm
Approach to Critical Point	Approach to critical point warning
Actual Course Change	Reply notification alert
Course difference	Course difference (ship's heading departing from the course) warning
Cross of Track	Cross track alarm
End of track	Final destination arrival alarm
Back-up Navigator Call	Backup navigator call alarm
Track Control Stopped	TCS stopped
Low Speed	Low speed warning
Crossing Safety Contour	Crossing safety contour alarm
Crossing Area Boundary	Crossing special area boundary warning
Crossing a Danger	Warning for approaching to danger
CPA/TCPA	CPA/TCPA alarm
AZ	Automatic acquisition/automatic activation warning
Lost Target	Target lost warning
Target Capacity	Warning on targets reaching maximum, Warning of reaching 95% of capacity
Multi Alert Output	Select when outputting multiple alerts from one contact. When this

output is selected, the Multi-Alert Output group is displayed.
--

(*1) Scheduled to be installed under INS support

(*2) Refer to "4.8 CAM Configuration and Setting" in the Installation Manual.

6.7.6 Testing each contact output

1. Select one of the tabs from SLC1(M) to SLC8(M), SLC1(S) to SLC8(S), and ALC1 to ALC8.
2. Select the [Contact Output] tab.
3. Turn on the light by clicking on the [Test] button of one of Contact1 to Contact8.
4. To stop test output, turn off the light by clicking on the [Test] button again.

6.7.7 Checking the status of each contact input

1. Select one of the tabs from SLC1(M) to SLC8(M), SLC1(S) to SLC8(S), and ALC1 to ALC8.
2. Select the [Contact Input] tab.
3. Confirm the display of the Diagnosis lamp.
Green lamp display : On (Active) status
White lamp display : Off (Normal) status