

JAN-470-9ANN
JAN-470-4ANN
JAN-470-2ANN
JAN-470-1PNN
JAN-470-0ANN
JAN-470A-9ANN
JAN-470A-4ANN
JAN-470A-2ANN
JAN-470A-0ANN

J-Marine NeCST

**INSTRUCTION
MANUAL**

● Safety Cautions ●



Cautions for High Voltage

High voltages, ranging from several hundreds to tens of thousands of volts, are used in electronic apparatus, such as radio and radar instruments. These voltages are totally harmless in most operations. However, touching a component inside the unit is very dangerous. (Any person other than authorized service engineers should not maintain, inspect, or adjust the unit.)

High voltages on the order of tens of thousands volts are most likely to cause instant deaths from electrical shocks. At times, even voltages on the order of several hundred volts could lead to electrocution. To defend against electrical shock hazards, don't put your hand into the inside of apparatus. When you put in a hand unavoidably in case of urgent, it is strongly suggested to turn off the power switch and allow the capacitors, etc. to discharge with a wire having its one end positively grounded to remove residual charges. Before you put your hand into the inside of apparatus, make sure that internal parts are no longer charged. Extra protection is ensured by wearing dry cotton gloves at this time. Another important precaution to observe is to keep one hand in your pocket at a time, instead of using both hands at the same time.

It is also important to select a secure footing to work on, as the secondary effects of electrical shock hazards can be more serious. In the event of electrical shocks, disinfect the burnt site completely and obtain medical care immediately.

Precautions for Rescue of Victim of Electric Shock

When a victim of electric shock is found, turn off the power source and ground the circuit immediately. If this is impossible, move the victim away from the unit as quick as possible without touching him or her with bare hands. He or she can safely be moved if an insulating material such as dry wood plate or cloth is used.

Breathing may stop if current flows through the respiration center of brain due to electric shock. If the electric shock is not large, breathing can be restored by artificial respiration. A victim of electric shock looks pale and his or her pulse may become very weak or stop, resulting in unconsciousness and rigidity at worst. It is necessary to perform first aid immediately.

● Emergency Measures ●

Method of First-Aid Treatment

☆ Precautions for First-Aid Treatments

Apply artificial respiration to the person who collapsed, minimizing moving as much as possible avoiding risks. Once started, artificial respiration should be continued rhythmically.

- (1) Refrain from touching the patient carelessly as a result of the accident; the first-aiders could suffer from electrical shocks by himself or herself.
- (2) Turn off the power calmly and certainly, and move the patient apart from the cable gently.
- (3) Call or send for a physician or ambulance immediately, or ask someone to call doctor.
- (4) Lay the patient on the back, loosening the necktie, clothes, belts and so on.
- (5)
 - (a) Feel the patient's pulse.
 - (b) Check the heartbeat by bringing your ear close to the patient's heart.
 - (c) Check for respiration by bringing your face or the back of your hand to the patient's face.
 - (d) Check the size of patient's pupils.
- (6) Opening the patient's mouth, remove artificial teeth, cigarettes, chewing gum, etc. if any. With the patient's mouth open, stretch the tongue and insert a towel or the like into the mouth to prevent the tongue from being withdrawn into the throat. (If the patient clenches the teeth so tight that the mouth won't open, use a screwdriver or the like to force the mouth open and then insert a towel or the like into the mouth.)
- (7) Wipe off the mouth to prevent foaming mucus and saliva from accumulating.

☆ Treatment to Give When the Patient Has a Pulse Beating but Has Ceased to Breathe

* Performing mouth-to-mouth artificial respiration

- (1) Bend the patient's face backward until it is directed to look back. (A pillow may be placed under the neck.)
- (2) Pull up the lower jaw to open up the airway. (To spread the airway)
- (3) Pinching the patient's nose, breathe deeply and blow your breath into the patient's mouth strongly, with care to close it completely. Then, move your mouth away and take a deep breath, and blow into his or her mouth. Repeat blowing at 10 to 15 times a minute (always with the patient's nostrils closed).
- (4) Continue artificial respiration until natural respiration is restored.
- (5) If the patient's mouth won't open easily, insert a pipe, such as one made of rubber or vinyl, into either nostril. Then, take a deep breath and blow into the nostril through the pipe, with the other nostril and the mouth completely closed.
- (6) The patient may stand up abruptly upon recovering consciousness. Keep the patient lying calmly, giving him or her coffee, tea or any other hot drink (but not alcoholic drink) to keep him or her warm.

Mouth-to-mouth artificial respiration with the patient's head lifted

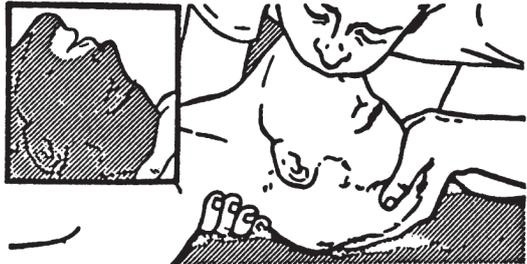
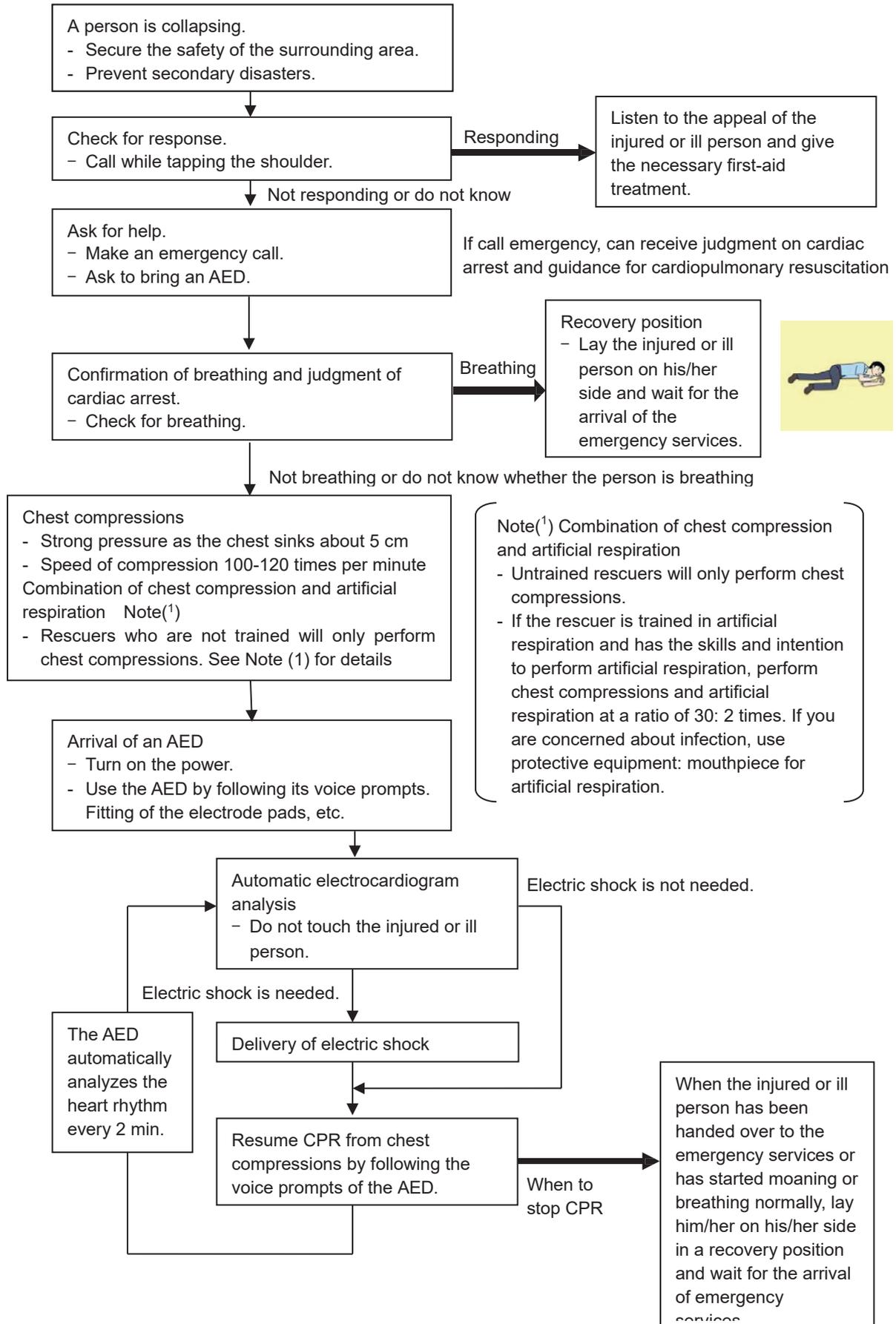
- [1]  (1) Lift the back part of the patient's head. Support the forehead with one of your hand and the neck with the other hand. → [1]. Many patients will have their airways opened by lifting their head in this way to ease mouth-to-mouth artificial respiration.
- [2]  (2) Closing the patient's mouth with your mouth, press your cheek against the patient's nose → [2]. Alternatively, hold the patient's nose with your finger to prevent air leak → [3].
- [3]  (3) Blowing air into the patient's lungs. Blow air into the patient's lungs until chest is seen to rise. The first 10 breaths must be blown as fast as possible.

Fig. 1 Mouth-to-mouth artificial respiration

Flow of Cardiopulmonary Resuscitation (CPR)



Specific Procedures for Cardiopulmonary Resuscitation (CPR)

1. Check the scene for safety to prevent secondary disasters

- a) Do not touch the injured or ill person in panic when an accident has occurred. (Doing so may cause electric shock to the first-aiders.)
- b) Do not panic and be sure to turn off the power. Then, gently move the injured or ill person to a safe place away from the electrical circuit.

2. Check for responsiveness

- a) Tap the shoulder of the injured or ill and shout in the ear saying, "Are you OK?"
- b) If the person opens his/her eyes or there is some response or gesture, determine it "s "responding." But, if there is no response or gesture, determine it "s "not responding."

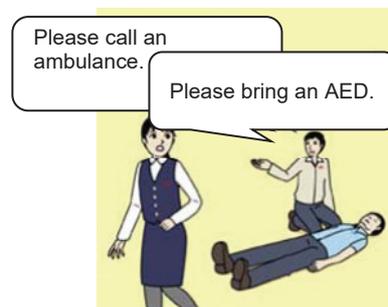


3. If responding

- a) Give first-aid treatment.

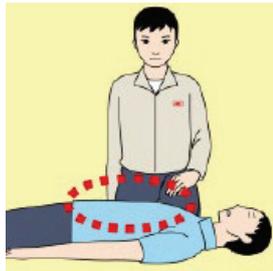
4. If not responding

- a) Ask for help loudly. Ask somebody to make an emergency call and bring an AED.
 - Somebody has collapsed. Please help.
 - Please call an ambulance.
 - Please bring an **AED**.
 - If there is nobody to help, call an ambulance yourself.



5. Check for breathing

- a) Check the his/her chest and abdomen rise and fall.



- b) If the injured or ill person is breathing, place him/her in the recovery position and wait for the arrival of the emergency services.

- Turn his/her body sideways.

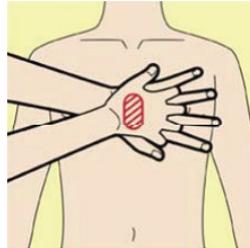
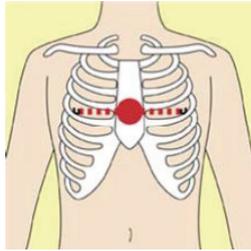


6. Cardiopulmonary resuscitation (CPR) (combination of chest compressions and rescue breaths)

a) Chest compressions

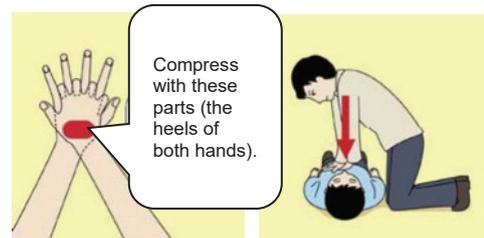
1) Position of chest compressions

- Position the heel of one hand in the center of the chest, approximately between the nipples, and place your other hand on top of the one that is in position.



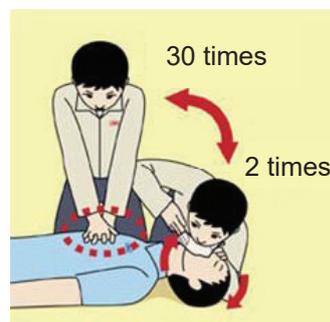
2) Perform chest compressions

- The speed of compression is about 100-120 times per minute, 30 times continuously, stretching the elbow continuously and compressing vertically.
- With each compression, depress the chest wall to a depth of approximately about 5 cm.



b) Combination of 30 chest compressions and 2 rescue breaths

- 1) Untrained rescuers will only perform chest compressions.
- 2) If the rescuer is trained in artificial respiration and has the skills and intention to perform artificial respiration, perform chest compressions and artificial respiration at a ratio of 30: 2 times.
- 3) If you are concerned about infection, use protective equipment: mouthpiece for artificial respiration.
- 4) Continuously perform the combination of 30 chest compressions and 2 rescue breaths without interruption.
- 5) If there are two or more first-aiders, alternate with each other approximately every two minutes (five cycles of compressions and ventilations at a ratio of 30:2) without interruption.



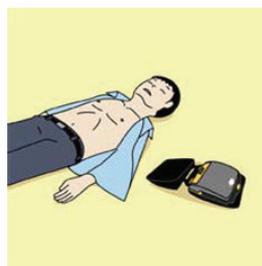
7. When to stop cardiopulmonary resuscitation (CPR)

- When the injured or ill person has been handed over to the emergency services
- When the injured or ill person has started moaning or breathing normally, lay him/her on his/her side in a recovery position and wait for the arrival of emergency services.



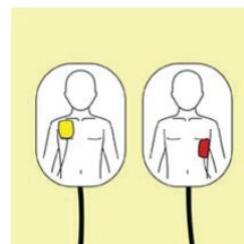
8. Arrival and preparation of an AED

- Place the AED at an easy-to-use position. If there are multiple first-aiders, continue CPR until the AED becomes ready.
- Turn on the power to the AED unit. Depending on the model of the AED, you may have to push the power on button, or the AED automatically turns on when you open the cover.
- Follow the voice prompts of the AED.



9. Attach the electrode pads to the injured or ill person's bare chest

- Remove all clothing from the chest, abdomen, and arms.
- Open the package of electrode pads, peel the pads off and securely place them on the chest of the injured or ill person, with the adhesive side facing the chest. If the pads are not securely attached to the chest, the AED may not function. Paste the pads exactly at the positions indicated on the pads. If the chest is wet with water, wipe dry with a dry towel and the like, and then paste the pads. If there is a pacemaker or implantable cardioverter defibrillator (ICD), paste the pads at least 3cm away from them. If a medical patch or plaster is present, peel it off and then paste the pads. If the injured or ill person's chest hair is thick, paste the pads on the chest hair once, peel them off to remove the chest hair, and then paste new pads.
- Some AED models require to connect a connector by following voice prompts.
- The electrode pads for small children should not be used for children over the age of 8 and for adults.



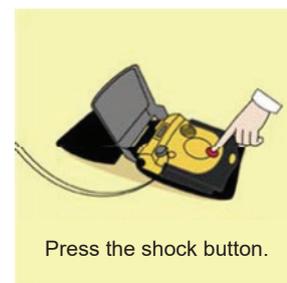
10. Electrocardiogram analysis

- The AED automatically analyzes electrocardiograms. Follow the voice prompts of the AED and ensure that nobody is touching the injured or ill person while you are operating the AED.
- On some AED models, you may need to push a button to analyze the heart rhythm.



11. Electric shock (defibrillation)

- a) If the AED determines that electric shock is needed, the voice prompt saying, "Shock is needed" is issued and charging starts automatically.
- b) When charging is completed, the voice prompt saying, "Press the shock button" is issued and the shock button flashes.
- c) The first-aider must get away from the injured or ill person, make sure that no one is touching him/her, and then press the shock button.
- d) When electric shock is delivered, the body of the injured or ill person may jerk.



12. Resume chest compressions

- a) Resume chest compressions according to AED voice message.
 - Strong pressure as the chest sinks about 5 cm
 - Speed of compression 100-120 times per minute



13. Automatic electrocardiogram analysis

- a) When 2 minutes have elapsed since you resumed cardiopulmonary resuscitation (CPR), the AED automatically analyzes the electrocardiogram.
- b) If you suspended CPR by following voice prompts and AED voice prompt informs you that shock is needed, give electric shock again by following the voice prompts.
If AED voice prompt informs you that no shock is needed, immediately resume CPR.

14. When to stop CPR (Keep the electrode pads on.)

- a) When the injured or ill person has been handed over to the emergency services
- b) When the injured or ill person has started moaning or breathing normally, lay him/her on his/her side in a recovery position and wait for the arrival of emergency services.



PREFACE

Thank you for purchasing the JAN-470 or JAN-470A series J-Marine NeCST.

The JAN-470 series are navigation support equipment for ship with the following functions.

- (1) To draw and zoom in/out an electronic navigation chart (ENC)
- (2) Similar operation on an ENC to writing by hand on a paper chart
- (3) To create a route while seeing handwritten data
- (4) Information can be shared between the ship and land, and the ship's operation status can be checked on the land side.
- (5) Daily work management during port departure/entry
- (6) Enable information sharing between ship and shore management center when emergency occurs
- (7) To display weather and sea conditions, to support safe navigation

- For the best operation, read this manual thoroughly before use.
- Keep this manual in a convenient place for future reference. Make use of this manual when experiencing operation difficulties.
- An LCD panel is used for the monitor of this equipment. Please note that although the LCD panel is manufactured with very high precision techniques, some defective pixels may occur. It should be noted that the ratio of the number of effective dots of the LDC panel is 99.9994% or higher. Use this equipment as navigation aid to the last.
- Use the created route after checking in ECDIS.
- The contents of this device might be change without notice in the future.

ABOUT COPYRIGHT

[Hatteland Technology AS]

This user manual is based on the original copyright protected document from Hatteland Technology AS – Eikeskogvegen 52 - Aksdal. "Japan Radio Co., Ltd." is fully responsible for the content of this document, and Hatteland Technology holds no responsibility for this content

[Schneider Electric SA]

© 2015 Schneider Electric. All Rights Reserved. Schneider Electric and APC are trademarks owned by Schneider Electric Industries SAS or its affiliated companies.

● Pictorial Indication ●

Meanings of Pictorial Indication

Various pictorial indications are included in this manual and are shown on this equipment so that you can operate them safely and correctly and prevent any danger to you and / or to other persons and any damage to your property during operation. Such indications and their meanings are as follows. Please understand them before you read this manual:

 DANGER	This indication is shown where incorrect equipment operation due to negligence may cause death or serious injuries.
 WARNING	This indication is shown where any person is supposed to be in danger of being killed or seriously injured if this indication is neglected and these equipment are not operated correctly.
 CAUTION	This indication is shown where any person is supposed to be injured or any property damage is supposed to occur if this indication is neglected and these equipment are not operated correctly.

Examples of Pictorial Indication



Electric Shock

The \triangle mark represents CAUTION (including DANGER and WARNING).

Detailed contents of CAUTION ("Electric Shock" in the example on the left) is shown in the mark.



Disassembling
Prohibited



The \odot mark represents prohibition.

Detailed contents of the prohibited action ("Disassembling Prohibited" in the example on the left) is shown in the mark.



Disconnect the
power plug



The \bullet mark represents instruction.

Detailed contents of the instruction ("Disconnect the power plug" in the example on the left) is shown in the mark.

● Precautions upon Equipment Operation ●

 DANGER	
	Never attempt to check or repair the inside of the equipment. Check or repair by an unqualified person may cause fire or electric shock. Contact our head office, or a nearby branch or local office to request servicing.
	Never remove the cover of this equipment. Removing it causes a risk of touching the internal high-voltage part to lead to electric shock.
	Do not attempt to disassemble or tamper with this equipment. Otherwise, fire, electric shock, or malfunction may occur.
	When performing maintenance of the equipment, make sure to turn off the main power supply. Failure to do so may result in electric shock.
	Make sure to turn off all the main power supplies before cleaning the equipment. Since voltage is output from the rectifier, failure to observe this instruction may result in equipment failure, or death or serious injury due to electric shock.
	For internal inspection and repair, contact our sales department or local branch, branch, sales office or agency.

WARNING



When performing maintenance work, make sure to turn off the power so that the power supply to the equipment is completely cut off. Some equipment components can carry electrical current even after the power switch is turned off, and thus performing maintenance work without completely cutting off the power supply may result in electric shock, equipment failure, or accidents.



When cleaning the touch panel display unit, do not use wax, thinner, etc. Failure to observe this instruction may result in damage to the LCD panel surface of the touch panel display unit.

Also, do not use chemicals, such as alcohol or antiseptic. Failure to observe this instruction may cause change in luster or color, or color fade-out.



When reading from or writing to a file in a USB flash memory, confirm computer viruses do not exist in the USB flash memory in advance. If the processor unit is infected with viruses, it influences other equipment, which may cause breakdown.



Do not remove a USB flash memory while its access lamp is flashing. Data may be damaged when the USB flash memory is inserted or removed while accessing it, and it may cause breakdown.



When reading from or writing to a file in an external storage media, confirm computer viruses do not exist in the external storage media in advance. If the processor part is infected with viruses, it influences other equipment, which may cause breakdown.



If foreign objects such as water or metal should get inside the equipment, turn off the power switch of the equipment, turn off the main power, and then contact our head office, or a nearby branch or local office to request servicing. Continued use of the equipment may cause fire, electric shock, or malfunction.



If you find abnormalities, such as smoke, unusual odor, or extremely high heat coming from the equipment, turn off the power switch and the main power supply, and then contact our head office, or a nearby branch or local office to request servicing. Continued use of the equipment may cause fire or electric shock.



When switching Day/Night, particularly switching to [Night], recognition of display information may be hindered. Confirm that you can recognize display information.



Arrange and use the components of the power supply specification taking into consideration the ship's mains power supply.

The specification voltage of JAN – 470/ JAN – 470A series components is AC 100 V or AC 230 V. A voltage-dropping transformer is needed in some cases, for example, for 440 VAC.

Improper arrangement or usage may cause fire or accidents.

CAUTION



Use J-Marine NeCST only as a navigation aid.

When using a created route, be sure to first check it by ECDIS, and then use the route.

J-Marine NeCST does not necessarily match with the safety check result of the route at ECDIS because it performs simplified route safety check.



Use J-Marine NeCST only as a navigation aid.

J-Marine NeCST divides a chart into multiple tiles and draws them. For this reason, chart objects are sometimes drawn separately.



The Conning block of J-Marine NeCST outlines the information displayed on the Conning product. For details of a variety of ship's information, check the Conning product.



Do not use or leave the equipment under direct sunlight for a long time or at temperatures of 55°C or higher. Otherwise, fire or malfunction may occur.



Do not place glasses or cups containing water, etc., or small metal objects on this equipment. If water or such objects get inside, fire, electric shock, or malfunction may occur.



Do not touch the equipment with hands or gloves wet with fresh water or seawater. Otherwise, electric shock or other troubles may occur.



- Do not place objects that scratch on the display.
- Placing hot objects on the display may cause deformation of the display.
- Do not apply any undue shock on the display. Otherwise, malfunction may occur.



Be sure to turn off the main power supply before inspection or replacement of parts. Otherwise, electric shock, fire, or malfunction may occur.

Glossary

AIS	: Automatic Identification System.
AIO	: Admiralty Information Overlay published by United Kingdom Hydrographic Office (UKHO)
AtoN	: Aids to Navigation
Base CD	: Chart CD containing complete chart data
BFT	: Beaufort scale of wind force
BRG	: Bearing
Capt's DOSCA	: Communication system between ship and shore provided by Weathernews Inc. aimed at safety, economy and environmental operation (Captain's Dynamic Operation System for Counter planning and Analysis).
Cell Permit	: A file containing an encryption key for S-63 chart. This file is supplied by UKHO, PRIMAR STAVANGER, and Hydrographic and Oceanographic Department of Japan Coast Guard.
ENC Decoder	: Software used to manage charts. This software imports/updates charts.
COG	: Course Over the Ground
CTW	: Course Through Water. The direction of the ship's movement through the water.
Data Server	: S-63 chart supply source
DNV GL	: Det Norske Veritas - Germanischer Lloyd
ECDIS	: Electronic Chart Display and Information System
ENC	: Electronic Navigational Chart S-57/S-63
ETA	: Estimated Time of Arrival
ETD	: Estimated Time of Departure
GC	: Great Circle
GPS	: Global Positioning System
HDG	: Heading. Ship's heading
HSC	: High Speed Craft. Vessels conforming to the definition of High Speed Craft in SOLAS
H UP	: Head up. In H UP mode, own ship's heading line is always pointed to the top center of the radar display.
IHO	: International Hydrographic Organization
IMO	: International Maritime Organization
J-Marine Box App	: JRC app to collect data in ship
JWA	: Japan Weather Association
LMT	: Local Mean Time
MFD	: Multi-Function Display. Each navigation support function such as RADAR, ECDIS, Conning, or AMS can be executed by switching.
MMSI	: Maritime Mobile Service Identity
NAVTEX	: Navigational Telex
NeCST	: Navigational electronic Conning Station Table
NeCST Manager	: Land side equipment for sharing information with NeCST
NM	: Nautical Mile 1 nm = 1852 m

NMEA	: Protocol used for communication of navigation equipment
Playback	: Voyage status play back function
POLARIS	: Meteorological and oceanographic services for shipping, shipbuilding, and marine development
PRIMAR STAVANGER	: A Norwegian company supplying charts. Publisher of S-63 encrypted charts
REV	: Revolution
RL	: Rhumb Line
RM	: Relative Motion. A representation where the own ship position remains fixed and all targets move relative to own ship.
RMS	: JRC's original system for diagnosing the operational status of JRC ship equipment from land.
ROT	: Rate Of Turn. Amount of turning per unit time
Route	: A set of waypoints
S-57	: IHO transfer standard for digital hydrographic data
S-63	: IHO data protection scheme
SA Certificate file	: An electronic file certifying the supplier of S-63 charts. This file is needed to import/update S-63 charts.
SENC	: System Electronic Navigational Chart
SOG	: Speed Over the Ground
SAR	: Search And Rescue
SART	: Search And Rescue Transponder
SPD	: Speed
STW	: Speed Through Water
StormGeo	: Norway-based global provider of weather intelligence
Smart Ship Viewer	: JRC's corporate service for managing ship information from the shore
SSV Mobile	: An application for linking ships and lands for smartphones. Downloadable from the App Store.
TM	: True Motion. A representation where own ship and targets move according to their motion
TTG	: Time To Go. Time needed to go to the next waypoint
Vector	: Displays the vector length of other ships.
UKHO	: United Kingdom Hydrographic Office
Update CD	: Chart CD containing only the chart data updated from Base CD. This CD can be used when Base CD data has been imported.
USER CODE	: A user-specific code assigned by JRC. This code is required when using ARCS and S-63 charts.
UTC	: Universal Time, Coordinated
VDR	: Voyage Data Recorder
WP	: Waypoint
XTD	: Cross track distance
Import (ENC Decoder)	: A procedure of enabling the chart supplied on Base CD to be displayed on NeCST
Voyage data	: Data used to manage routes and handwritten data for each voyage
Hydrographic and Oceanographic Department:	Hydrographic and Oceanographic Department of Japan Coast Guard. Publisher of ENC

Update (ENC Decoder)	: A procedure of applying the update data supplied on Update CD to the imported chart
Scale	: Display scale
Spot depth	: Numeric representation of depth
Leg	: Line between two consecutive waypoints
Divider	: Compass. This can be used to measure the distance and bearing between any two points.
Ruler	: Scale. This can be used to measure any distance and angle.
Paper weight	: This can manage the chart moving mode and handwriting mode.
Chart moving mode	: Mode used to move the drawing position of the chart
Handwriting mode	: Mode to fix and write in the chart
Navplan	: Function to transition to the voyage data screen
Chart	: Function to move to the own ship position
Draw	: Function for handwriting. This enables the user to write freely, for example, NGA on the chart.
Tool	: An aid tool for route planning
Measure	: Measures distances between points. This enables measurement and comparison of distances for any ship speed.
Circle	: Creates range markers. This enables setting of any distance (radius) and its measurement and comparison.
Loupe	: Loupe function. This enables display of the latitude/longitude and chart information of any place.
Sticker	: Places a sticker as information to record.
Template	: Template that can be placed on the chart
Memo	: Enables the user to tell the next user a message for him/her or an instruction from the captain when relieved of watch.
Photo	: Function to display photos. This enables check of uploaded photos.
Sea View	: Displays icons on the chart in conjunction with the information of the photo position and bearing.

CONTENTS

● Safety Cautions ●	i
● Emergency Measures ●	ii
Flow of Cardiopulmonary Resuscitation (CPR)	iv
PREFACE	ix
ABOUT COPYRIGHT	x
● Pictorial Indication ●	xi
● Precautions upon Equipment Operation ●	xii
Glossary	xv
CONTENTS	xviii
Section 1 Overview	1-1
Section 2 Components	2-1
2.1 JAN-470	2-1
2.1.1 Default Supply List [JAN-470]	2-1
2.1.2 Optional Supply List [JAN-470]	2-2
2.2 JAN-470A	2-3
2.2.1 Default Supply List [JAN-470A]	2-3
2.2.2 Optional Supply List [JAN-470A]	2-4
2.3 Outline Diagram of Components	2-5
2.3.1 Touch Panel Display Unit Outline Diagram	2-5
2.3.2 Display Processing Unit Outline Diagram	2-7
2.3.3 Data Processing Unit Outline Diagram	2-11
2.3.4 Terminal Box Outline Diagram	2-13
2.4 Outline Diagram of Options	2-16
2.4.1 UPS Outline Diagram	2-16
2.4.2 JB CONTROL BOX Outline Diagram	2-20
2.4.3 Sensor LAN Switch Unit Outline Diagram	2-22
2.4.4 Power Supply Unit Outline Diagram	2-24
2.4.5 SLC Outline Diagram	2-25
2.4.6 26-Inch Desktop Frame Outline Diagram	2-26
2.4.7 GateWayBox Outline Diagram	2-27
2.5 Model List	2-28
2.5.1 JAN-470	2-28
2.5.2 JAN-470A	2-28
2.6 Connection Diagram	2-29
2.6.1 Connection Diagrams [JRC] [JAN-470]	2-29
2.6.2 Connection Diagrams [JRC] [JAN-470A]	2-34
2.6.3 Network Connection Diagrams [JRC]	2-39
2.6.4 Connection Diagrams [FURUNO] [JAN-470]	2-42
2.6.5 Connection Diagrams [FURUNO] [JAN-470A]	2-47
2.6.6 Network Connection Diagram [FURUNO]	2-49
Section 3 Basic Operations	3-1
3.1 Name and Function of Each Unit	3-1
3.1.1 Touch Panel Display Unit	3-1
3.1.1.1 46 Inch Touch Panel Display Unit (NWZ-1470/1470N)	3-1
3.1.1.2 26 Inch Touch Panel Display Unit (NWZ-260)	3-2
3.1.2 Display Processing Unit	3-3
3.1.2.1 Display Processing Unit (NWM-1470)	3-3
3.1.2.2 Display Processing Unit (HNS-00010)	3-3
3.1.2.3 Display Processing Unit (NDC-3470)	3-4
3.1.3 Data Processing Unit	3-5
3.1.3.1 Data Processing Unit (NJW-1460)	3-5

3.1.3.2	Data Processing Unit (NDC-3460).....	3-6
3.2	Powering ON and Starting.....	3-7
3.3	Setting Voyage Data	3-9
3.3.1	Creating New Voyage Data	3-9
3.3.2	Creating Voyage Data Using Smart Ship Viewer	3-14
3.3.3	Selecting Existing Voyage Data.....	3-17
3.3.4	Deleting Voyage Data.....	3-18
3.3.5	Creating Voyage Data Using the Voyage Data Distribution Function	3-19
3.4	Main Functions of Top Screen	3-21
3.4.1	Scale Display	3-23
3.4.2	Own Ship Information	3-24
3.4.3	Setting Ship's O'clock	3-24
3.4.4	Chart Display Setting.....	3-25
3.4.5	Screen Shot	3-26
3.4.5.1	Capturing Screen Shot.....	3-26
3.4.5.2	Checking Screen Shot	3-26
3.4.5.3	Deleting Screen Shot	3-28
3.4.6	Own Ship's Symbol.....	3-29
3.4.7	Distribution Data Display Function	3-30
3.4.8	Update Notification	3-34
3.5	Route Planning.....	3-35
3.5.1	Details of Route Data.....	3-36
3.5.2	Creating New Route	3-37
3.5.3	Editing Route	3-38
3.5.3.1	Moving WPT of Route	3-39
3.5.3.2	Adding WPT to Route	3-39
3.5.3.3	Adding WPT Between Legs of Route	3-39
3.5.3.4	Deleting WPT of Route	3-40
3.5.3.5	Editing Route Data	3-40
3.5.3.6	Setting ETD	3-41
3.5.4	Deleting Route	3-42
3.5.5	Function of Simplified Route Safety Check	3-43
3.5.6	Importing Route	3-43
3.5.6.1	Export the Route from JAN-7201/9201	3-43
3.5.6.2	Export the Route from JAN-701B/901B	3-44
3.5.6.3	Import Exported Route	3-45
3.5.6.4	Import Route Using the Voyage Data Distribution Function	3-47
3.5.7	Exporting Route	3-49
3.5.7.1	Using Exported Route on ECDIS	3-50
3.5.8	Active Route	3-54
3.5.9	Display the Optimal Route.....	3-55
3.5.9.1	Request the Optimal Route.....	3-55
3.5.9.2	Displaying Waypoint.....	3-58
3.5.9.3	Copy the Optimal Distribution Route.....	3-59
3.6	Handwritten Data.....	3-60
3.6.1	Creating New Handwritten Data	3-60
3.6.2	Editing Handwritten Data	3-61
3.6.2.1	Changing the Type of Handwritten Data.....	3-62
3.6.2.2	Setting Handwritten Data as the Object of Warning	3-64
3.6.2.3	Changing the Color of Handwritten Data	3-65
3.6.2.4	Changing the Transparency of Handwritten Data.....	3-65
3.6.2.5	Changing the Line Width of Handwritten Data.....	3-66
3.6.2.6	Paper Weight Function.....	3-67
3.6.2.7	Editing Already Handwritten Data	3-68
3.6.3	Deleting Handwritten Data.....	3-71
3.6.3.1	Deleting Stroked Handwritten Data.....	3-71
3.6.3.2	Deleting Encircled Handwritten Data	3-72
3.6.3.3	Deleting Handwritten Data of the Selected Sheet	3-72
3.6.4	Setting Show/Hide of Handwritten Data	3-73
3.6.5	Copying Handwritten Data.....	3-74
3.6.6	Importing Handwritten Data.....	3-75
3.6.6.1	Export the User Chart from JAN-7201/9201	3-75
3.6.6.2	Export the User Chart from JAN-701B/901B	3-76
3.6.6.3	Import Exported User Chart	3-77
3.6.6.4	Import User Chart Distributed to NeCST	3-80

3.6.7	Exporting Handwritten Data.....	3-81
3.6.7.1	Using Exported Handwritten Data on ECDIS.....	3-81
3.7	Tool Function.....	3-85
3.7.1	Divider Function.....	3-85
3.7.2	Measure Function.....	3-86
3.7.2.1	Adding Route.....	3-86
3.7.2.2	Copying Route.....	3-87
3.7.2.3	Deleting Route.....	3-88
3.7.3	Circle Function.....	3-89
3.7.3.1	Adding Circle.....	3-89
3.7.3.2	Deleting Circle.....	3-90
3.7.4	Loupe Function.....	3-91
3.7.5	Ruler Function.....	3-92
3.7.6	Undo/Redo Function.....	3-93
3.8	Template Function.....	3-95
3.8.1	Placing Template.....	3-95
3.8.2	Checking Template.....	3-96
3.8.3	Monitoring Template.....	3-98
3.8.4	Confirming the History of Template.....	3-100
3.8.5	Exporting Template.....	3-101
3.8.5.1	Using Exported Template on ECDIS.....	3-102
3.9	Sticker Function.....	3-106
3.9.1	Placing Sticker.....	3-106
3.9.2	Editing Sticker.....	3-108
3.9.2.1	Changing Sticker Color.....	3-108
3.9.2.2	Changing Sticker's Transparency.....	3-109
3.9.2.3	Changing Sticker Size and Direction.....	3-110
3.9.3	Exporting Sticker.....	3-110
3.9.3.1	Using Exported Sticker on ECDIS.....	3-111
3.10	Memo Function.....	3-115
3.10.1	Creating New Memo.....	3-115
3.10.2	Editing Memo.....	3-117
3.10.2.1	Changing the Type of Memo.....	3-118
3.10.2.2	Changing the Color of Memo.....	3-119
3.10.2.3	Changing the Transparency of Memo.....	3-120
3.10.2.4	Changing the Line Width of Memo.....	3-121
3.10.2.5	Focus display of Memo.....	3-121
3.10.2.6	Changing the Size and Direction of Memo.....	3-122
3.10.3	Deleting Memo.....	3-123
3.10.3.1	Deleting Stroked Part of Memo.....	3-123
3.10.3.2	Deleting the Encircled Part of Memo.....	3-123
3.10.3.3	Deleting the Memo of the Selected Sheet.....	3-124
3.10.4	Setting Show/Hide of Memo.....	3-125
3.11	Display Layer Switching Function.....	3-126
3.11.1	Setting the Displaying Order of Display Layer.....	3-126
3.11.2	Setting Show/Hide of Display Layer.....	3-128
3.11.3	Changing the Transparency of Display Layer.....	3-129
3.11.4	Initializing the Arrangement Order of Display Layers.....	3-130
3.12	Display Mode Switching Function.....	3-131
3.12.1	Display Size Switching Function.....	3-131
3.12.2	Day/Night Switching Display.....	3-132
3.12.3	Display Position Rotation Function.....	3-133
3.13	Chart Import/Update Function.....	3-134
3.13.1	Importing Chart.....	3-134
3.13.1.1	Starting the Chart Import Software.....	3-134
3.13.1.2	Specifying Cell Permit.....	3-135
3.13.1.3	Specifying the SA Certificate File.....	3-138
3.13.1.4	Specifying the ENC Chart.....	3-139
3.13.1.5	Starting Decoding.....	3-140
3.13.2	Confirming Imported Chart.....	3-142
3.13.3	Deleting Imported Chart.....	3-143
3.13.4	Updating Chart.....	3-144
3.13.4.1	Starting the Chart Import Software.....	3-144
3.13.4.2	Specifying Cell Permit.....	3-145
3.13.4.3	Specifying the SA Certificate File.....	3-148

3.13.4.4	Specifying the ENC Chart	3-149
3.13.4.5	Starting Decoding.....	3-150
3.14	Chart Display Functions	3-152
3.14.1	Display Object Selection Function.....	3-152
3.14.2	Chart Display Setting	3-154
3.14.2.1	Setting Navigation	3-155
3.14.2.2	Setting Chart Text	3-156
3.14.2.3	Setting Own Ship Track	3-157
3.14.2.4	Setting AIS Display	3-158
3.14.3	Tracking Function	3-159
3.14.3.1	Home Function	3-159
3.14.3.2	Motion Mode Switching Function	3-159
3.15	Conning	3-160
3.15.1	Displaying the Conning.....	3-160
3.15.2	Closing the Conning	3-163
3.15.3	Conning Display Setting	3-164
3.15.4	Move the Display Position of Conning.....	3-165
3.16	AIS Display	3-166
3.16.1	Displaying AIS Target Symbols.....	3-166
3.16.2	AIS Symbol Display	3-166
3.16.3	AIS Symbol Colors.....	3-167
3.16.4	About AIS Information.....	3-168
3.17	Photo Display Function	3-169
3.17.1	Uploading a Photo	3-169
3.17.2	Displaying a Photo.....	3-170
3.17.3	Writing to a Photo	3-171
3.17.4	Editing Writing to Photo	3-172
3.17.4.1	Changing the Type of Writing to Photo	3-172
3.17.4.2	Changing the Color of Writing to Photo	3-173
3.17.4.3	Changing the Transparency of Writing to Photo	3-174
3.17.4.4	Changing the Line Width of Writing to Photo	3-175
3.17.4.5	Zooming In on Photo.....	3-175
3.17.4.6	Switching the Photo Display Direction	3-176
3.17.5	Deleting Writing to Photo	3-177
3.17.5.1	Deleting Using Eraser Function	3-177
3.17.5.2	Deleting Encircled Area at One Time.....	3-177
3.17.6	Deleting Photo	3-178
3.18	Sea View Function	3-179
3.18.1	Uploading Photo to Sea View	3-179
3.18.2	Renaming the Group Name.....	3-180
3.18.3	Deleting the Sea View group	3-181
3.18.4	Displaying Sea View	3-182
3.19	Screen Lock Function.....	3-183
3.20	NeCST Emergency Function.....	3-184
3.20.1	Starting NeCST Emergency	3-184
3.20.2	Using Check List.....	3-187
3.20.3	Sharing Handwriting Data.....	3-188
3.20.3.1	Write Handwriting.....	3-188
3.20.3.2	Changing the Color of Handwriting and Pin.....	3-189
3.20.3.3	Changing the Width of Handwriting Line.....	3-190
3.20.3.4	Deleting Handwriting	3-190
3.20.3.5	Placing Pin	3-191
3.20.3.6	Deleting Pin	3-192
3.20.3.7	Focusing Screen	3-193
3.20.3.8	Changing Screen	3-194
3.20.4	Chatting.....	3-195
3.20.5	Minimizing NeCST Emergency.....	3-197
3.20.6	Terminating NeCST Emergency	3-197
3.20.7	NeCST Emergency Drill Function.....	3-198
3.20.7.1	Start NeCST Emergency Drill Function	3-198
3.21	Weather Function	3-201
3.21.1	Acquiring Weather Data.....	3-201
3.21.1.1	Acquiring Online Weather Data (StormGeo).....	3-203
3.21.1.2	Acquiring Online Weather Data (JWA)	3-206
3.21.1.3	Acquiring Offline Weather Data.....	3-207

3.21.2	Displaying Weather Information.....	3-211
3.21.3	Specifying Forecast Date.....	3-213
3.21.4	Displaying Weather Information According to ETA.....	3-213
3.22	NAVTEX Function.....	3-215
3.23	Playback Function.....	3-218
3.23.1	Create Playback Data.....	3-218
3.23.2	Play the Playback Data Recorded in NeCST.....	3-222
3.23.3	Display Conning Screen.....	3-224
3.23.4	Play the Distributed the Playback Data.....	3-226
3.23.5	Data Upload Function.....	3-228
3.23.6	Camera Linkage Function.....	3-229
3.23.7	End Playback.....	3-229
3.24	Updating Software.....	3-230
3.24.1	Performing Software Update.....	3-230
3.24.2	Performing Software Rollback.....	3-234
3.25	Terminating the Equipment.....	3-237
Section 4 Maintenance & Inspection.....		4-1
4.1	Maintenance.....	4-1
4.1.1	Maintenance of Touch Panel Display Unit (NWZ-1470/1470N).....	4-1
4.1.1.1	Cleaning the LCD Panel.....	4-1
4.1.1.2	Cleaning the Exhaust Port of the Touch Panel Display Unit (NWZ-1470/1470N).....	4-1
4.1.2	Maintenance of Display Processing Unit.....	4-2
4.1.2.1	Cleaning the Exhaust Port of the Display Processing Unit (NWM-1470).....	4-2
4.1.3	Maintenance of Data Processing Unit.....	4-2
4.1.3.1	Cleaning the Exhaust Port of the Data Processing Unit (NJW-1460).....	4-2
4.2	Inspection.....	4-3
4.2.1	How to Use the Watcher App.....	4-3
4.2.1.1	Check the NeCST Service.....	4-3
4.2.1.2	Save the NeCST Log.....	4-4
4.2.1.3	Start the Network Diagnosis.....	4-5
4.2.2	Periodic Inspection.....	4-6
4.3	Replacement Main Unit.....	4-7
4.3.1	Periodically Replacement Unit.....	4-8
4.3.2	Consumable Unit.....	4-8
4.3.2.1	Method of Stylus Pen Battery Replacement [NWZ-1470(N)/NWZ-260].....	4-9
4.3.2.2	Replacing Tip Rubber of Stylus Pen [NWZ-1470(N)/NWZ-260].....	4-9
4.3.2.3	Replacing Stylus Pen Battery [EYV-00007].....	4-10
4.3.2.4	Replacing Stylus Pen Tip [EYV-00007].....	4-10
Section 5 Failures and After-Sale Services.....		5-1
5.1	Troubleshooting.....	5-1
5.1.1	NeCST Watcher.....	5-1
5.1.2	ENC Manager.....	5-2
5.1.3	Route.....	5-3
5.1.4	Active Route.....	5-3
5.1.5	User Chart.....	5-4
5.1.6	NeCST App.....	5-5
5.1.7	Remote Desktop.....	5-7
5.2	After-Sale Services.....	5-8
5.2.1	About the Retaining Period of Service Parts.....	5-8
5.2.2	When Requesting Repair.....	5-8
5.2.3	Recommendation of Inspection and Maintenance.....	5-8
5.2.4	Equipment List.....	5-9
5.2.4.1	JAN-470.....	5-9
5.2.4.2	JAN-470A.....	5-10
Section 6 How to Dispose of Equipment.....		6-1
Section 7 Specifications.....		7-1
7.1	Touch Panel Display Unit (NWZ-1470/1470N).....	7-1
7.2	Touch Panel Display Unit (NWZ-260).....	7-2
7.3	Display Processing Unit (NWM1470).....	7-3
7.4	Display Processing Unit (HNS-00010).....	7-4
7.5	Display Processing Unit (NDC-3470).....	7-4
7.6	Data Processing Unit (NJW-1460).....	7-5

7.7	Data Processing Unit (NDC-3460)	7-6
7.8	Power Supply Unit (NBD-904)	7-6
7.9	Terminal Box (CQD-10)	7-7
7.10	Terminal Box (CQD-4704)	7-7
7.11	Terminal Box (CQD-4708)	7-7
7.12	UPS (SMT1000J)	7-8
7.13	UPS (SMT1000I)	7-9
7.14	UPS (SMT1000IC)	7-10
7.15	Transformer (NS11-500)	7-11
7.16	Transformer (A2010706)	7-11
7.17	JB Control Box (HJP-100-3-100)	7-12
7.18	JB Control Box (HJP-100-3)	7-12
7.19	Sensor LAN Switch Unit (NQA-2443)	7-12
7.20	Sensor LAN Switch Unit (NQA-2443A)	7-13
7.21	SLC (NQE-1143-S(CMH-2370))	7-14
7.22	GatewayBox (H-7HZJC0016)	7-15
AppendixA	Prohibited Characters	1
AppendixB	Hazardous Substances of Electrical and Electronic Products....	1

Section 1 Overview

J-Marine NeCST*1 is the equipment of navigation aid which manage and share navigation information included in Electronic Navigational Chart by displaying on big display. It is possible to improve efficiency and optimize navigation planning by linking various function such as handwriting and various system such as weather and sea phenomenon prediction in J-Marine NeCST.

*1: NeCST stands for Navigational electronic Conning Station Table.

【Function of J-Marine NeCST】

- Route creating function
To create a route easily and flexibly with fingers or a stylus pen
 - Electronic navigational chart display function
 - NAVTOR ENC Service
 - NeCST emergency function
Enables the user to share information between ship and office in emergency.
 - NeCST emergency drill unction
It is possible to practice the NeCST Emergency function only on board in case of an emergency. Due to the drill function, no information will be sent to land.
 - Playback function
Playback of past voyage status is possible based on camera images and sensor data stored in NeCST.
It is possible to check the Playback on the land side by uploading to the cloud.
The Playback uploaded to the cloud can be distributed to other NeCST.
 - Distribution function
It is possible to display the file delivered from the land side on the chart.
 - Voyage data distribution function
It is possible to import voyage data distributed from the land side and use it for creating voyage plans.
 - JWA optimal route function
It is possible to calculate the optimum route based on the route, weather and sea phenomenon information, and the ship model, and use it to create the route.
 - Weather and sea phenomenon information display function
Routes can be created while referring to weather and sea phenomenon information.
Capt 's DOSCA (WIN), StormGeo, and JWA can display weather and sea phenomenon information.
 - Handwritingn function on the Electronic Navigational Chart
 - Draw :Enables the user to freely write NGA on the chart.
 - Template :Enables advance placement of planned work during navigation on the route.
 - Sticker :Enables placement of a sticker as information when special route conditions or situations are known in advance.
 - Memo :Enables the user to tell the next user a message for him/her or an instruction from the captain when relieved of watch.
 - Synchronize information of handwritten and route function on ECDIS
To synchronize with JRC's ECDIS (JAN-9201/7201, JAN-901B/701B) or FURUNO's (FMD-3100/3200/3300) and display, for example, a route created on ECDIS
 - Sharing information function between ship and office
The following information in the ship can be collected and uploaded to the Smart Ship Viewer*1
 - NMEA : The sensor data in the ship
 - RMS : Data used for JRC original remote maintenance
 - AIS : AIS data around own ship
 - Route : Routes monitored by ECDIS (JAN-9201/7201)
- *1: The Smart Ship Viewer is the JRC corporate service for managing ship information from land.
Can check each uploaded data from the land.

- Each useful tool function for entering handwritten information or route planning
 - Divider :Enables measurement of the distance and bearing between two points.
 - Measure :Enables measurement of the distance and time between consecutive points.
 - Circle :Places a concentric circle at any point and enables measurement and comparison of distances.
 - Loupe :Enables display of the latitude/longitude and chart information of any point.
 - Ruler :Places a ruler on the chart screen and enables measurement of any distance and angle.
- Simplified check function of safety contours and dangerous areas on the route
It is necessary to modify before synchronization with ECDIS
- Display the own ship's position and AIS targets function on the Electronic Navigational Chart
- Display function of Navtex information
- Display in TM/RM function
- Select the display color function for day/night
- Screen rotation function
To enable operation from anywhere during briefing using the screen rotation function
- Undo and Redo function
Enables the user to cancel or recover latest action.

Section 2 Components

2.1 JAN-470

2.1.1 Default Supply List [JAN-470]

A list of the default components is shown below.

Name		Model	IEC 60945	Q'ty
Touch panel display Unit	JAN-470-9ANN (46-inch)	NWZ-1470N	Compliant	1
	JAN-470-4ANN (46-inch)	NWZ-1470	Compliant	
	JAN-470-2ANN (26-inch)	NWZ-260	Compliant	
Display Processing Unit	Desktop PC type	NWM-1470	Compliant	1
	Laptop PC type	HNS-00010*1	Non- Compliant	
		EYV-00007*2	Non- Compliant	
		EDC-GUA3-W*2	Non- Compliant	
LDR-PUE8U3LWH*2		Non- Compliant	1	
Data Processing Unit		NJW-1460	Compliant	1
Terminal Box		CQD-10	Compliant	1
Cable kit		CFQ-7590A	-	1
Instruction manual (English)		H-7ZPSC0651A	-	1
Installation manual (English)		H-7ZPSC0653A	-	1

*1: In case of laptop computer (HNS-00010), Touch panel display unit is not equipped.

*2: In case of laptop computer (HNS-00010), it is required.

The cable kits contain the following.

CFQ-7590A

Name	Model	Q'ty	Remarks
LAN cable	KB-STP-03LBN	2	3m
	VCTF3X50/0.18	2	3m
Power cable	YP3MB VCTF3x1.25SQ-3	1	
	CESTM-3	2	
Crimp terminal	R1.25-4	5	
	R1.25-6	14	
	R2-6	4	

2.1.2 Optional Supply List [JAN-470]

A list of the optional components is shown below.

Name		Model	IEC60945	Q'ty
UPS	1KVA 100V	SMT1000J*1	Non-complainant	1
	1KVA 230V	SMT1000I/SMT1000IC*1	Non-complainant	
Stopper		QL-55	-	1
Network Card		AP9630J/AP9640J (For 100 V)	Non-complainant	1
		AP9630/AP9640 (For 230 V)	Non-complainant	
Transformer*2		NS11-500 in an indoor case	Non-complainant	1
Sensor LAN Switch		NQA-2443/A	Compliant	1
Power Supply Unit*3		NBD-904	Compliant	1
JB Control Box	AC100V	HJP-100-3-100	Non-complainant	1
	AC220V	HJP-100-3	Non-complainant	
SLC*4		NQE-1143-S	-	1
26-inch desktop frame*5		CWB-1660	Non-complainant	1

*1: SMT 1000J and 1000IC are fixed using QL-55.

*2: Used for insulation of SMT1000J. It is a transformer with a case.

*3: Used for the Sensor LAN Switch Unit (NQA-2443/A) and SLC (NQE-1143-S(CMH-2370)).

*4: Arrange when not equipped with VDR (JCY-1900), VDR (VR-3000/7000) or ECDIS (JAN-9201/7201).

*5: Used for 26-inch touch panel display unit (NWZ-260).

2.2 JAN-470A

2.2.1 Default Supply List [JAN-470A]

A list of the default components is shown below.

Name		Model	IEC 60945	Q'ty
Touch panel display Unit	JAN-470A-9ANN (46-inch)	NWZ-1470N	Compliant	1
	JAN-470A-4ANN (46-inch)	NWZ-1470	Compliant	
	JAN-470A-2ANN (26-inch)	NWZ-260	Compliant	
Display Processing Unit		NDC-3470*1	Compliant	1
Data Processing Unit		NDC-3460	Compliant	1
Power Supply Unit		NBD-904	Compliant	1
Terminal Box	For AC power supply	CQD-4704	-	1
	For DC power supply	CQD-4708	-	1
Cable kit	For 4ANN/2ANN/0ANN	CFQ-7590B	-	1
	For 9ANN	CFQ-7990A	-	
Instruction manual (English)		H-7ZPSC0651A	-	1
Installation manual (English)		H-7ZPSC0653A	-	1

*1: There is no CD\DVD drive in the processing unit. Need to prepare it separately.

The CD\DVD drive whose JRC operation has been confirmed is "LDR-PUE8U3LWH".

The cable kits contain the following.

CFQ-7590B

Name	Model	Q'ty	Remarks
LAN cable	KB-STP-03LBN	2	3m
DC power cable	VCTF2X50/0.18	5	3m
AC power cable	YP3MB VCTF3x1.25SQ-3	1	
	CESTM-3	2	
Crimp terminal	R1.25-4	9	
	R1.25-6	6	
	R2-6	4	

CFQ-7990A

Name	Model	Q'ty	Remarks
LAN cable	KB-STP-03LBN	5	3m
DC power cable	VCTF2X50/0.18	6	3m
AC power cable	YP3MB VCTF3x1.25SQ-3	1	
	CESTM-3	2	
Crimp terminal	R1.25-4	9	
	R1.25-6	6	
	R2-6	4	

2.2.2 Optional Supply List [JAN-470A]

A list of the optional components is shown below.

Name		Model	IEC60945	Q'ty
UPS	1KVA 100V	SMT1000J*1	Non-complainant	1
	1KVA 230V	SMT1000IC*1	Non-complainant	
Stopper		QL-55	-	1
Network Card		AP9630J/AP9640J (For 100 V)	Non-complainant	1
		AP9630/AP9640 (For 230 V)	Non-complainant	
Transformer*2	Grommet type	NS11-500 in an indoor case	Non-complainant	1
	Cable ground type	A2010706 in an indoor case	Non-complainant	
JB Control Box	AC100V	HJP-100-3-100	Non-complainant	1
	AC220V	HJP-100-3	Non-complainant	
Sensor LAN Switch		NQA-2443A	Compliant	1
SLC*3		NQE-1143-S	-	1
26-inch desktop frame*4		CWB-1660	Non-complainant	1
GateWayBox		H-7HZJC0016	Compliant	1
Anti-Seismic gel (for GateWayBox)		QL-76CL	-	1

*1: SMT 1000J and 1000IC are fixed using QL-55.

*2: Used for insulation of SMT1000J. It is a transformer with a case.

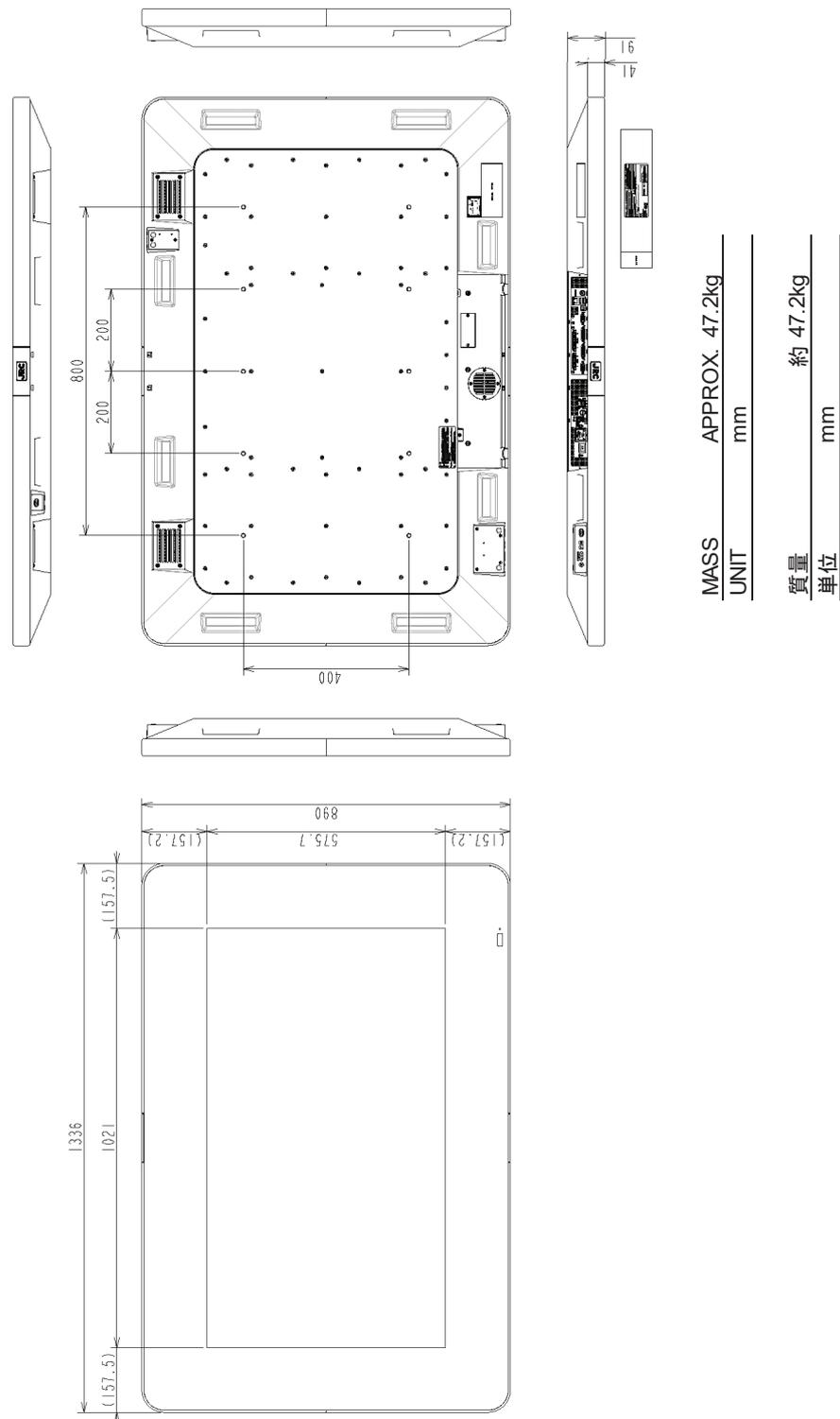
*3: Arrange when not equipped with VDR (JCY-1900), VDR (VR-3000/7000) or ECDIS (JAN-9201/7201).

*4: Used for 26-inch touch panel display unit (NWZ-260).

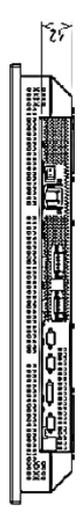
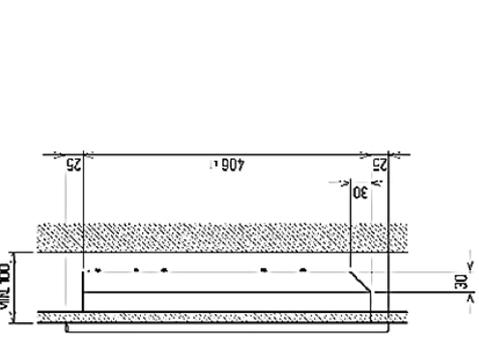
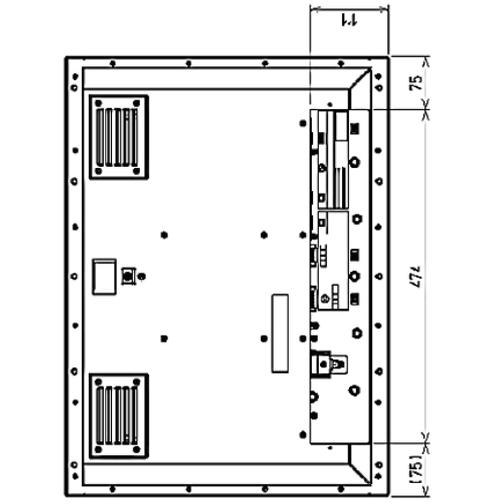
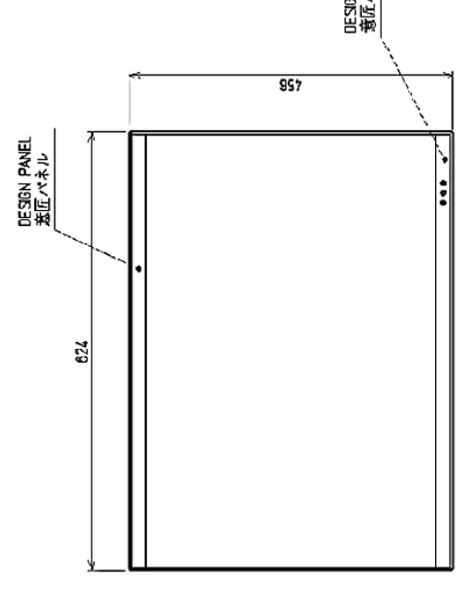
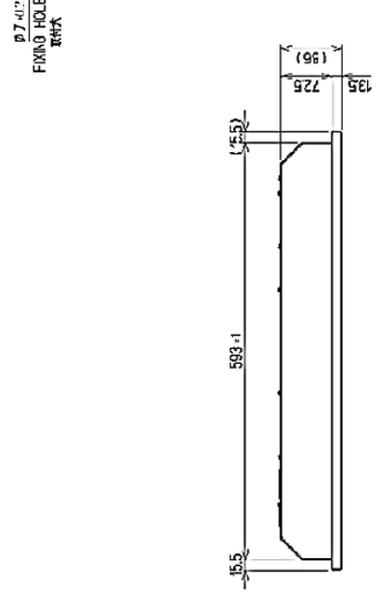
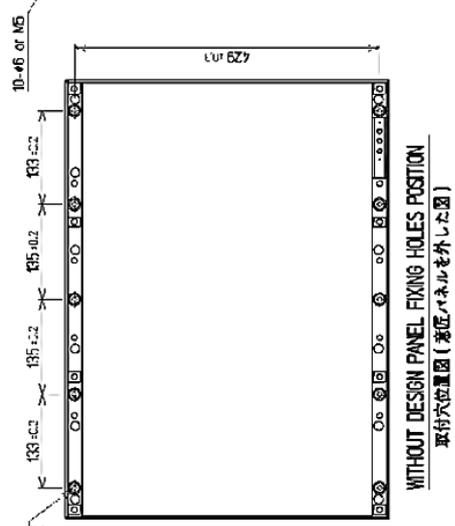
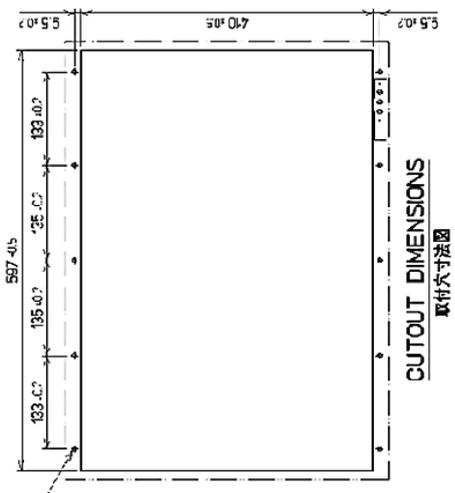
2.3 Outline Diagram of Components

2.3.1 Touch Panel Display Unit Outline Diagram

See below for the outline diagram of the touch panel display unit.



NWZ-1470/1470N 46-inch touch panel display unit outline diagram



外形寸法 外形寸法	外形寸法 許容差		取付寸法 許容差
	±	公差	
3	6	+0.5	4.5
6	30	=1	
30	120	-1.5	4.1
120	400	+2.5	
400	1000	+4	4.2
1000	2000	+6	
2000	4000	+8	4.3

OUTLINE DIMENSIONS	PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS		PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
	公差	許容差	
3	6	+0.5	4.5
6	30	=1	
30	120	-1.5	4.1
120	400	+2.5	
400	1000	+4	4.2
1000	2000	+6	
2000	4000	+8	4.3

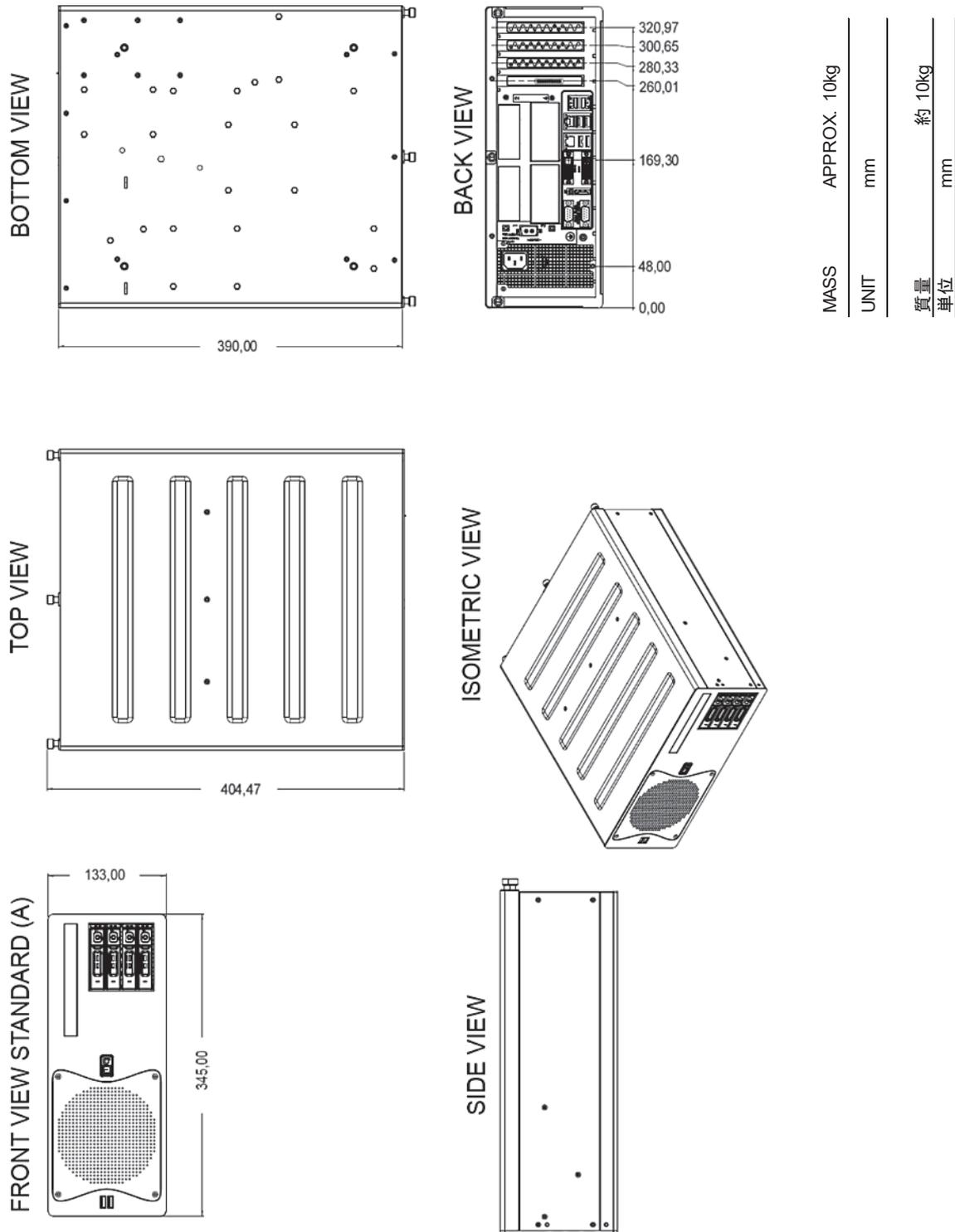
MASS APPROX. 16 kg
UNIT mm
質量 約 16 kg
単位 mm

NWZ-260

NWZ-260 26-inch touch panel display unit outline diagram

2.3.2 Display Processing Unit Outline Diagram

See below for the outline diagram of the display processing unit.



NWM-1470 display processing unit (Compliant to IEC 60945) outline diagram

FRONT VIEW STANDARD



MASS	APPROX. 1.91kg
UNIT	mm

質量	約 1.91kg
單位	mm

OUTLINE DIAGRAM

APPROX. 343.0 mm × 251.0 mm × 23.0 mm
外形寸法
約 343.0 mm × 251.0 mm × 23.0 mm

SIDE VIEW



TOP VIEW



FRONT VIEW



SIDE VIEW

HNS-00010 display processing unit outline diagram



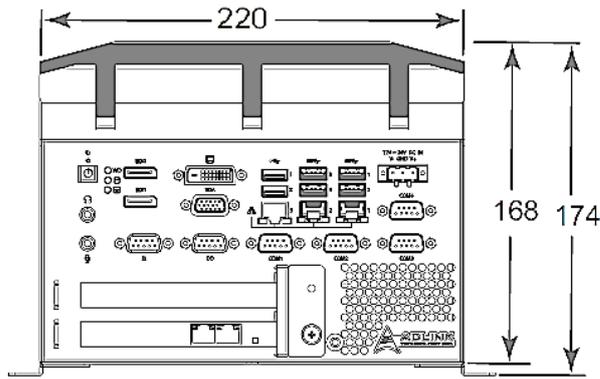
EYV-00007 surface pen outline diagram



EDC-GUA3-W LAN adapter outline diagram

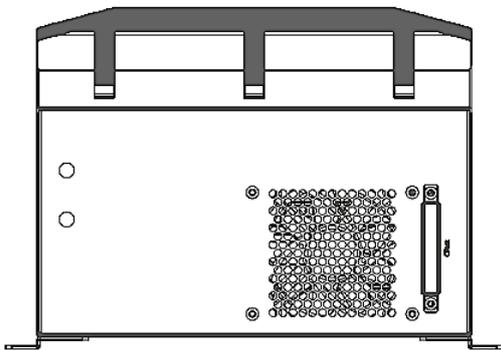


LDR-PUE8U3LWH DVD drive outline diagram

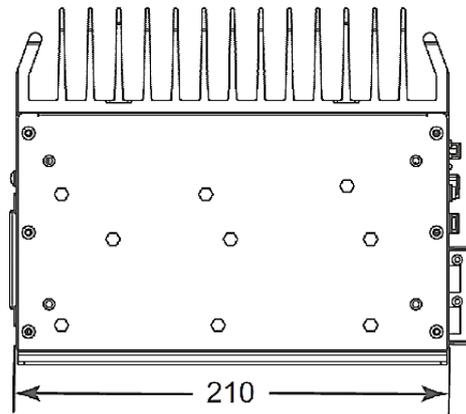


Front View

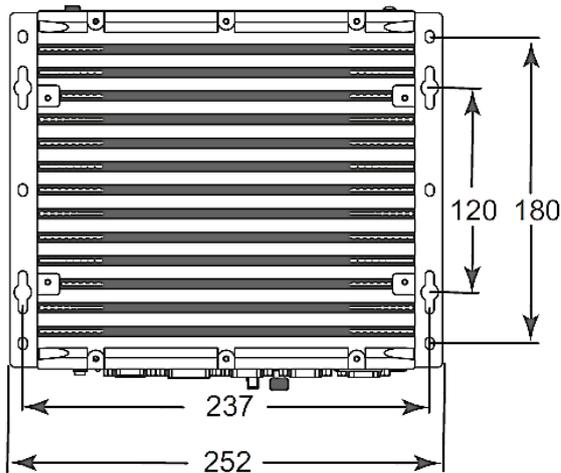
MASS	APPROX. 4.5kg
UNIT	mm
質量	約4.5kg
単位	mm



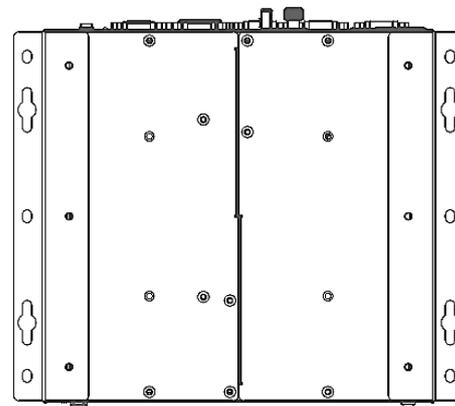
Rear View



Left Side View



Top View



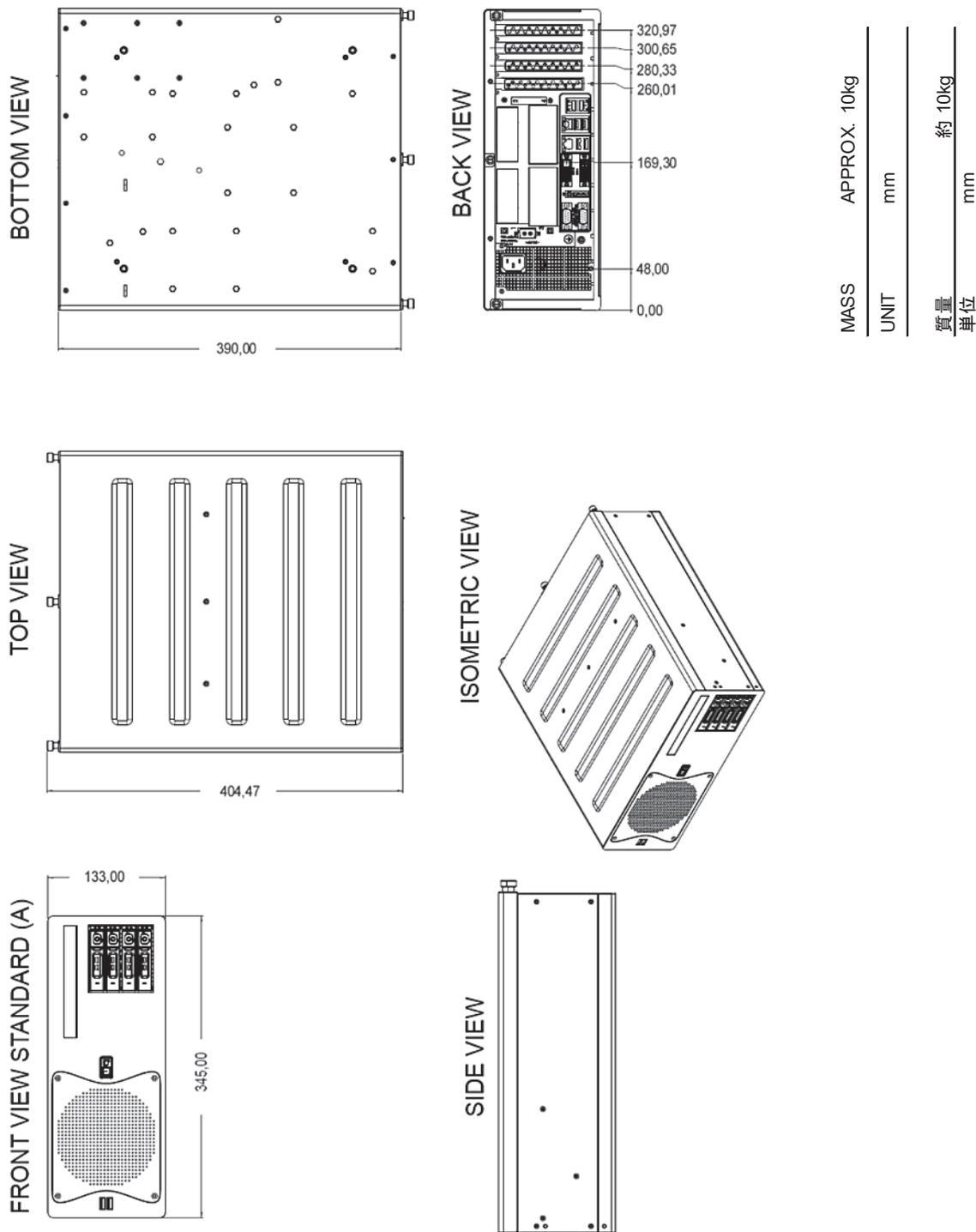
Underside View

NDC-3470 display processing unit (Compliant to IEC 60945) outline diagram

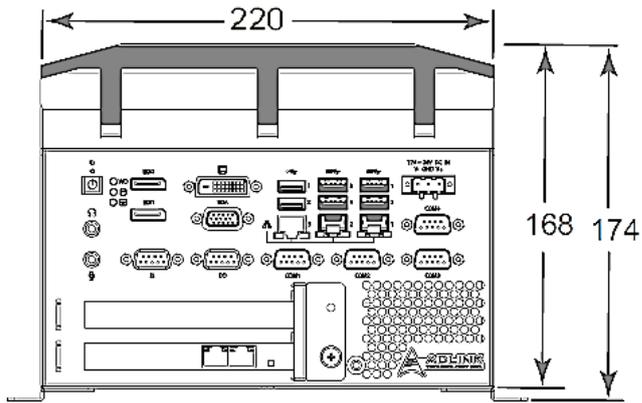
There is no CD\DVD drive in the processing unit. Need to prepare it separately.
The CD\DVD drive whose JRC operation has been confirmed is "LDR-PUE8U3LWH".

2.3.3 Data Processing Unit Outline Diagram

See below for the outline diagram of the data processing unit.

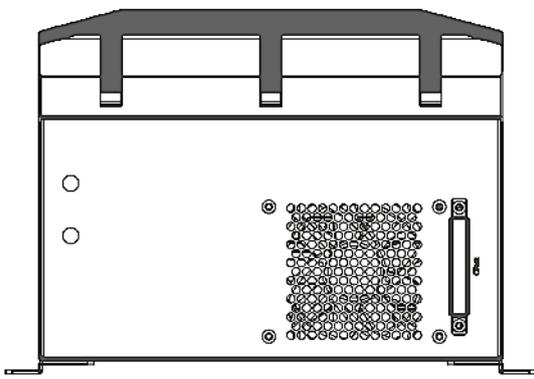


NJW-1460 data processing unit (Compliant to IEC 60945) outline diagram

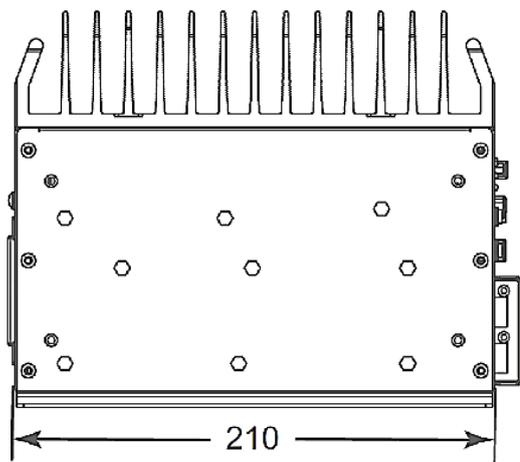


Front View

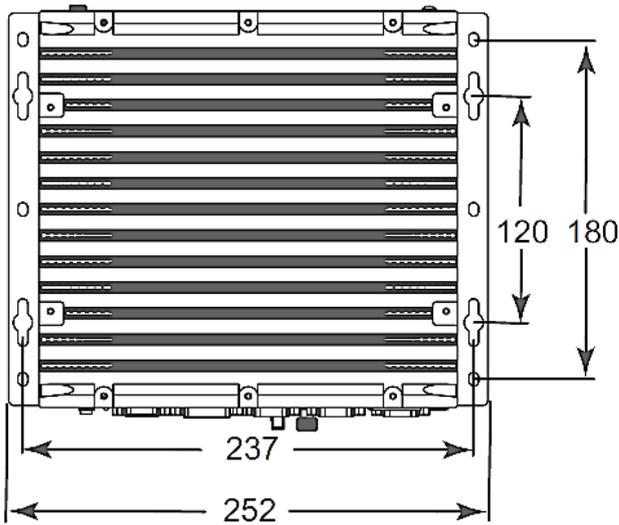
MASS	APPROX. 4.5kg
UNIT	mm
質量	約4.5kg
単位	mm



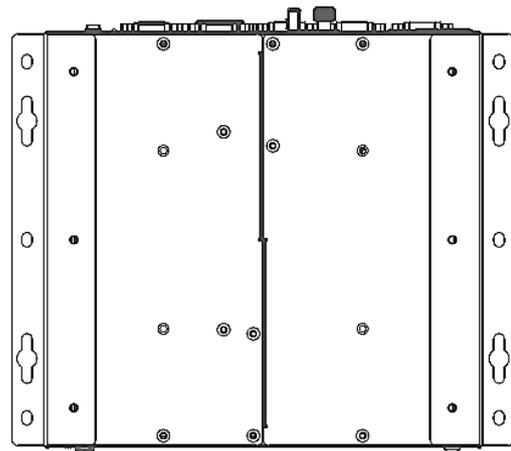
Rear View



Left Side View



Top View

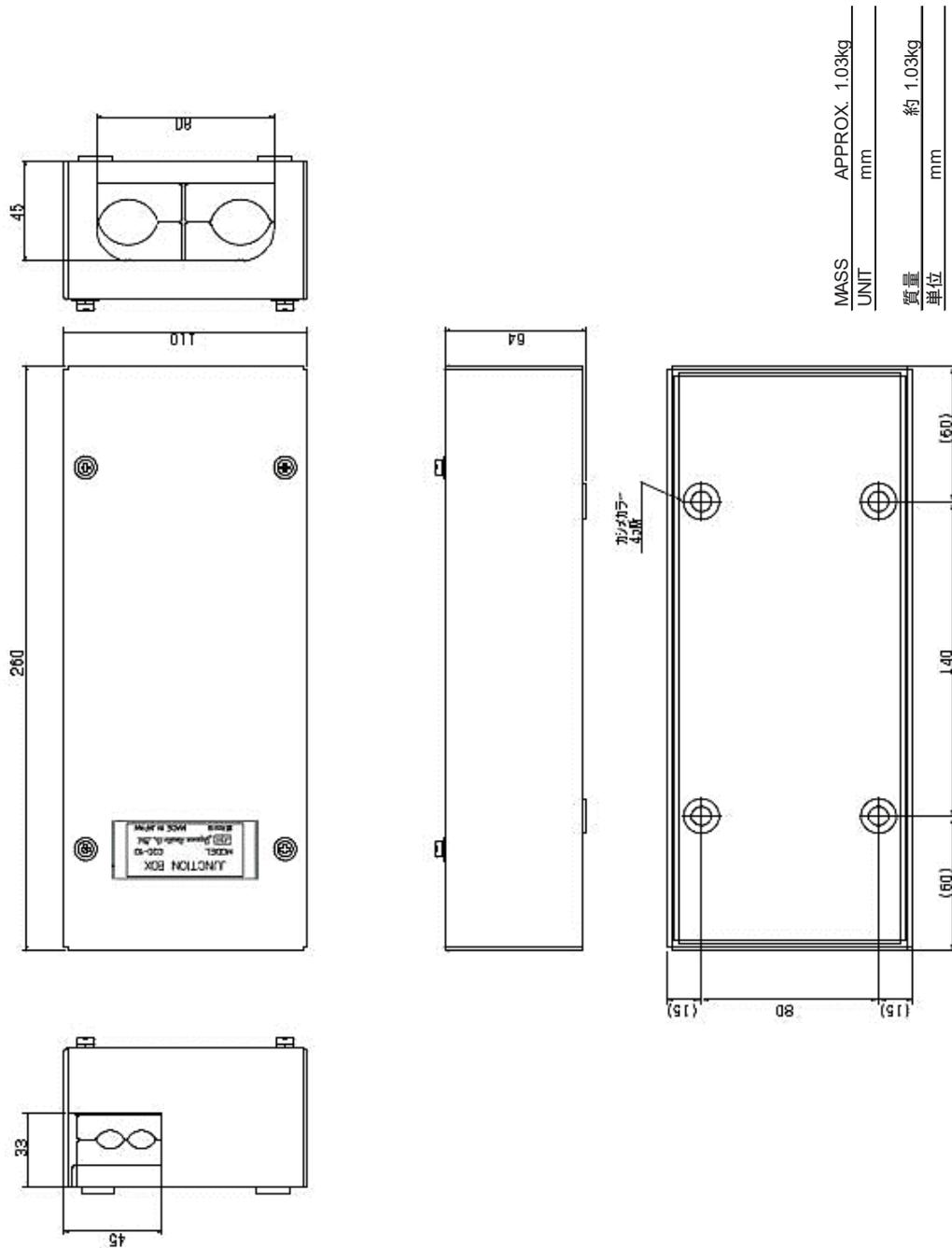


Underside View

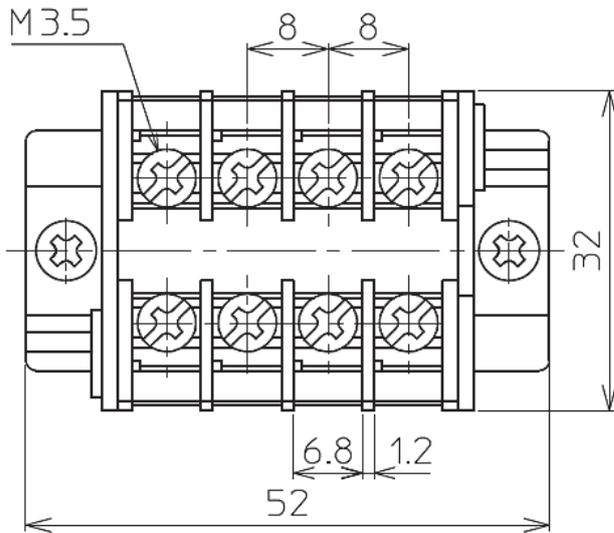
NDC-3460 data processing unit (Compliant to IEC 60945) outline diagram

2.3.4 Terminal Box Outline Diagram

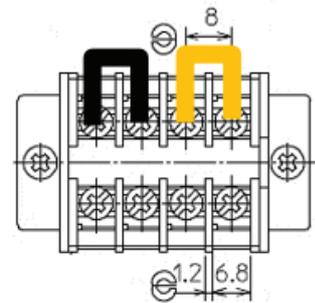
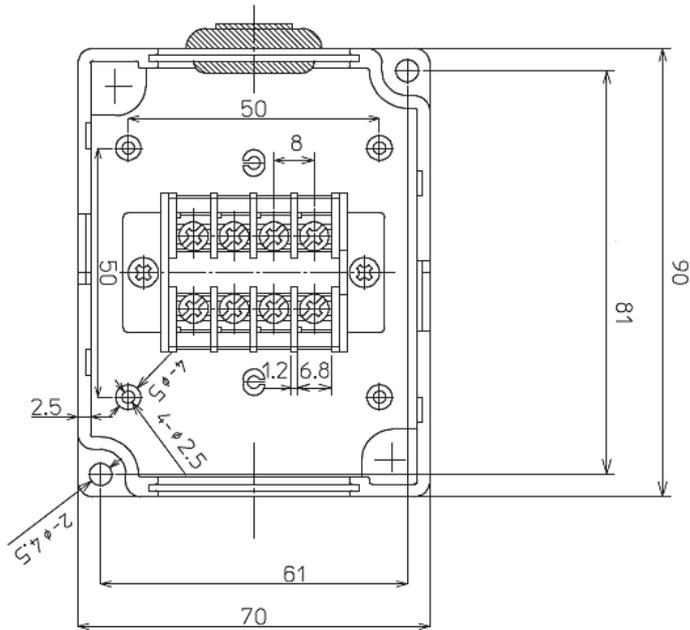
See below for the outline diagram of the terminal box.



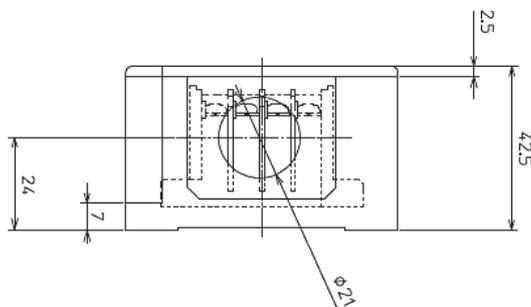
CQD-10 terminal box outline diagram



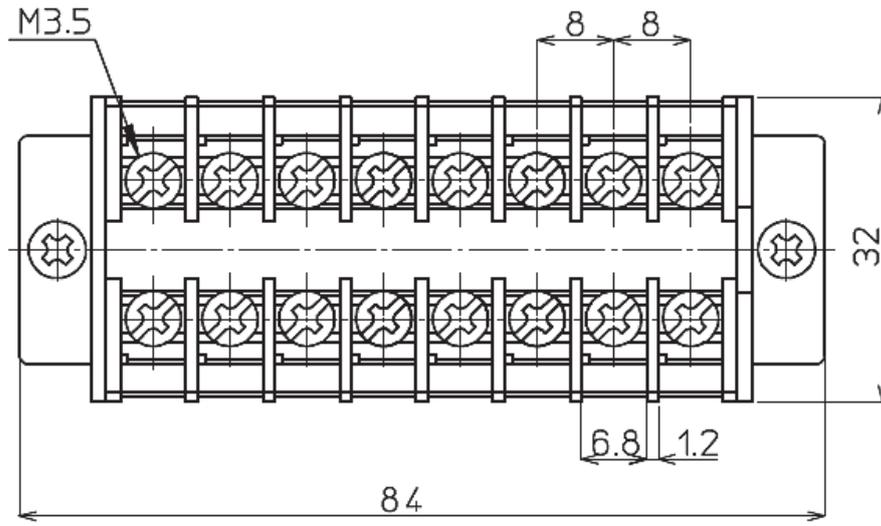
MASS	APPROX. 147g
UNIT	mm
質量	約147g
單位	mm



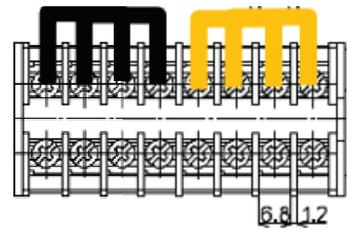
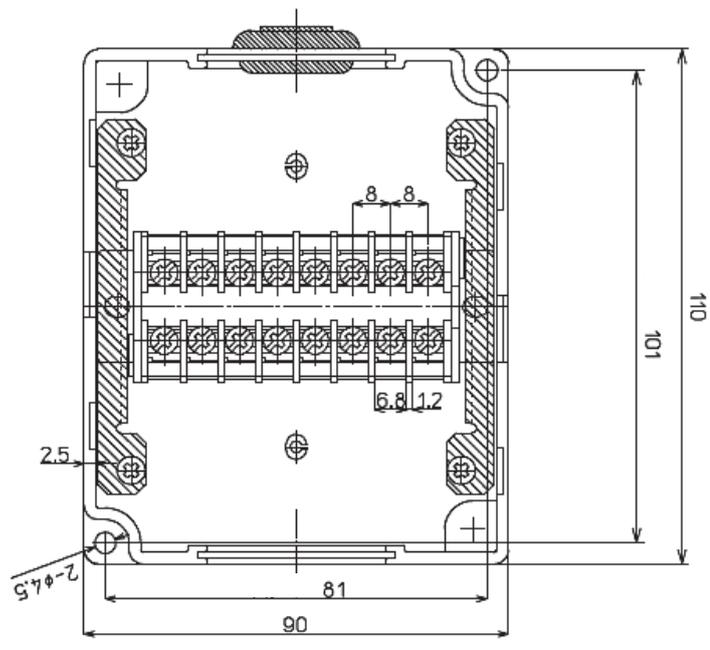
It will be shipped with a short bar attached.



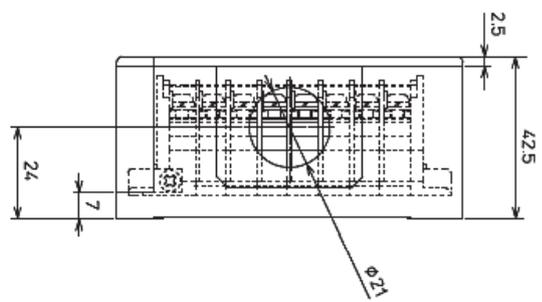
CQD-4704 terminal box outline diagram



MASS	APPROX. 234g
UNIT	mm
質量	約234g
單位	mm



It will be shipped with a short bar attached.

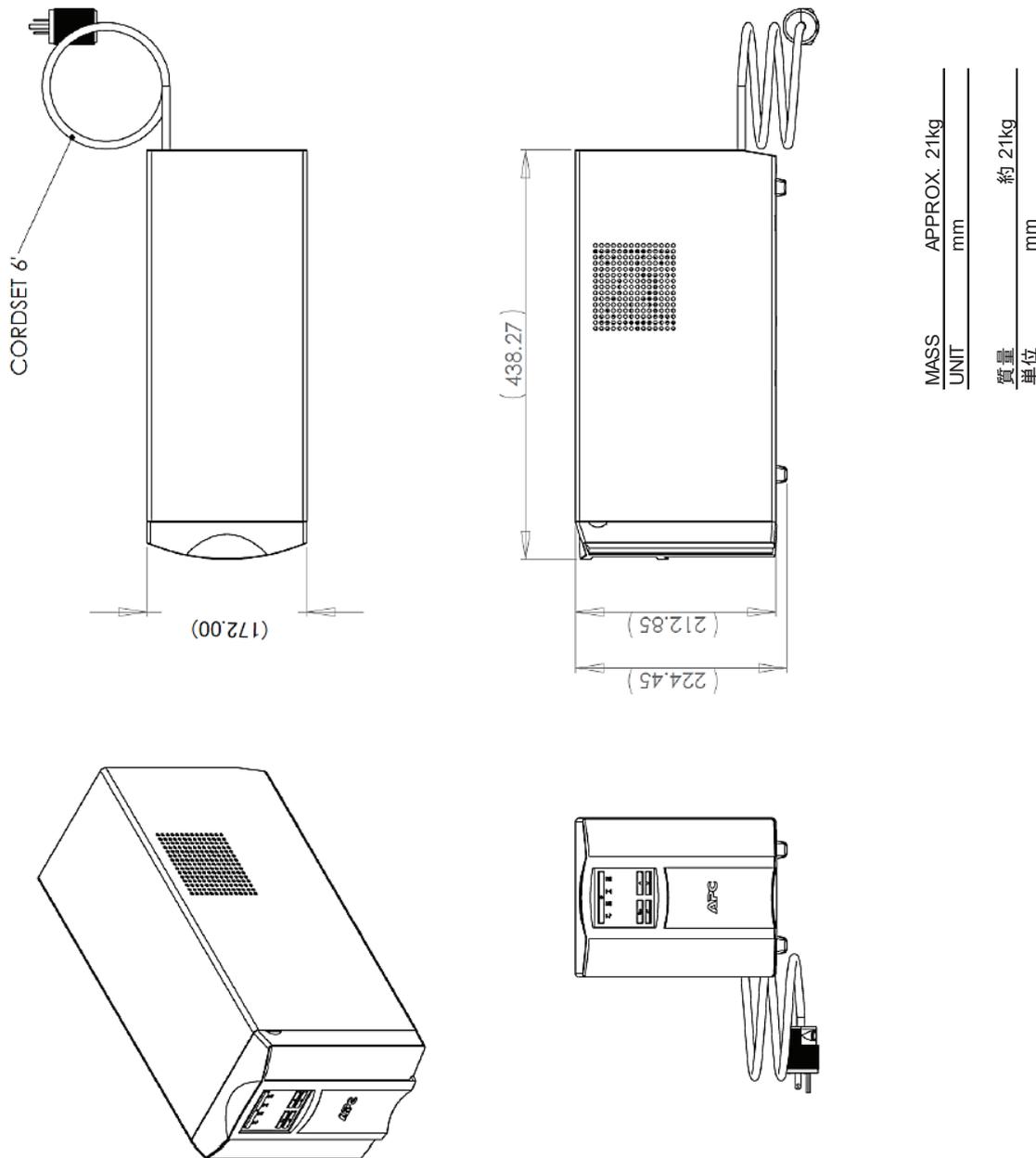


CQD-4708 terminal box outline diagram

2.4 Outline Diagram of Options

2.4.1 UPS Outline Diagram

See below for the outline diagram of the UPS.



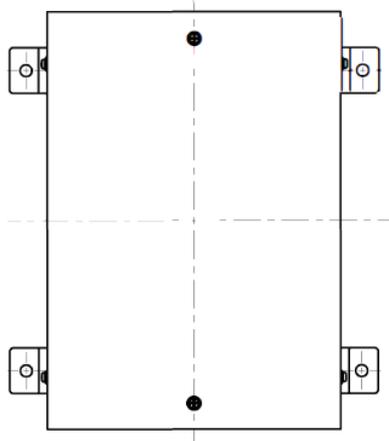
SMT1000J UPS outline diagram



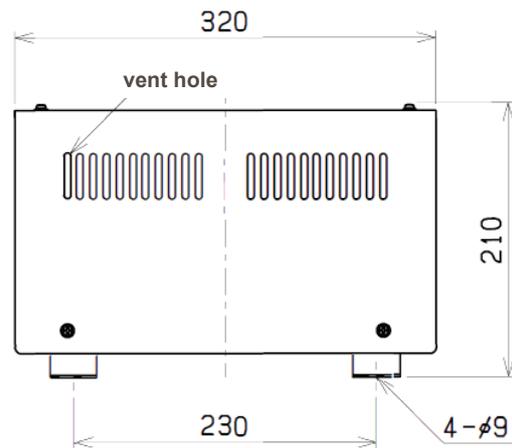
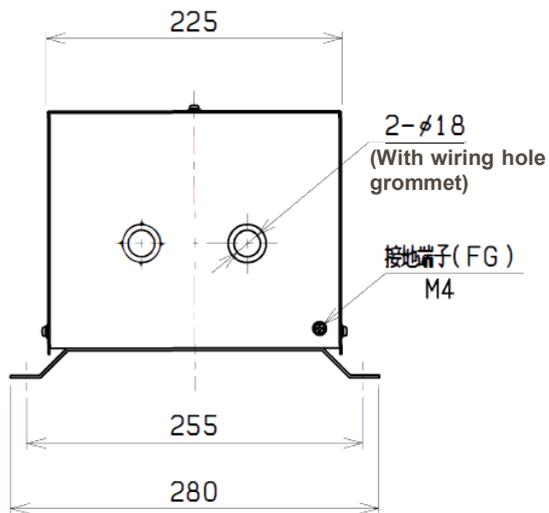
AP9630J network card outline diagram



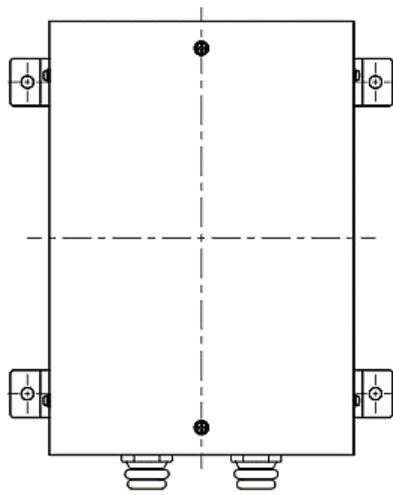
AP9640J network card outline diagram



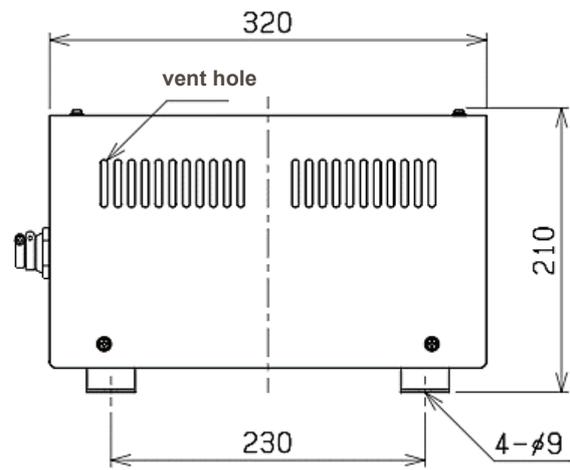
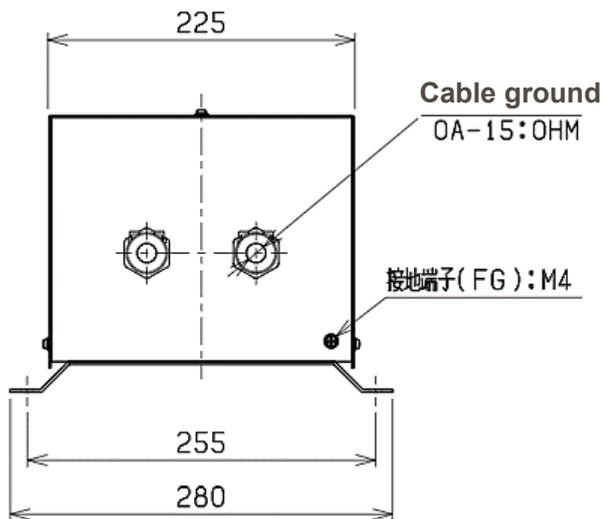
MASS	APPROX. 14.5kg
UNIT	mm
質量	約14.5kg
單位	mm



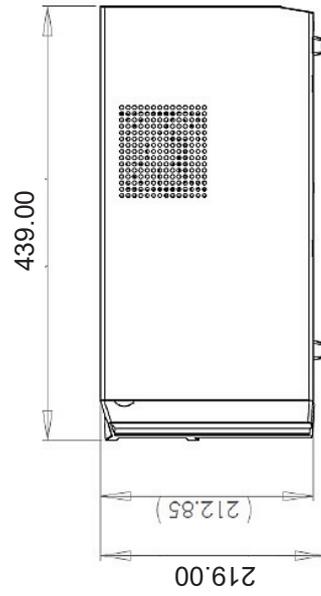
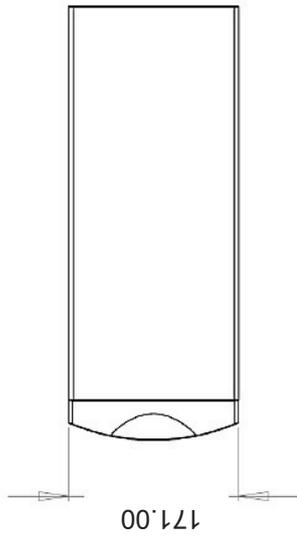
NS11-500 case for transformer outline diagram



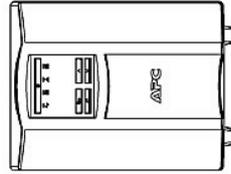
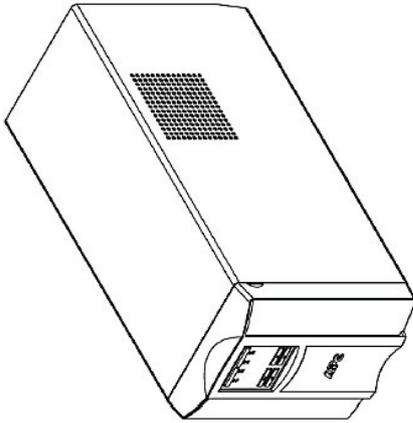
MASS	APPROX. 14.5kg
UNIT	mm
質量	約14.5kg
單位	mm



A2010706 case for transformer outline diagram



MASS	APPROX. 18.9kg
UNIT	mm
質量	約 18.9kg
單位	mm



SMT1000I/SMT1000IC UPS outline diagram



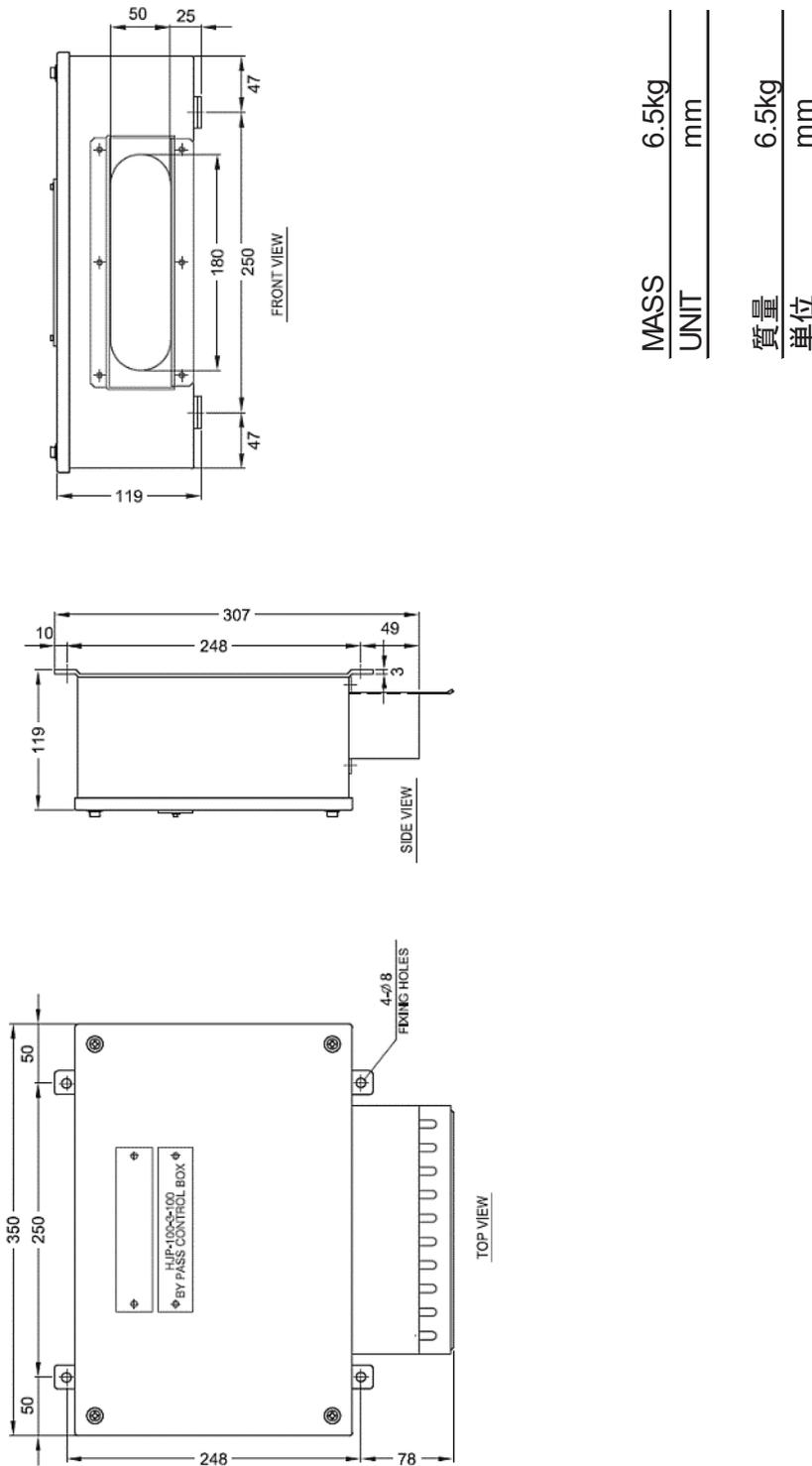
AP9630 network card outline diagram



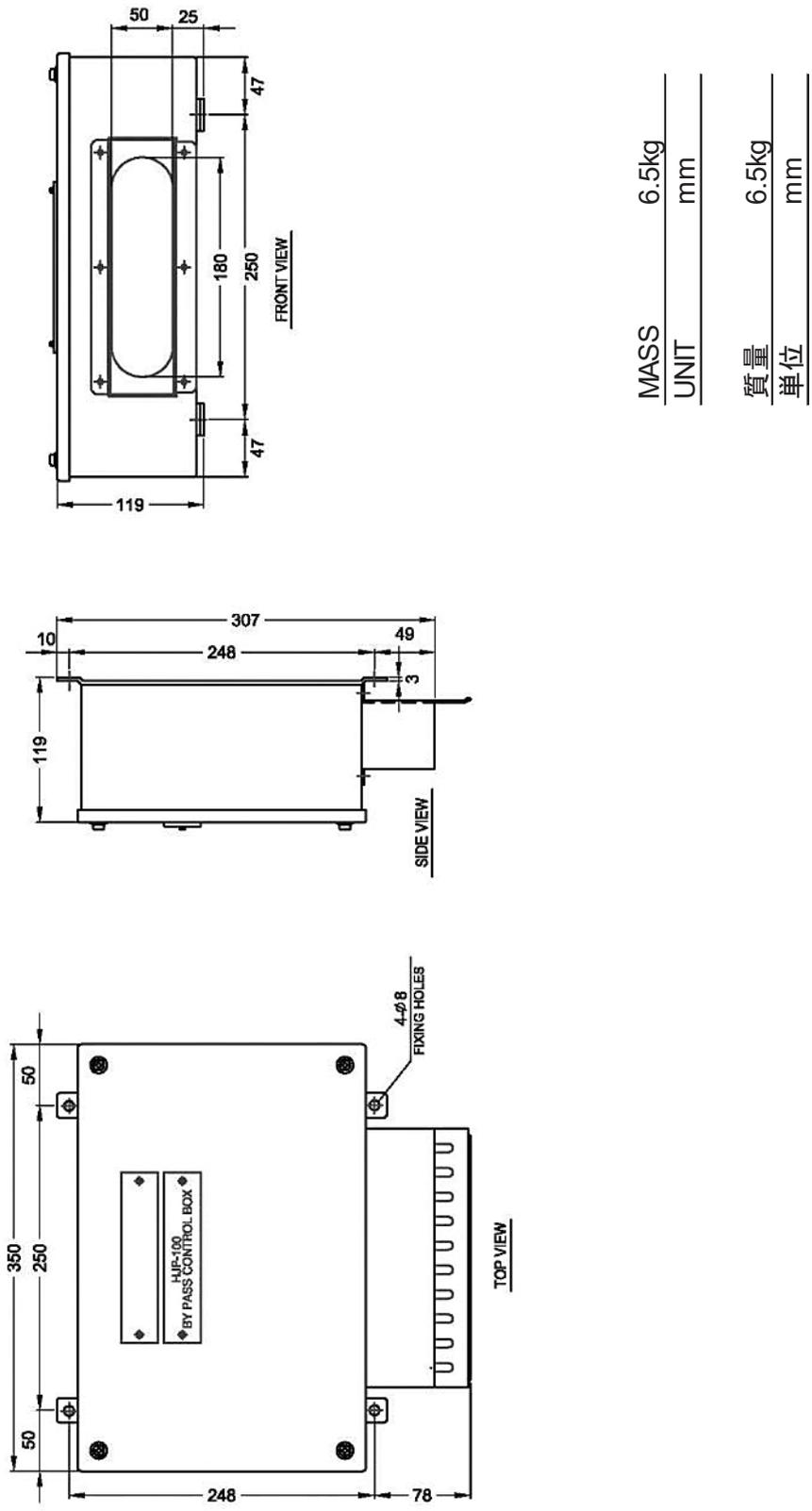
AP9640 network card outline diagram

2.4.2 JB CONTROL BOX Outline Diagram

See below for the outline diagram of the JB control box.



HJP-100-3-100 JB control box outline diagram

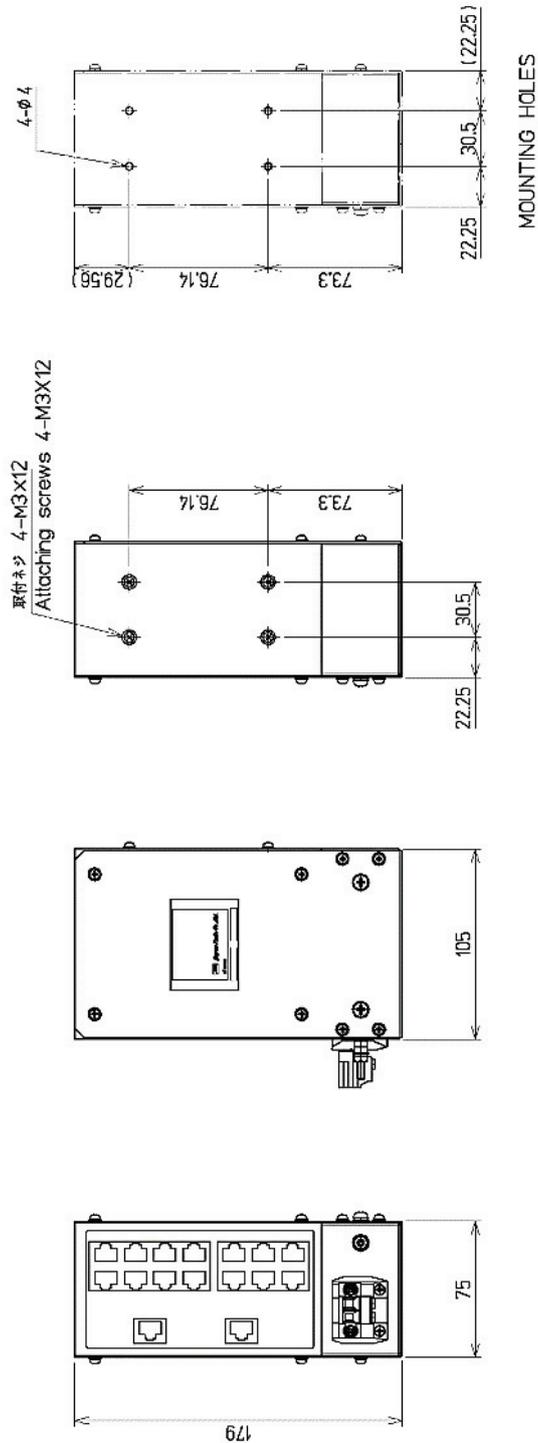


HJP-100-3 JB control box outline diagram

2.4.3 Sensor LAN Switch Unit Outline Diagram

See below for the outline diagram of the sensor LAN switch unit.

NQA-2443 sensor LAN switch unit



外形寸法 を記入	外形寸法 許容差		取付寸法 許容差	
	以下	以上	以下	以上
3	±0.5	±0.5	±0.5	±0.5
6	±1	±0.5	±0.5	±0.5
30	±1.5	±0.5	±0.5	±0.5
120	±2.5	±1	±1	±1
400	±4	±2	±2	±2
1000	±6	±3	±3	±3
2000	±8	±3	±3	±3

OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	±0.5
30	120	±1.5	±0.5
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	±3

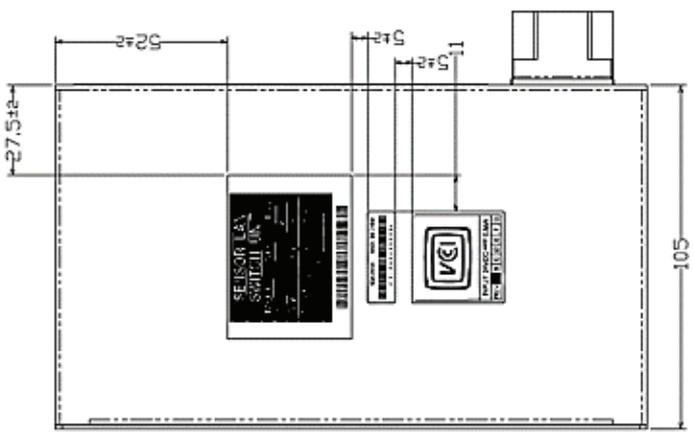
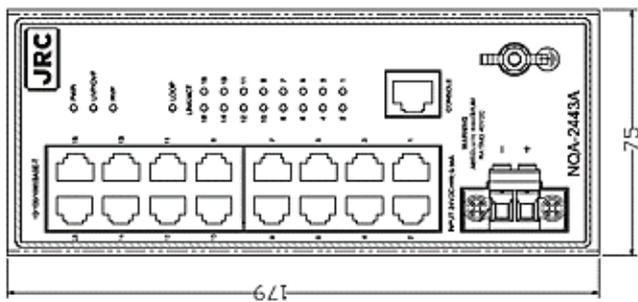
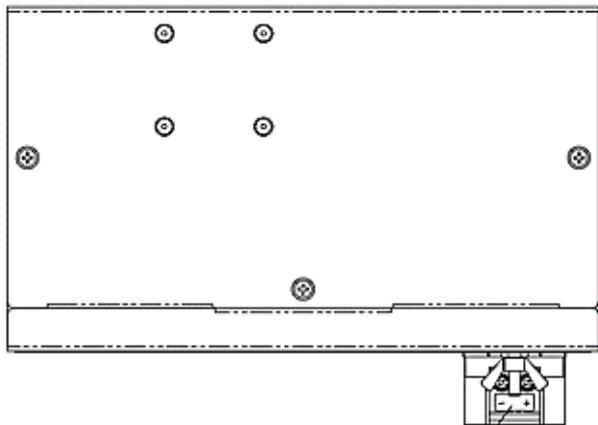
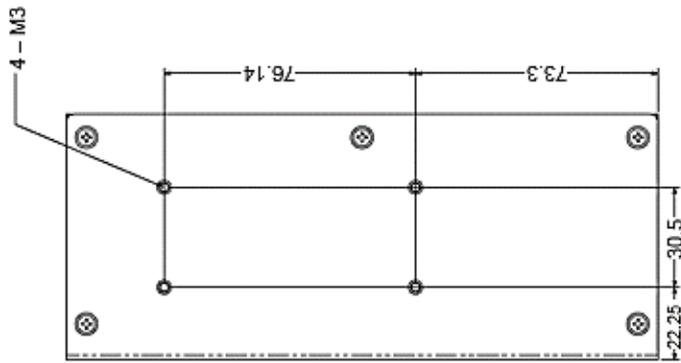
MASS	1.5 kg
UNIT	mm
質量	1.5 kg
単位	mm

SCNQA5173

SENSOR LAN UNIT OUTLINE DRAWING

NQA-2443

NQA-2443 sensor LAN switch unit (Compliant to IEC 60945) outline diagram

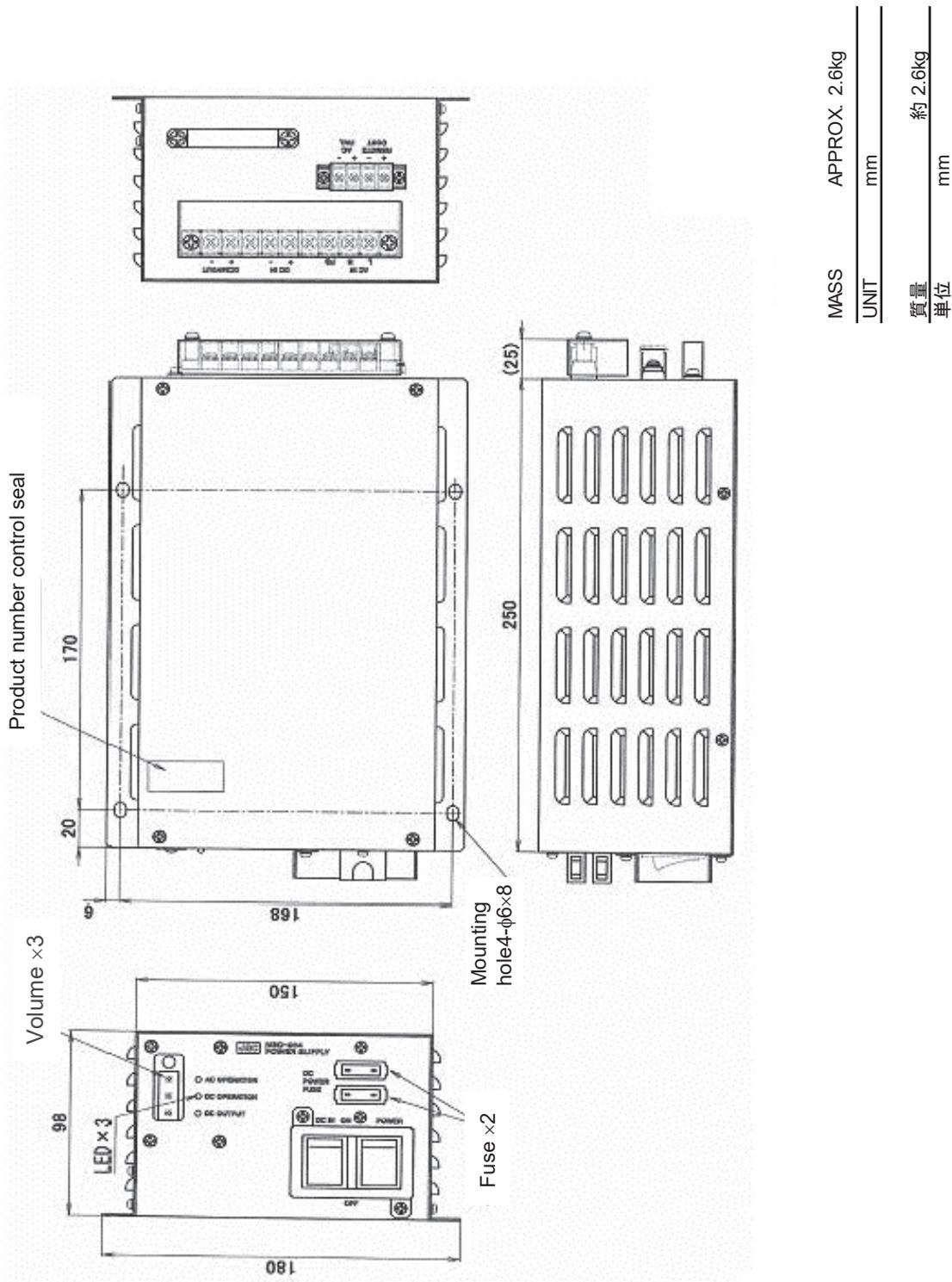


MASS	APPROX. 0.8kg
UNIT	mm
質量	約0.8kg
単位	mm

NQA-2443A sensor LAN switch unit (Compliant to IEC 60945) outline diagram

2.4.4 Power Supply Unit Outline Diagram

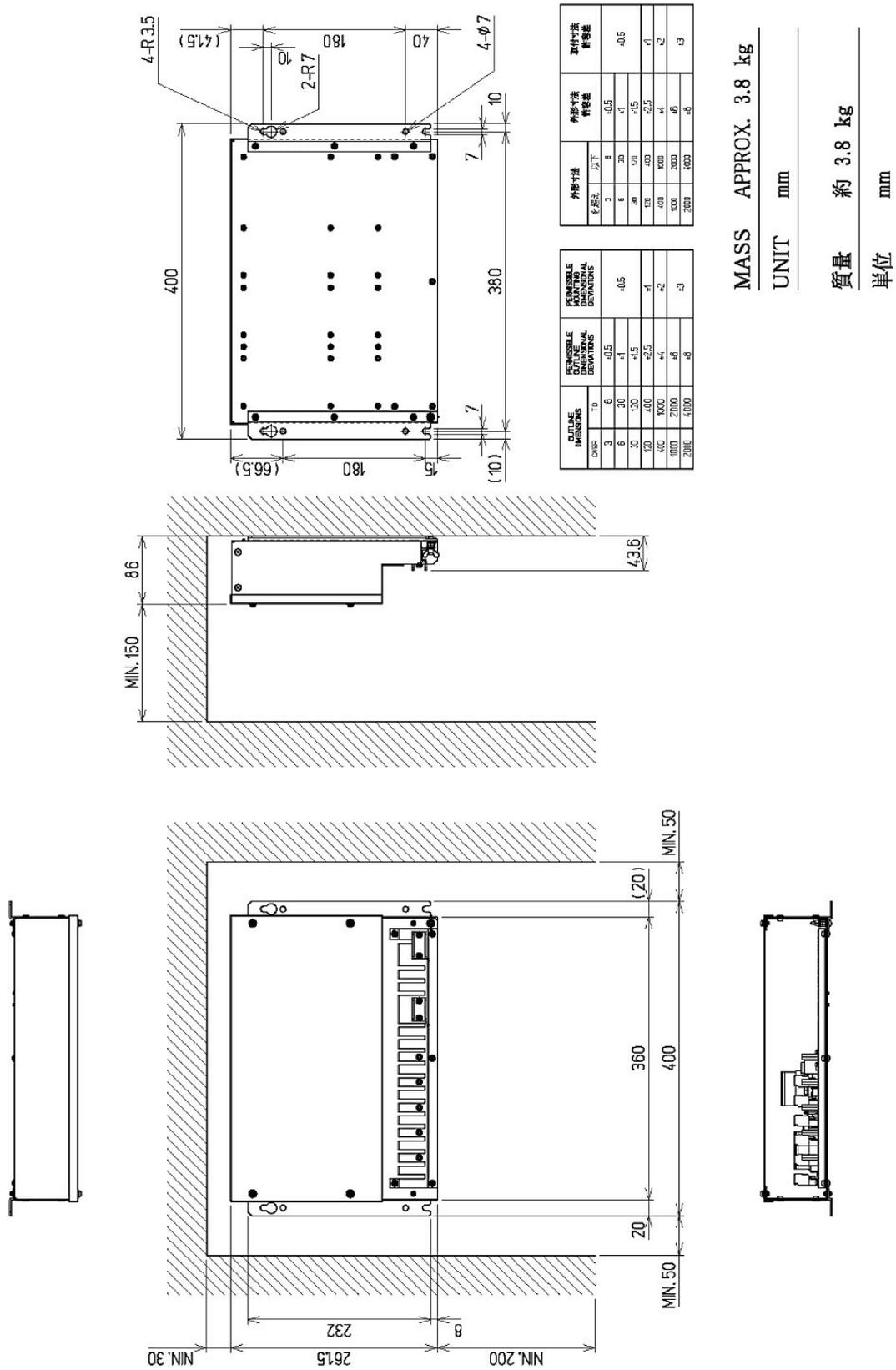
See below for the outline diagram of the power supply unit.



NBD-904 power supply unit outline diagram

2.4.5 SLC Outline Diagram

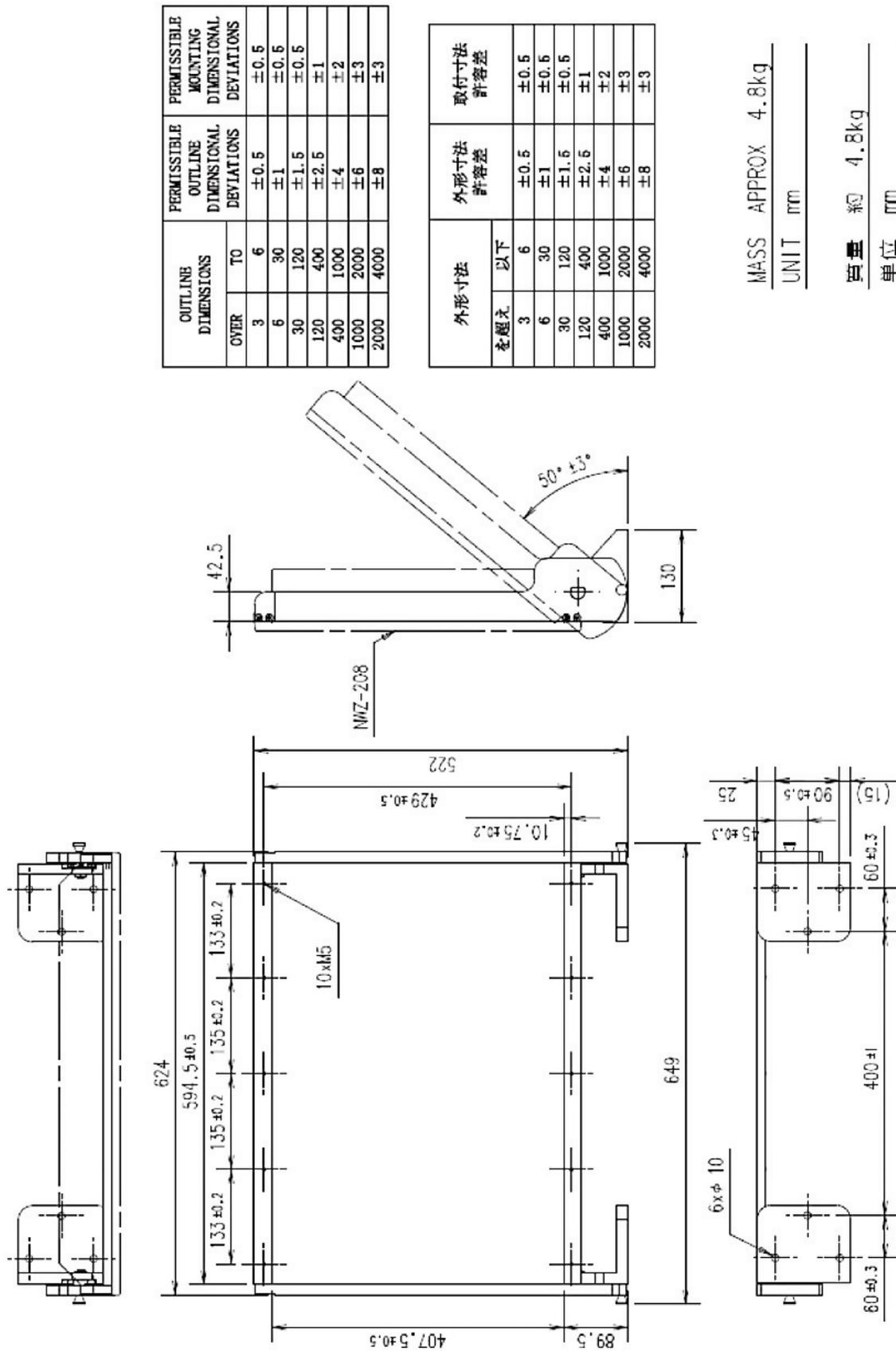
See below for the outline diagram of the SLC.



NQE-1143-S(CMH-2370) SLC outline diagram

2.4.6 26-Inch Desktop Frame Outline Diagram

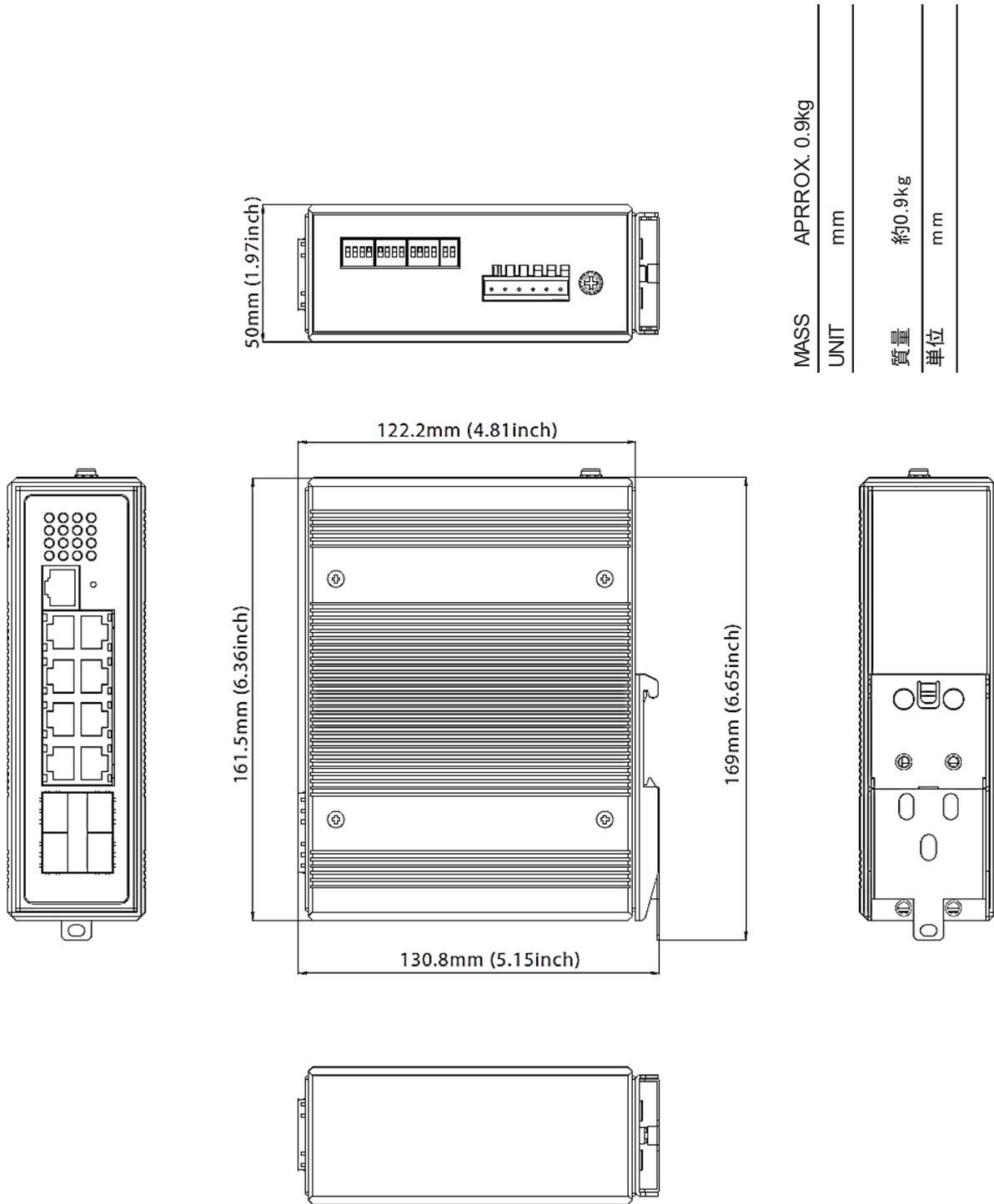
See below for the outline diagram of the 26-inch desktop frame.



CWB-1660 26-inch desktop frame outline diagram

2.4.7 GateWayBox Outline Diagram

See below for the outline diagram of the GateWayBox.



H-7HZJC0016 GateWayBox outline diagram

2.5 Model List

2.5.1 JAN-470

Model	Touch panel display unit	Display processing unit	Data processing unit	Ship power
JAN-470-9ANN	NWZ-1470N	NWM-1470	NJV-1460	100-115VAC 50Hz/60Hz single phase or 220-240VAC 50Hz/60Hz single phase ※Selectable
JAN-470-4ANN	NWZ-1470			
JAN-470-2ANN	NWZ-260			
JAN-470-1PNN	HNS-00010			
JAN-470-0ANN	-*1	NWM-1470		

*1: Customer prepare touch panel display.

Recommended specifications of touch panel display

- Resolution: FHD
- Simultaneous Touch Points: 5 points or more
- Touch system: PCAP (Capacitive Touch panel)
- Supported OS: Windows 10
- Input video terminal: DVI

2.5.2 JAN-470A

Model	Touch panel display unit	Display processing unit	Data processing unit	Power supply unit	Ship power
JAN-470A-9ANN	NWZ-1470N	NDC-3470	NDC-3460	NBD-904	100-115VAC 50Hz/60Hz single phase or 220-240VAC 50Hz/60Hz single phase ※Selectable
JAN-470A-4ANN	NWZ-1470				
JAN-470A-2ANN	NWZ-260				
JAN-470A-0ANN	-*1				

*1: Customer prepare touch panel display.

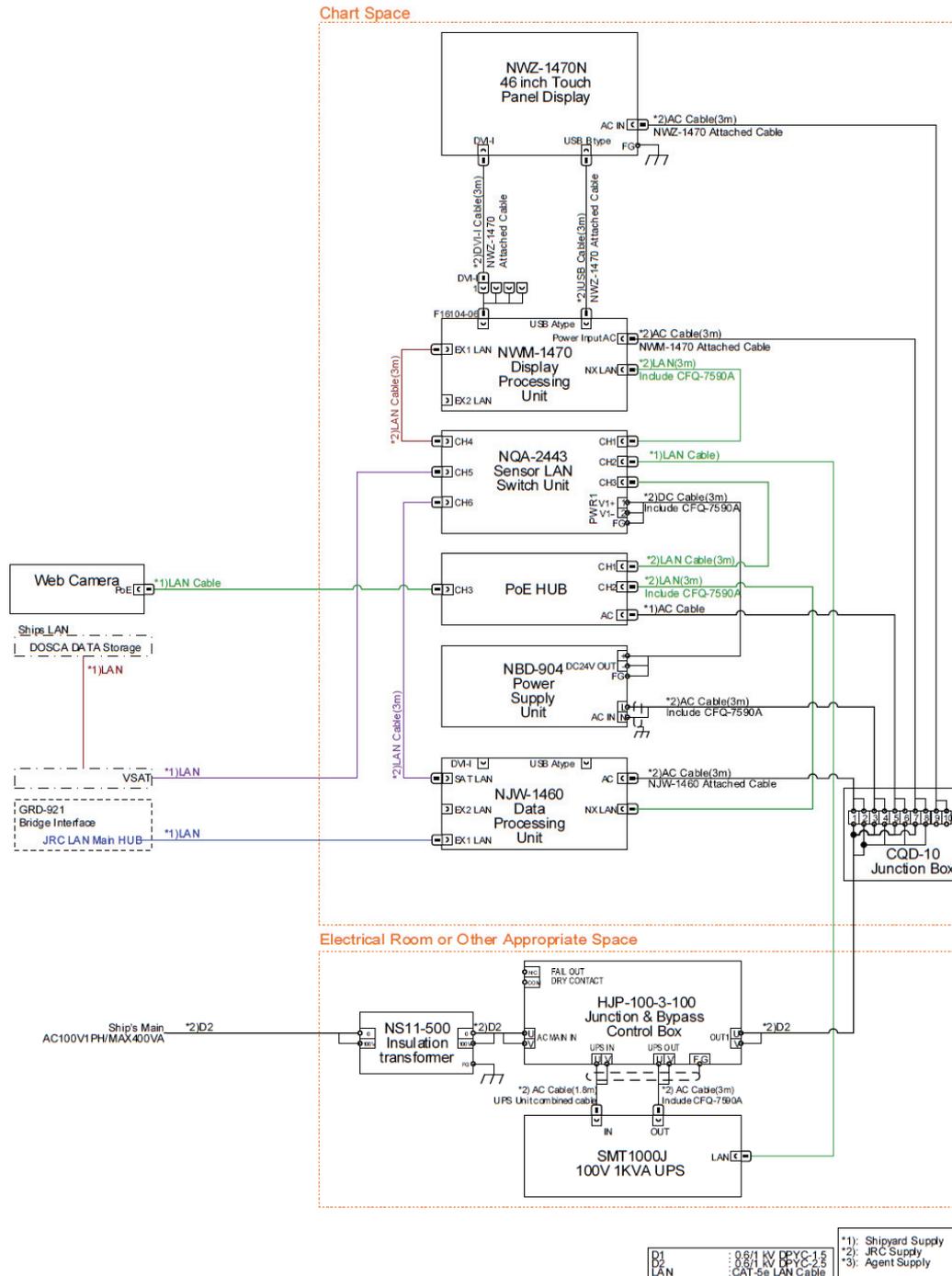
Recommended specifications of touch panel display

- Resolution: FHD
- Simultaneous Touch Points: 5 points or more
- Touch system: PCAP (Capacitive Touch panel)
- Supported OS: Windows 10
- Input video terminal: DVI

2.6 Connection Diagram

2.6.1 Connection Diagrams [JRC] [JAN-470]

JRC ECDIS & VDR [For 100V configuration] [Option included configuration] [JAN-470]



Memo

Option:

- Offline Weather data is acquired directly via the satellite communication network.
 - Equipped with a Web Camera and PoE HUB to acquire images for the Playback function.
- Note) Web Camera and PoE HUB are arranged by the customer.

Figure 2.6.1a JAN-470-9ANN/4ANN (for JRC ECDIS) connection diagram

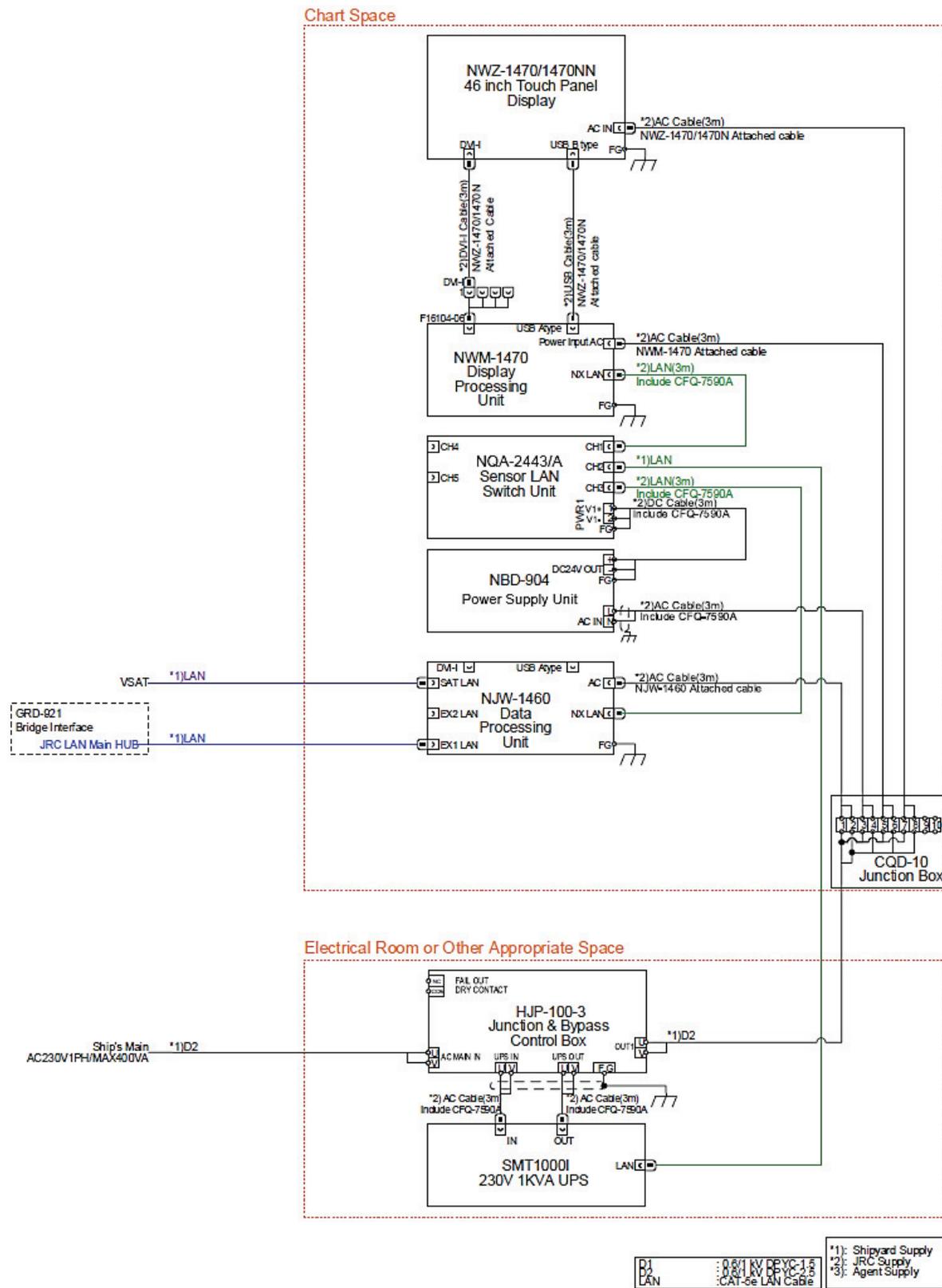


Figure 2.6.1b JAN-470-9ANN/4ANN (for JRC ECDIS) connection diagram

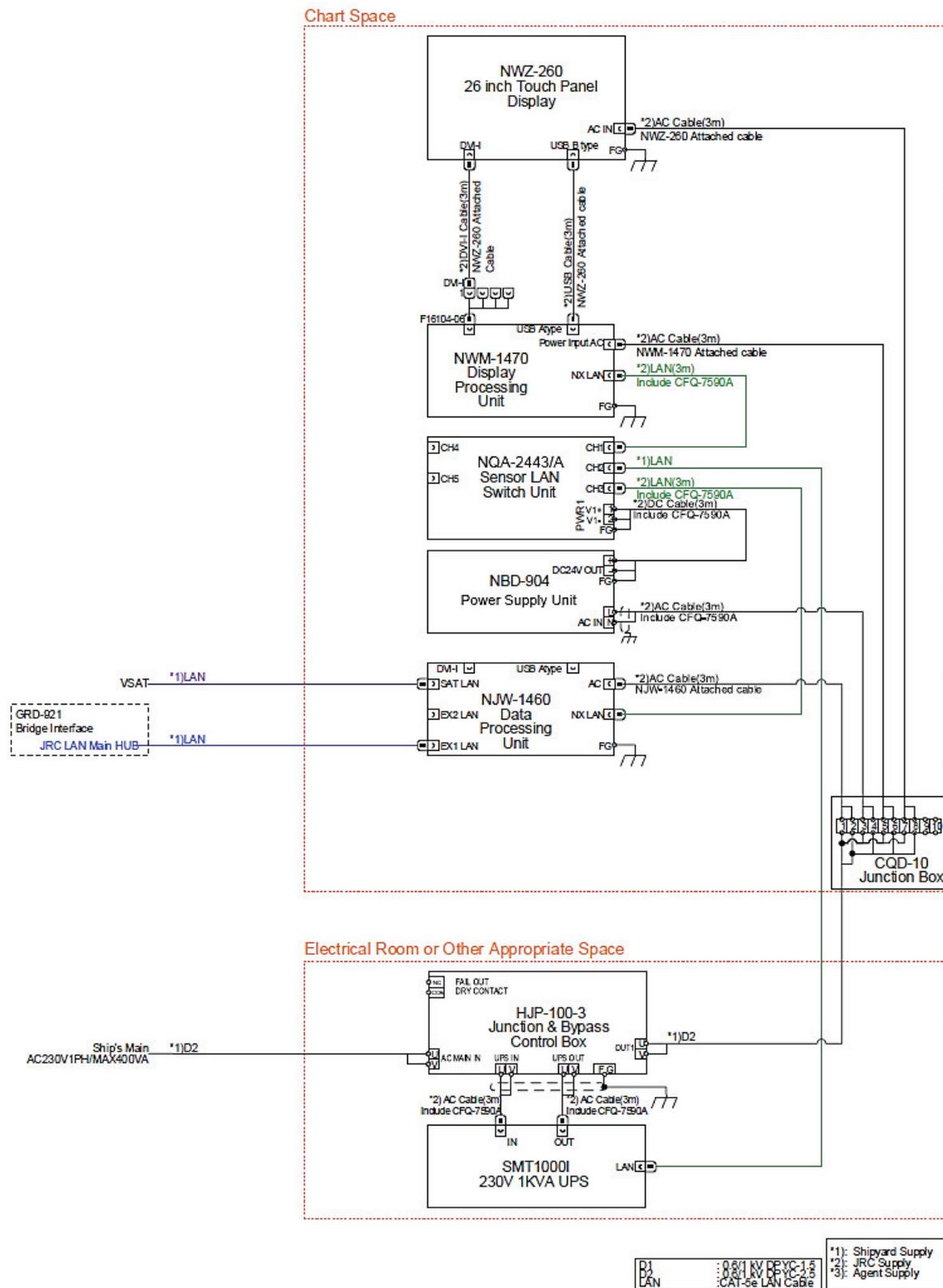


Figure 2.6.1c JAN-470-2ANN (for JRC ECDIS) connection diagram

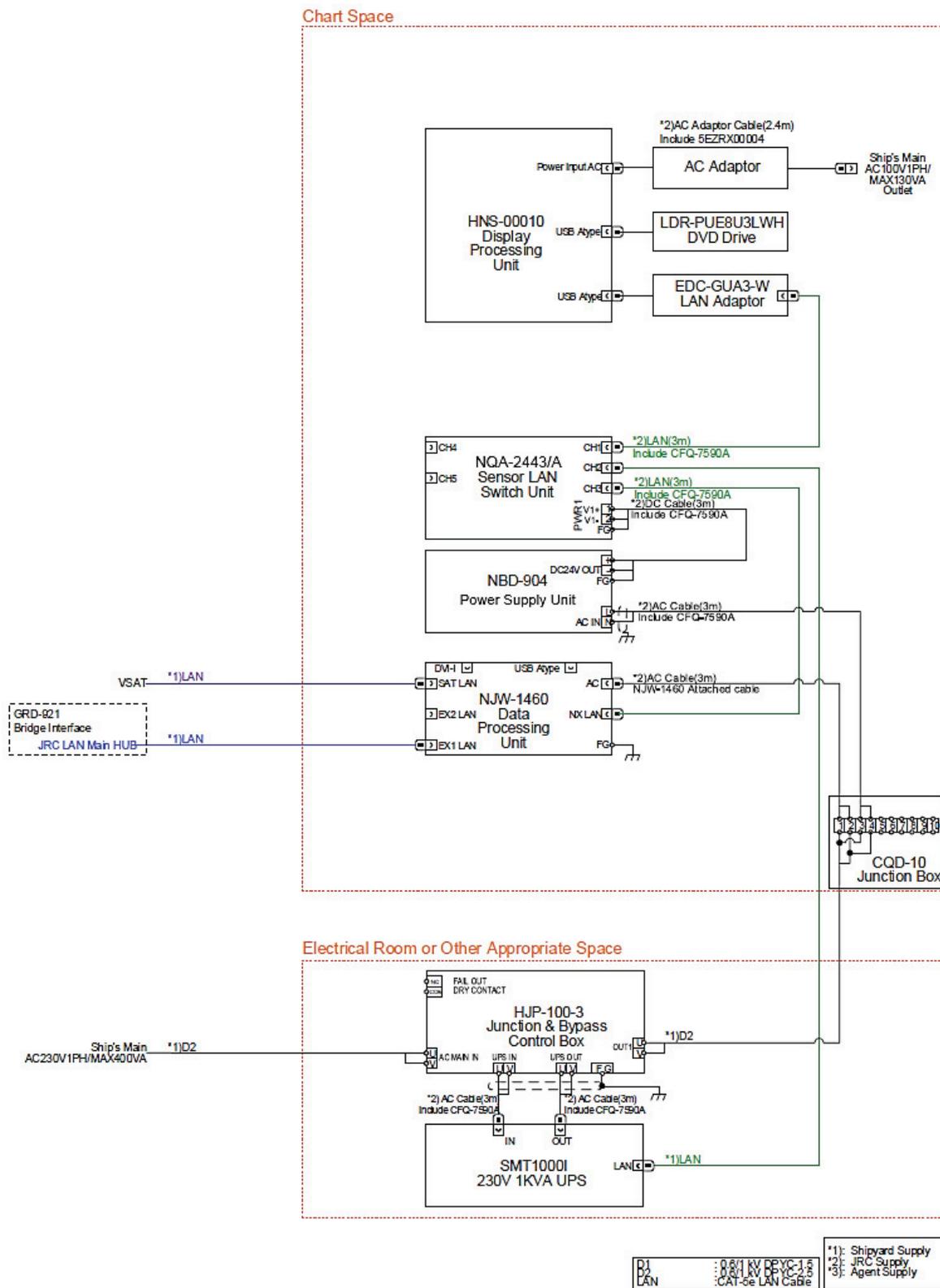


Figure 2.6.1d JAN-470-1PNN (for JRC ECDIS) connection diagram

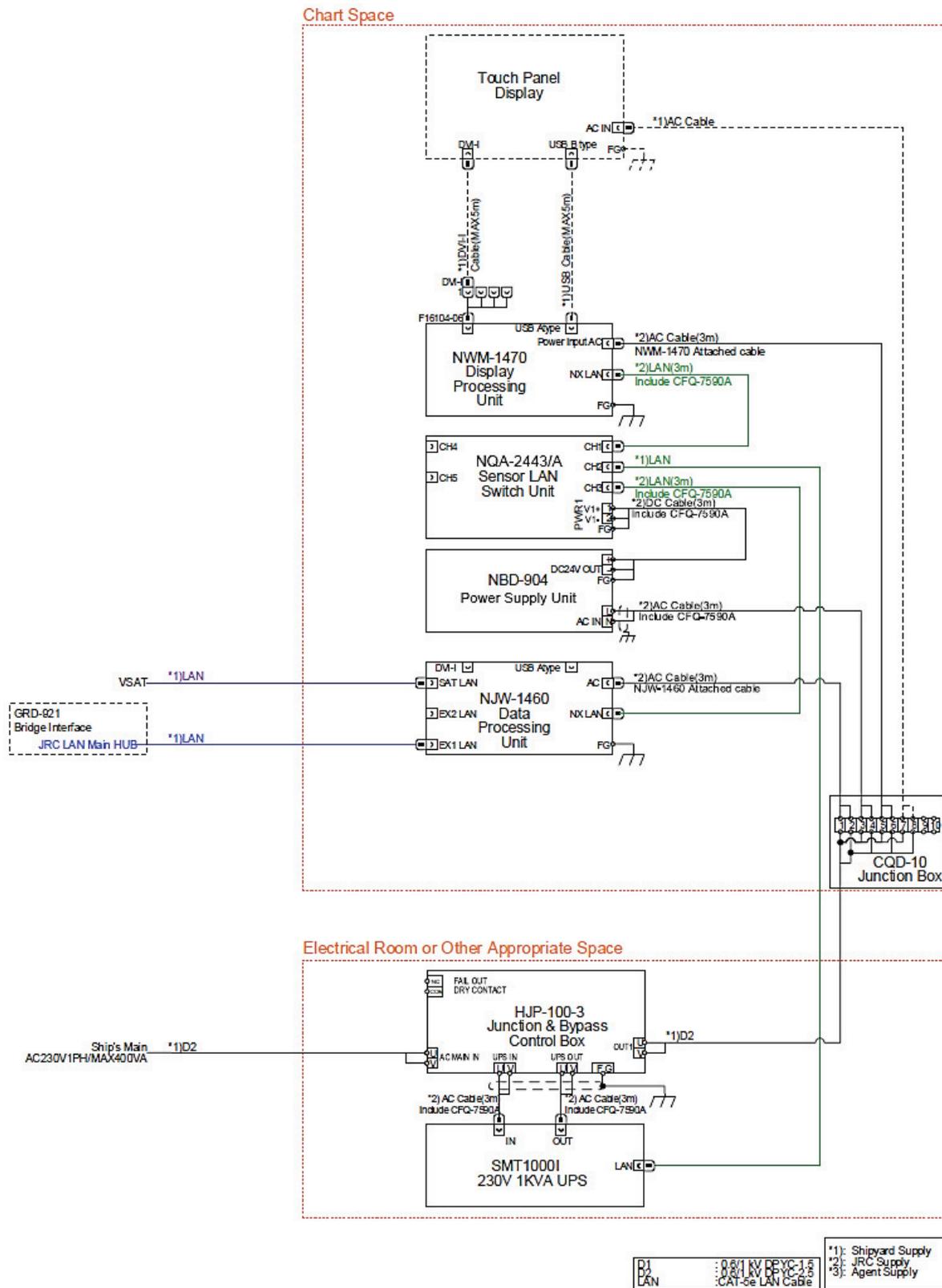


Figure 2.6.1e JAN-470-0ANN (for JRC ECDIS) connection diagram

2.6.2 Connection Diagrams [JRC] [JAN-470A]

JRC ECDIS & VDR [For 100V configuration] [JAN-470A]

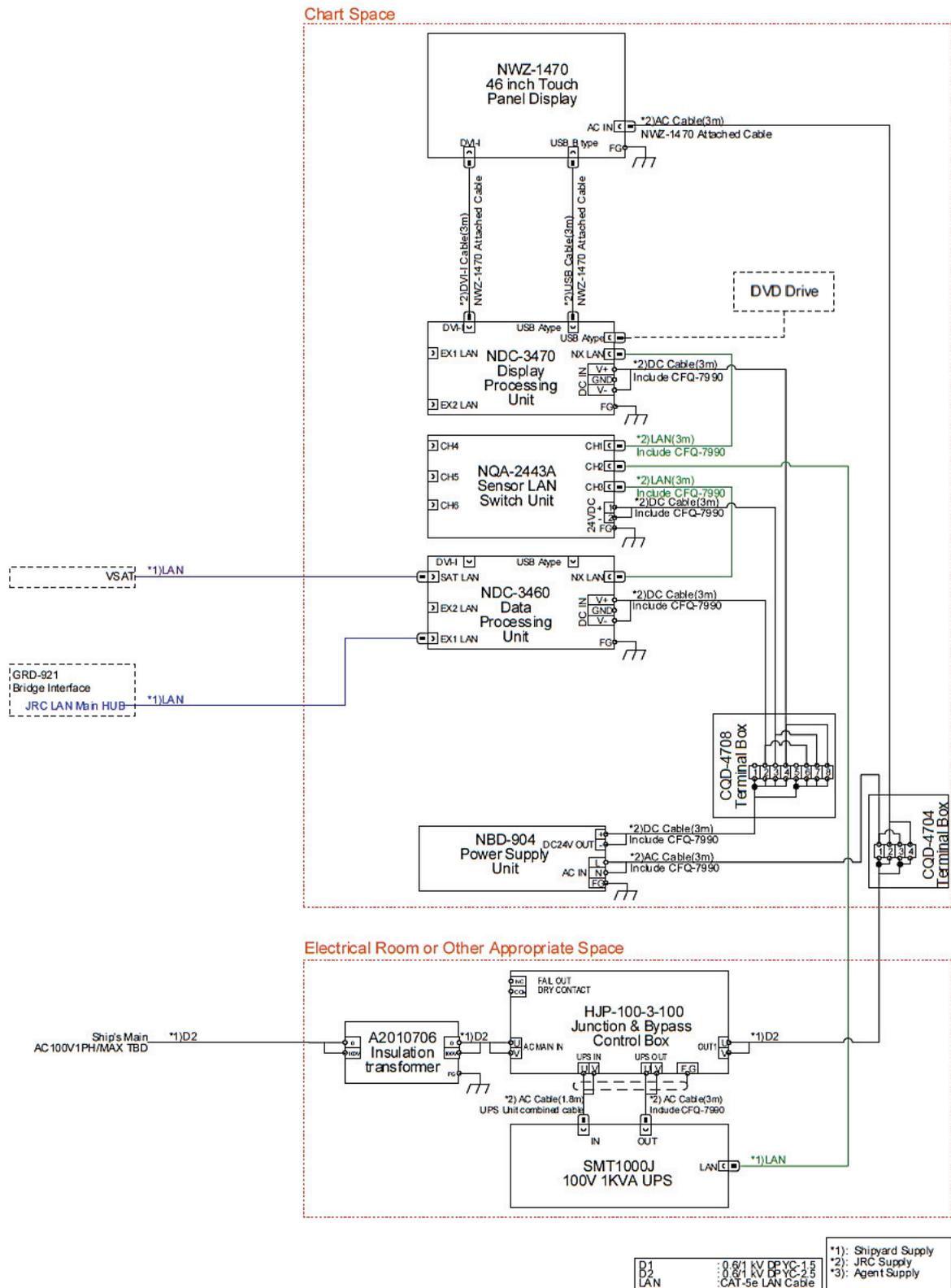
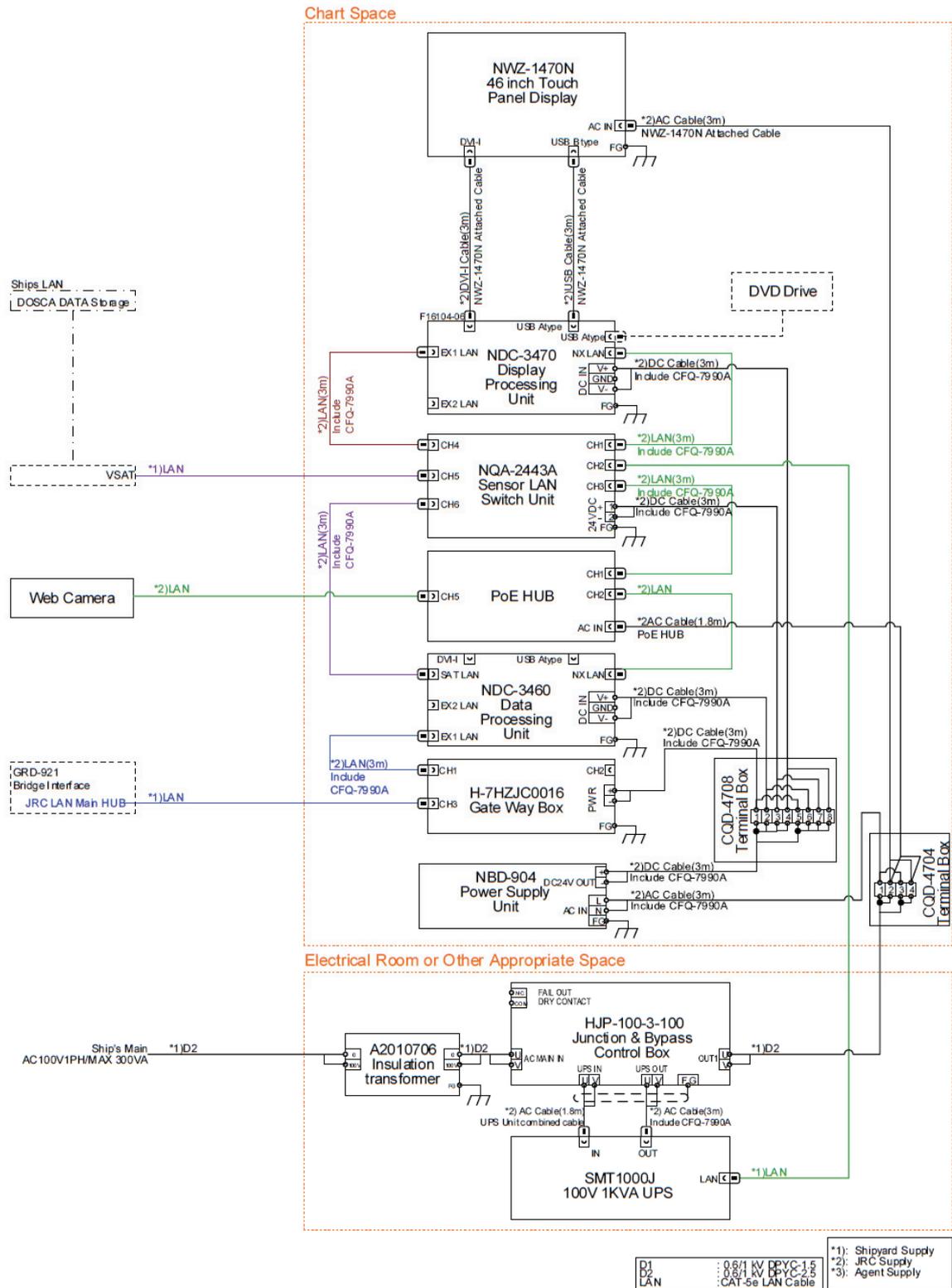


Figure 2.6.2a JAN-470A-4ANN (for JRC ECDIS) connection diagram

JRC ECDIS & VDR [For 100V configuration] [Option included configuration] [JAN-470A]



Memo

Option:

- GateWayBox (H-7HZJC0016) ensures security between navigation equipment networks.
- Offline Weather data is acquired directly via the satellite communication network.
- Equipped with a Web Camera and PoE HUB to acquire images for the Playback function.
Note) Web Camera and PoE HUB are arranged by the customer.

Figure 2.6.2b JAN-470A-9ANN (for JRC ECDIS) connection diagram

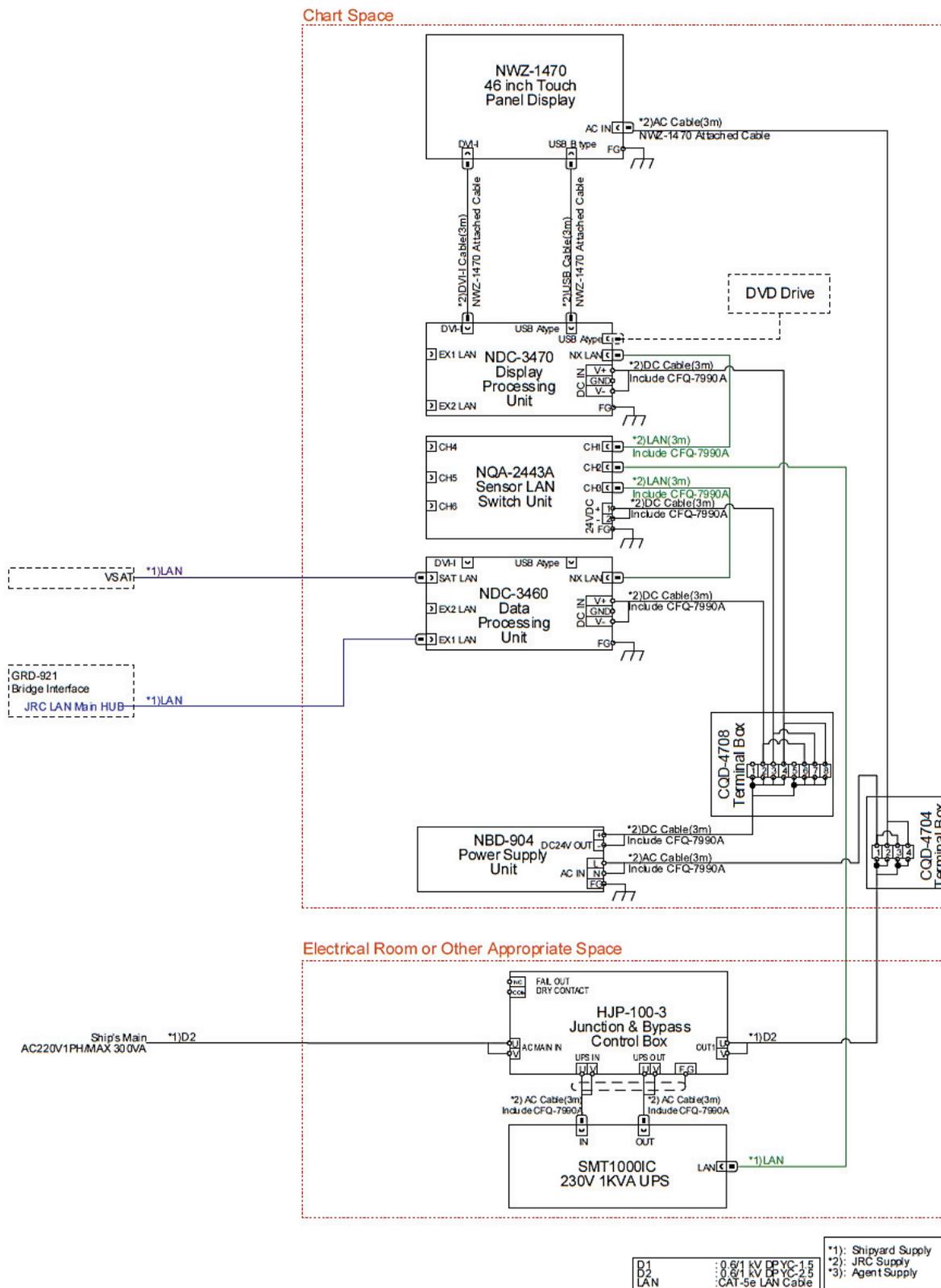


Figure 2.6.2c JAN-470A-4ANN (for JRC ECDIS) connection diagram

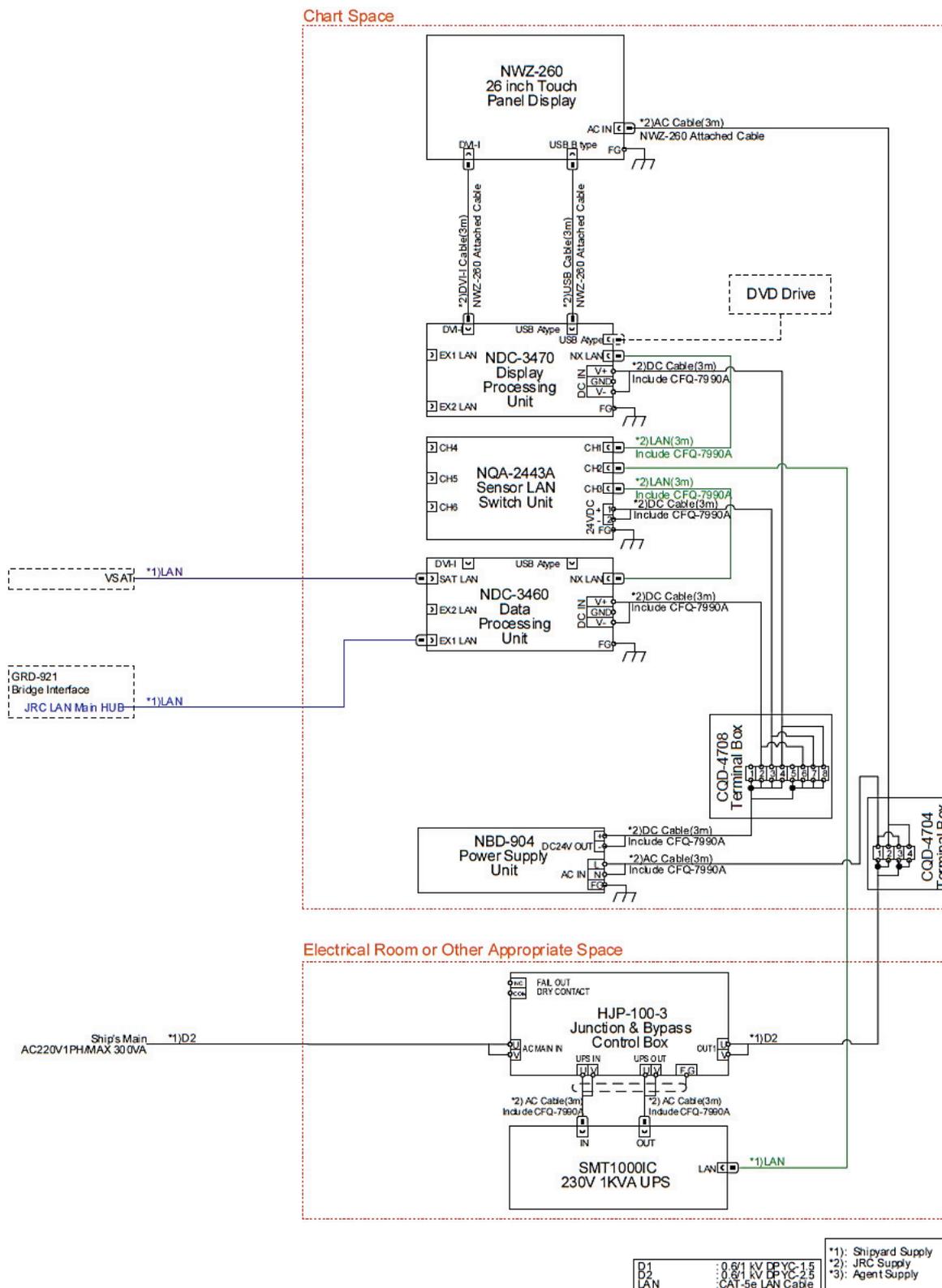


Figure 2.6.2d JAN-470A-2ANN (for JRC ECDIS) connection diagram

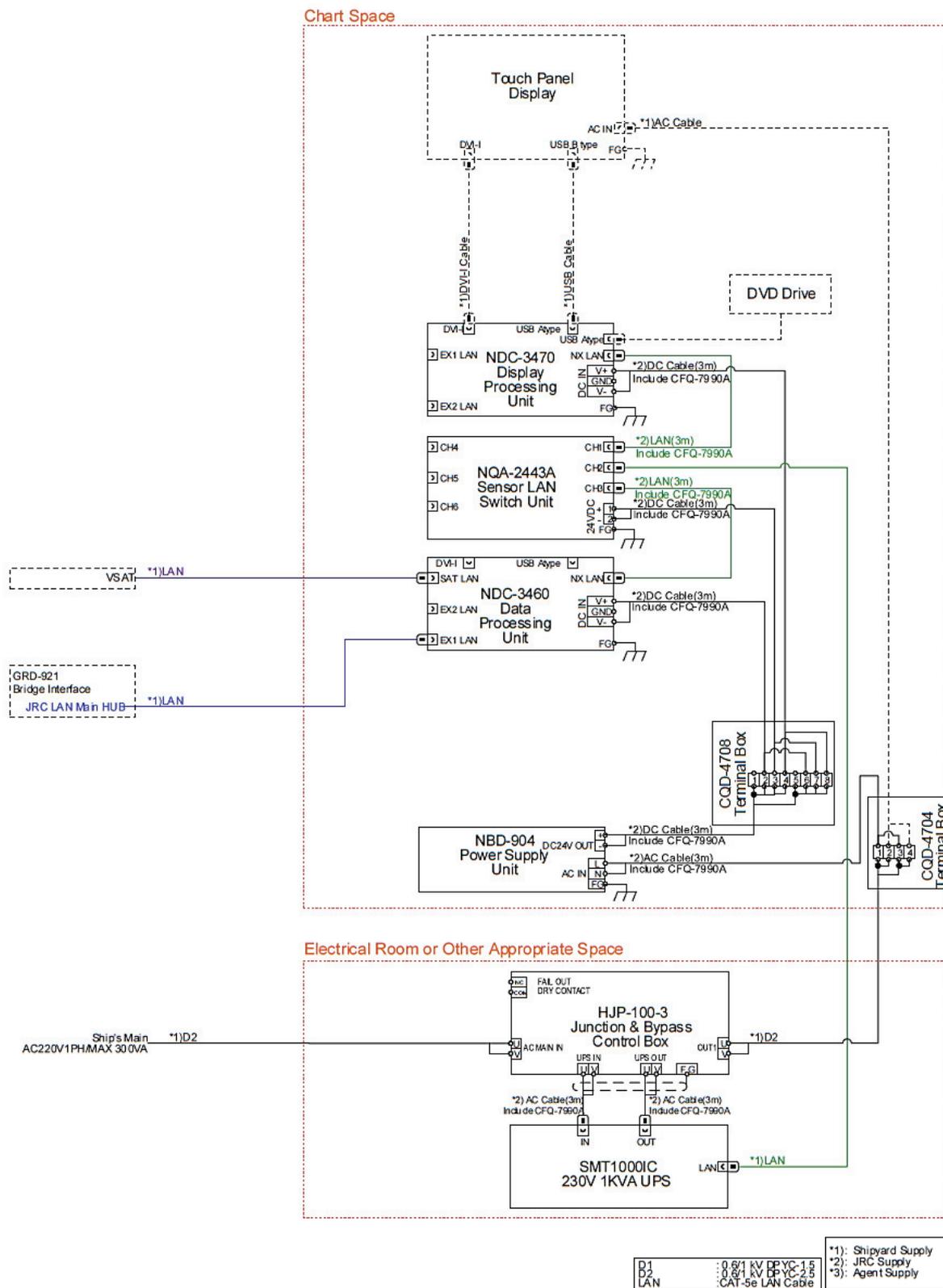


Figure 2.6.2e JAN-470A-0ANN (for JRC ECDIS) connection diagram

2.6.3 Network Connection Diagrams [JRC]

The network connection diagram is shown using the JAN-470A series as an example.

For JRC ECDIS(JAN-9201/7201)&VDR
 • JAN-470A-4ANN/2ANN/0ANN

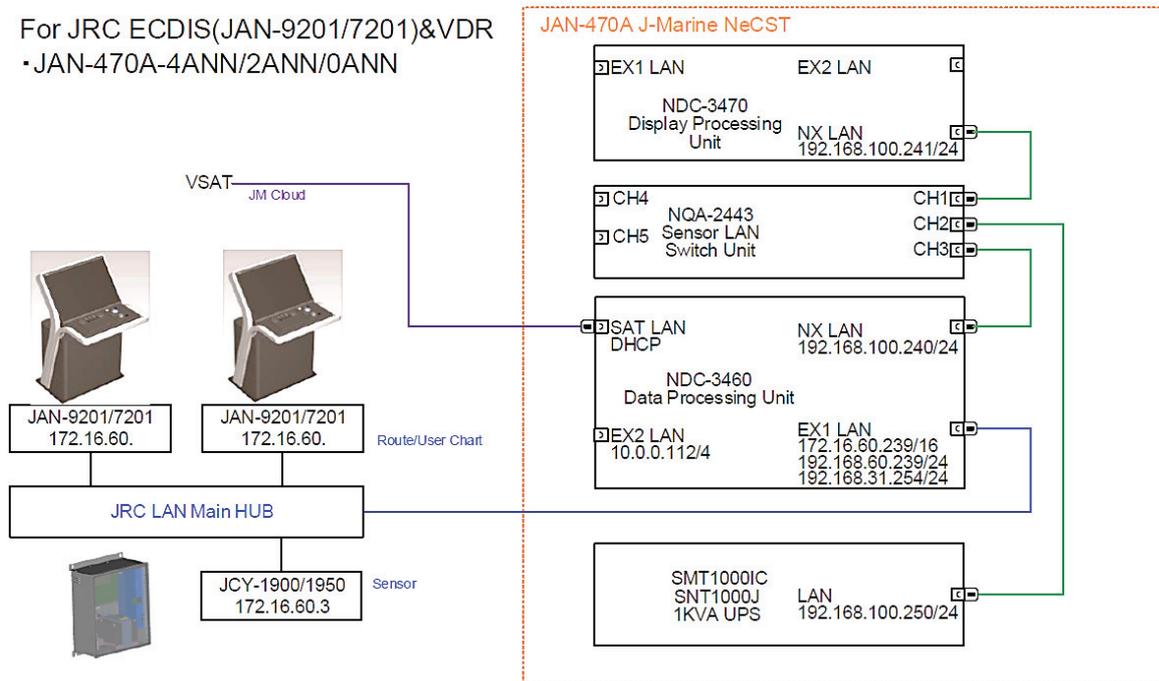


Figure 2.6.3a For JRC ECDIS (JAN-9201/7201) & VDR Network connection diagram

For JRC ECDIS(JAN-901B/701B)&VDR
 • JAN-470A-4ANN/2ANN/0ANN

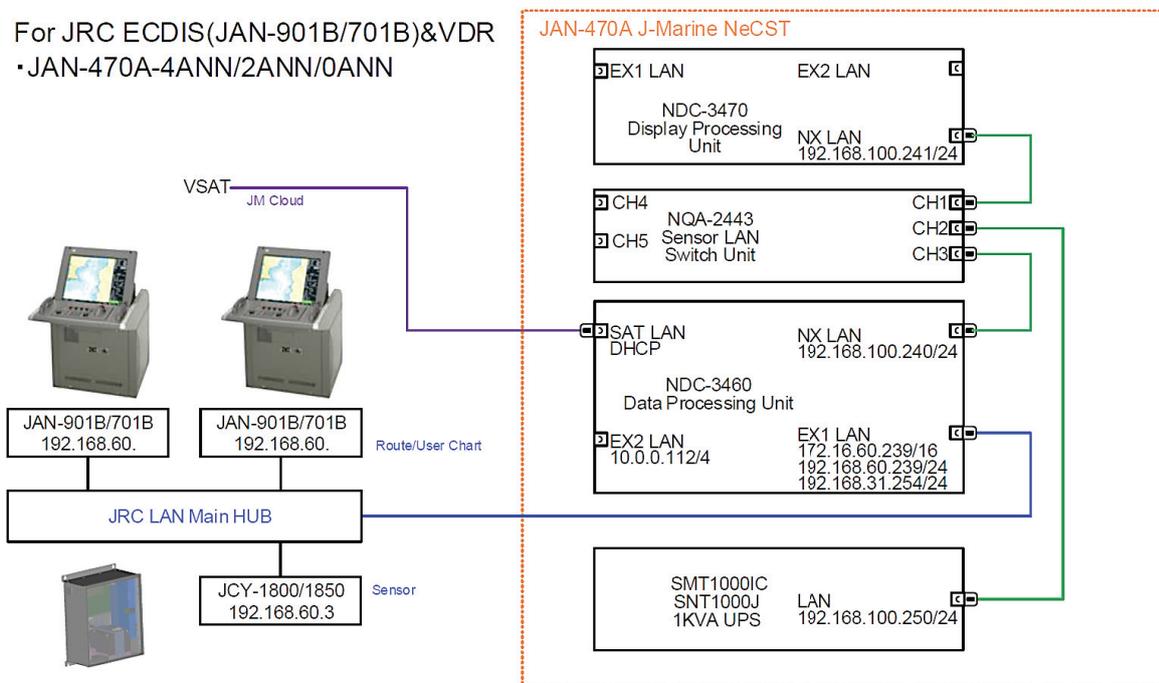


Figure 2.6.3b For JRC ECDIS (JAN-901B/701B) & VDR Network connection diagram

For JRC ECDIS(JAN-9201/7201)&
Other VDR
•JAN-470A-4ANN/2ANN/0ANN

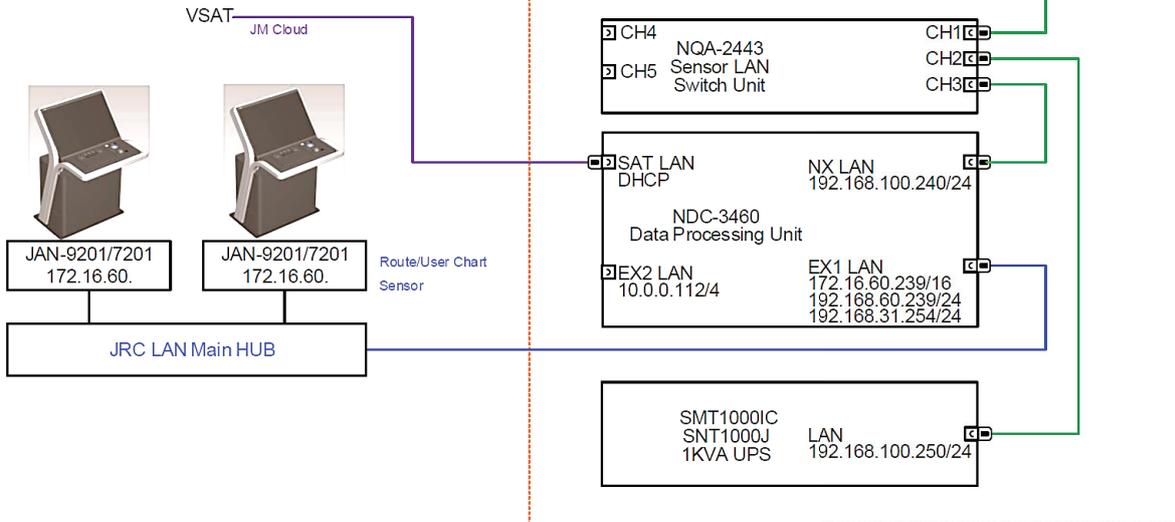


Figure 2.6.3c For JRC ECDIS(JAN-9201/7201) & Other VDR Network connection diagram

For Other VDR or none VDR
•JAN-470A-4ANN/2ANN/0ANN

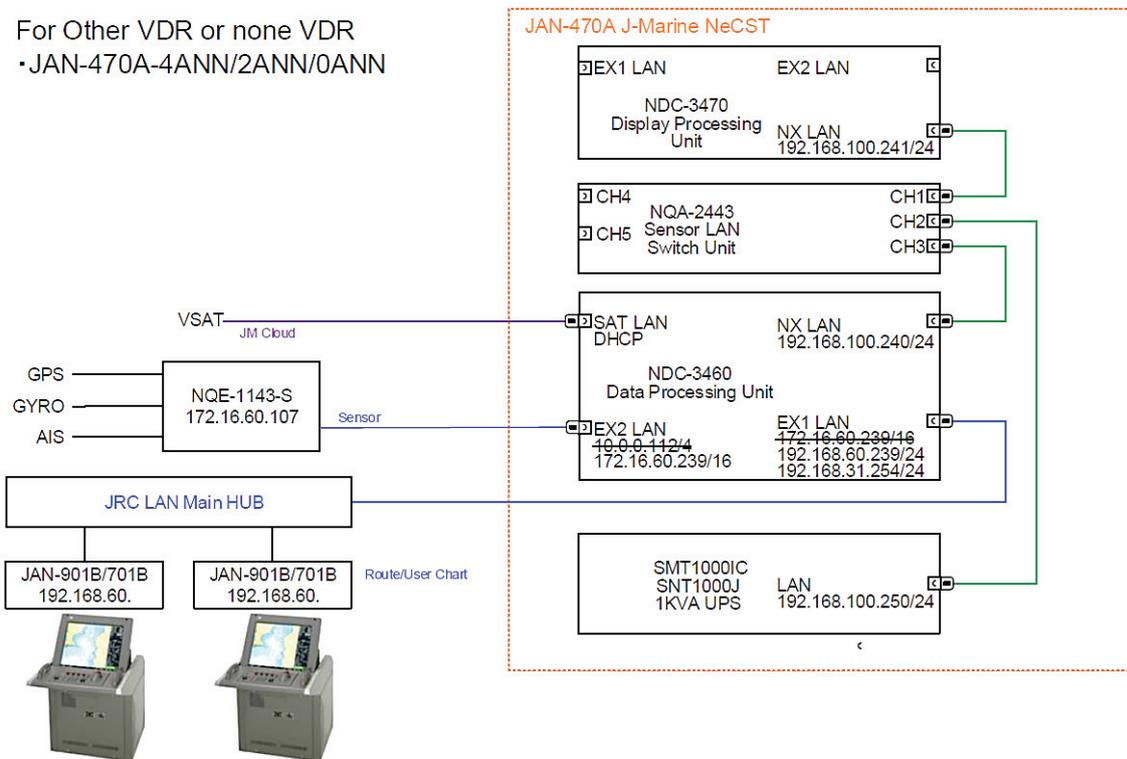


Figure 2.6.3d Other VDR or None VDR Network connection diagram

Equipped with GateWayBox, Web Camera and PoE HUB. It is a configuration to acquire Offline Weather data directly via the satellite communication network.

For JRC ECDIS(JAN-9201/7201)&VDR
 •JAN-470A-9ANN

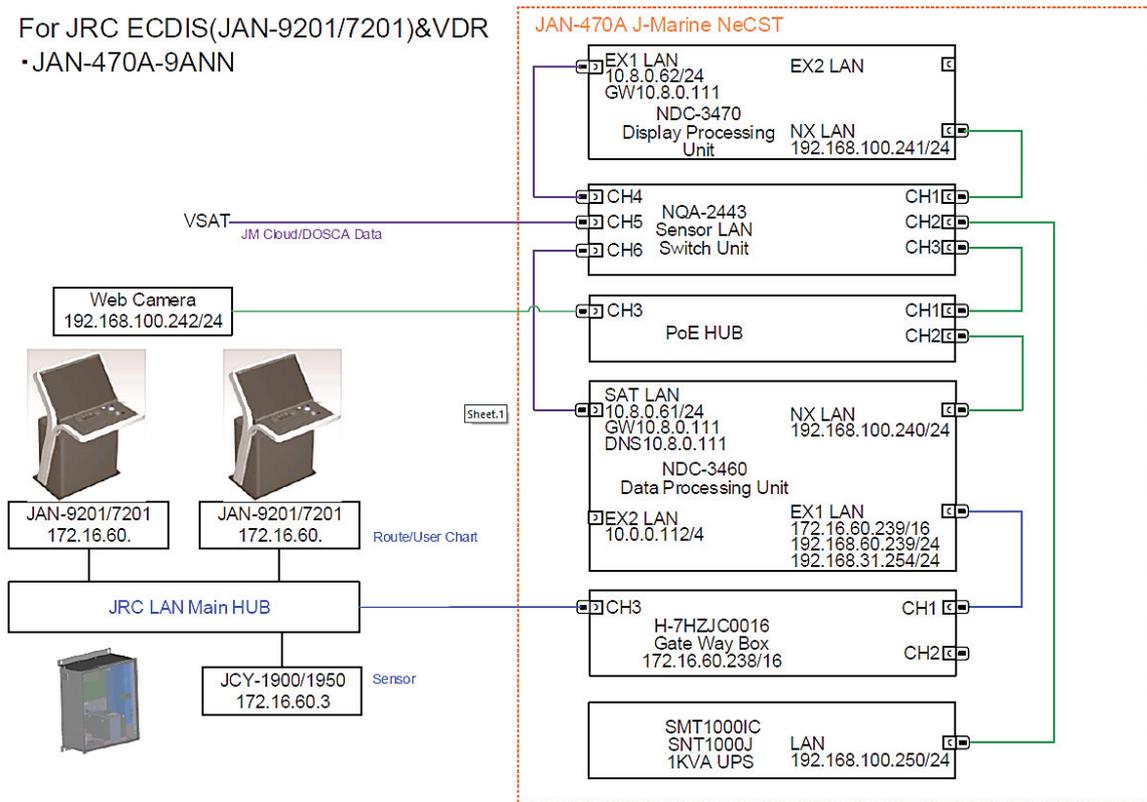
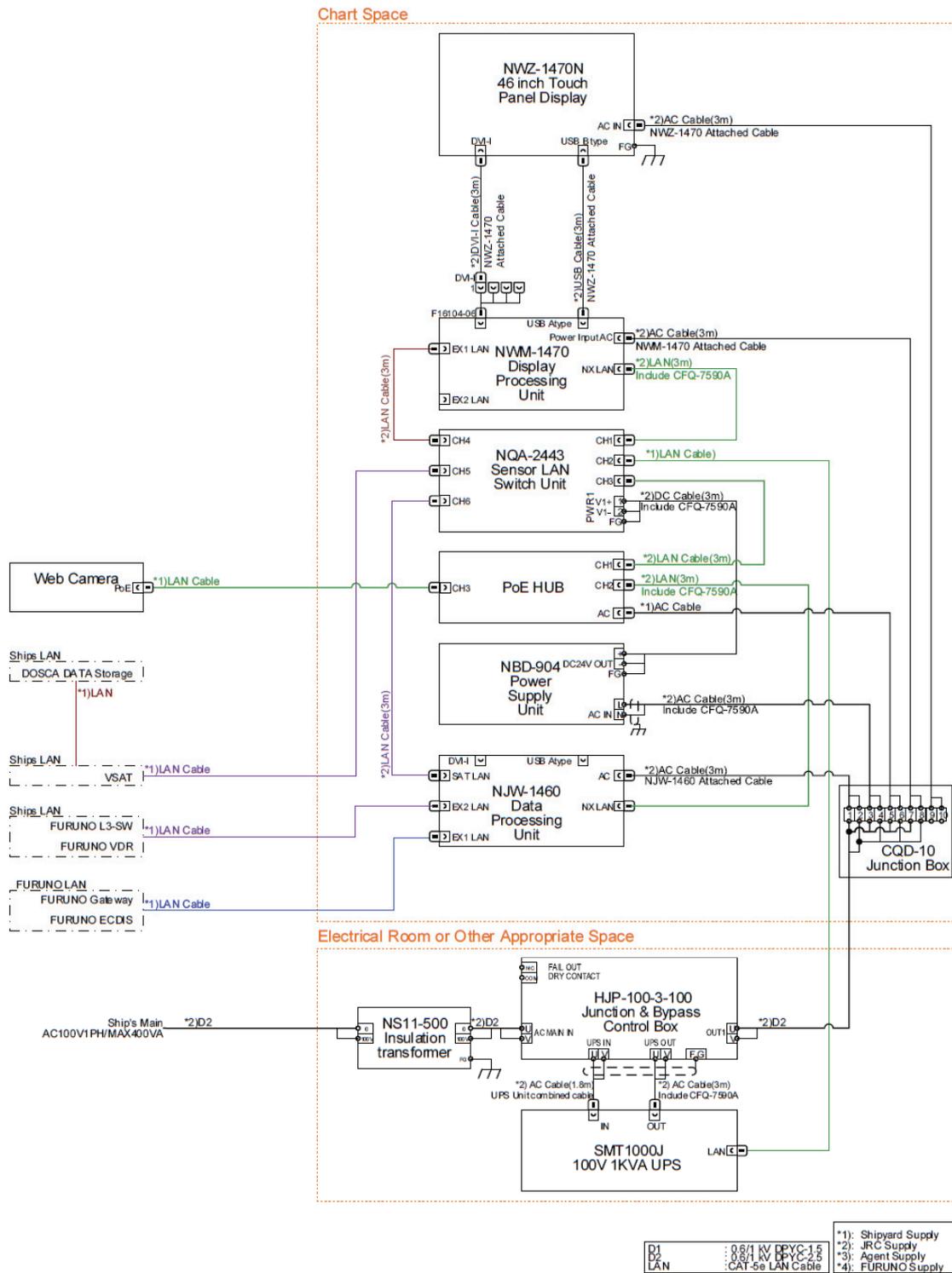


Figure 2.6.3e For JRC ECDIS (JAN-9201/7201) & VDR Network connection diagram

2.6.4 Connection Diagrams [FURUNO] [JAN-470]

FURUNO ECDIS & VDR [For 100V configuration] [Option included configuration] [JAN-470]



Memo

Option:

- Offline Weather data is acquired directly via the satellite communication network.
- Equipped with a Web Camera and PoE HUB to acquire images for the Playback function.
(Note) Web Camera and PoE HUB are arranged by the customer.

Figure 2.6.4a JAN-470-9ANN/4ANN (for FURUNO ECDIS) connection diagram

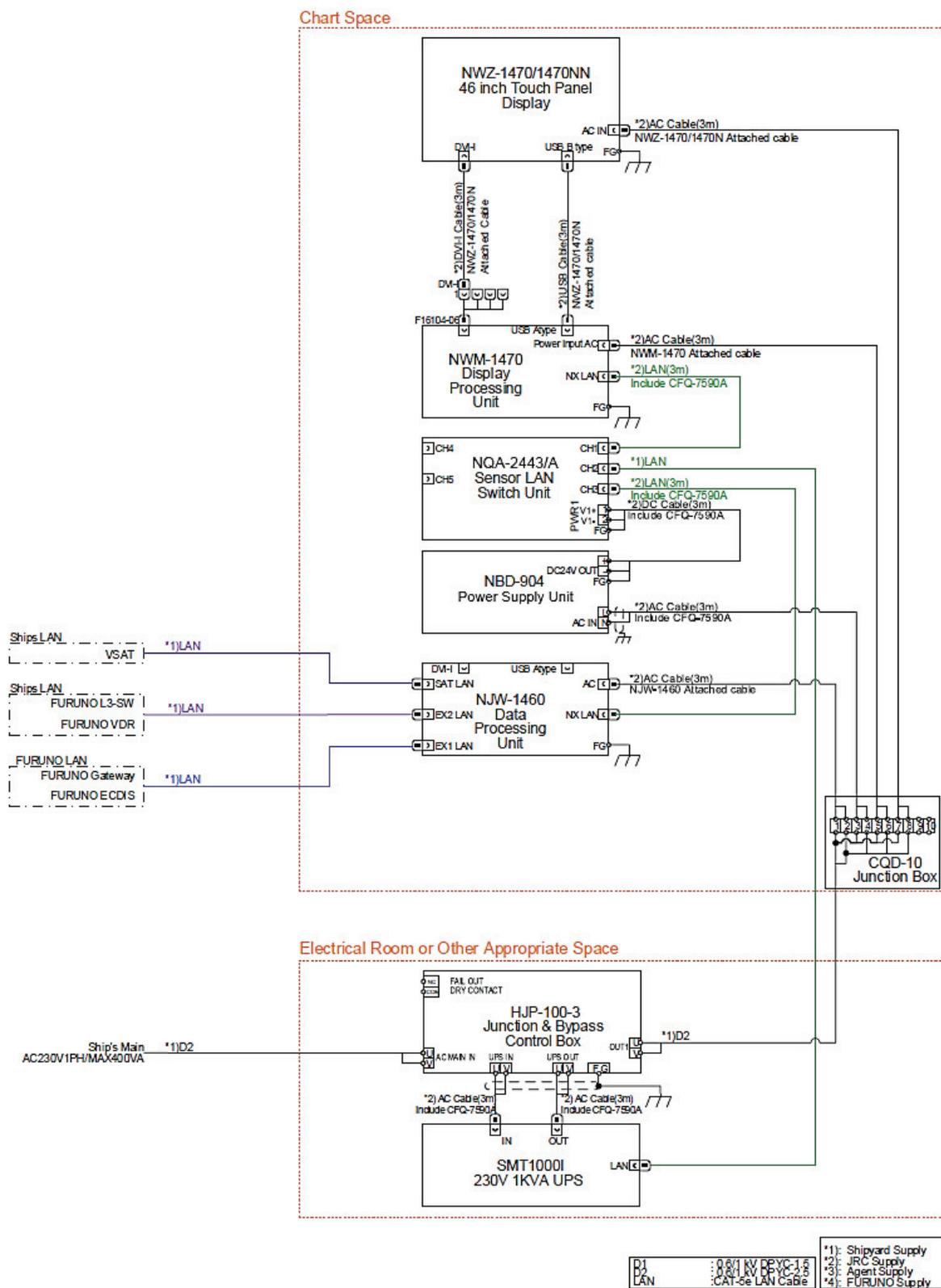


Figure 2.6.4b JAN-470-9ANN/4ANN (for FURUNO ECDIS) connection diagram

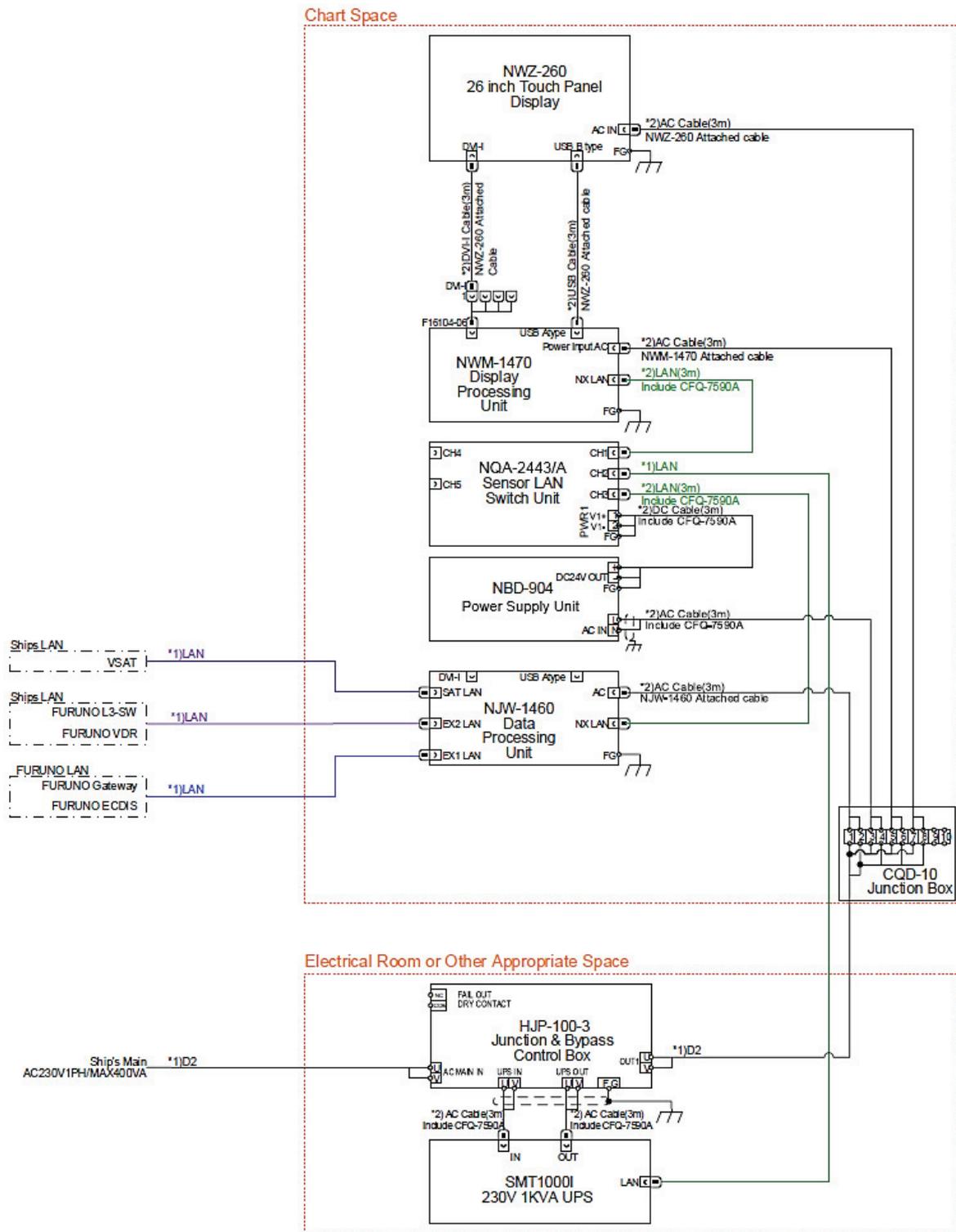


Figure 2.6.4c JAN-470-2ANN (for FURUNO ECDIS) connection diagram

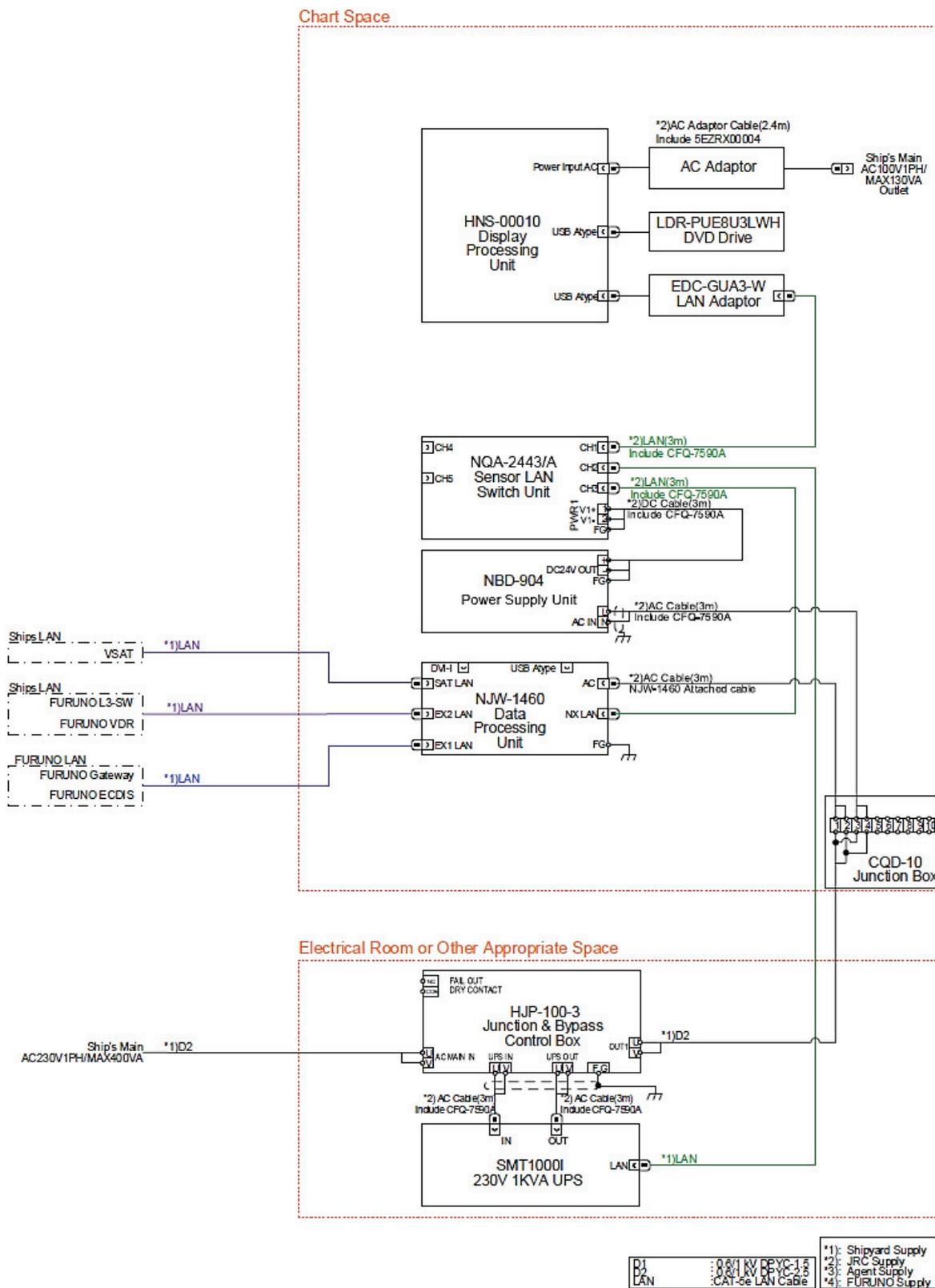


Figure 2.6.4d JAN-470-1PNN (for FURUNO ECDIS) connection diagram

FURUNO ECDIS & VDR [For 230V configuration] [JAN-470]

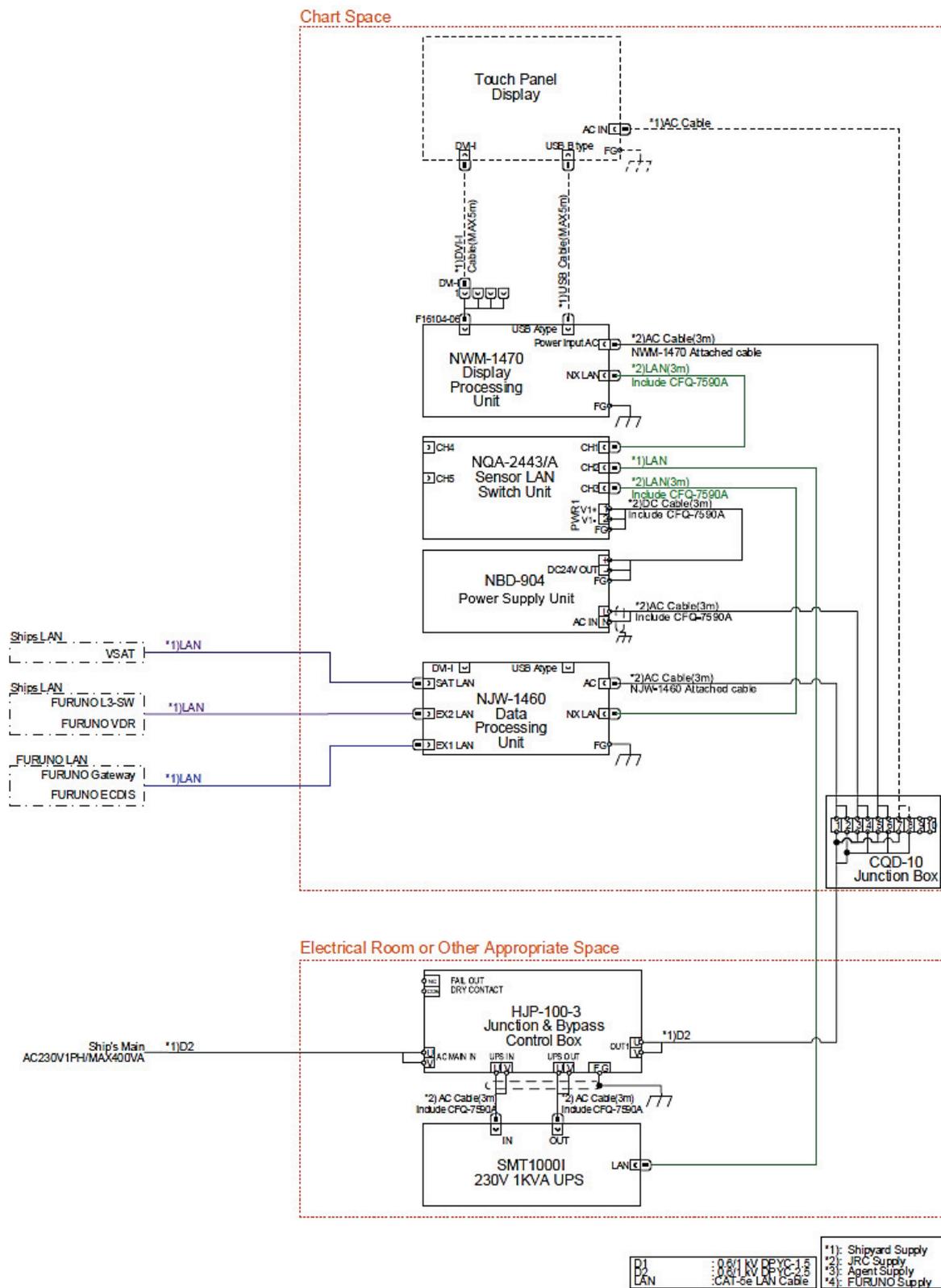
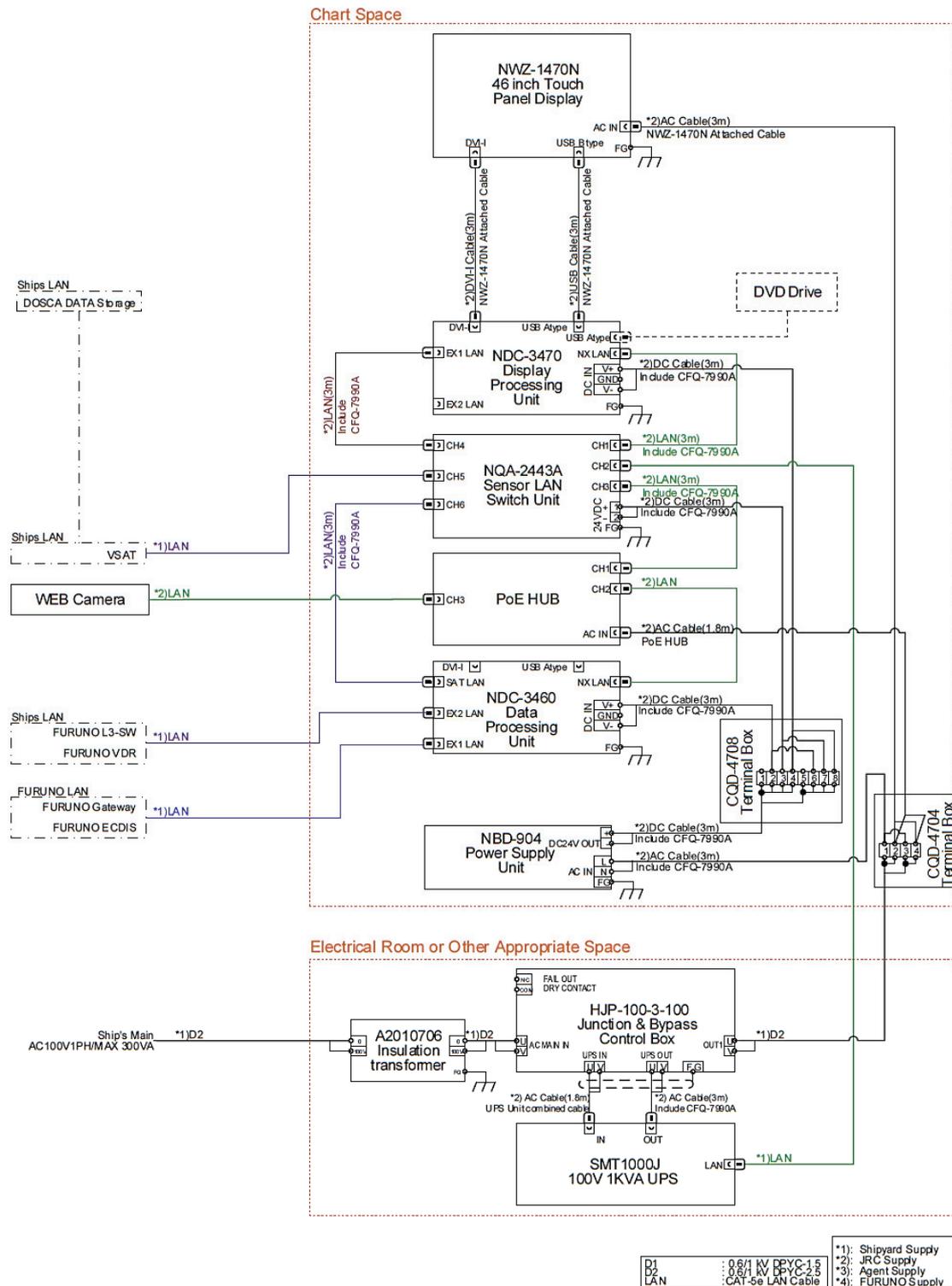


Figure 2.6.4e JAN-470-0ANN (for FURUNO ECDIS) connection diagram

2.6.5 Connection Diagrams [FURUNO] [JAN-470A]

FURUNO ECDIS & VDR [For 100V configuration] [Option included configuration] [JAN-470A]



Memo

Option:

- Offline Weather data is acquired directly via the satellite communication network.
- Equipped with a Web Camera and PoE HUB to acquire images for the Playback function.
Note) Web Camera and PoE HUB are arranged by the customer.

Figure 2.6.5a JAN-470A-9ANN (for FURUNO ECDIS) connection diagram

FURUNO ECDIS & VDR [For 230V configuration] [JAN-470A]

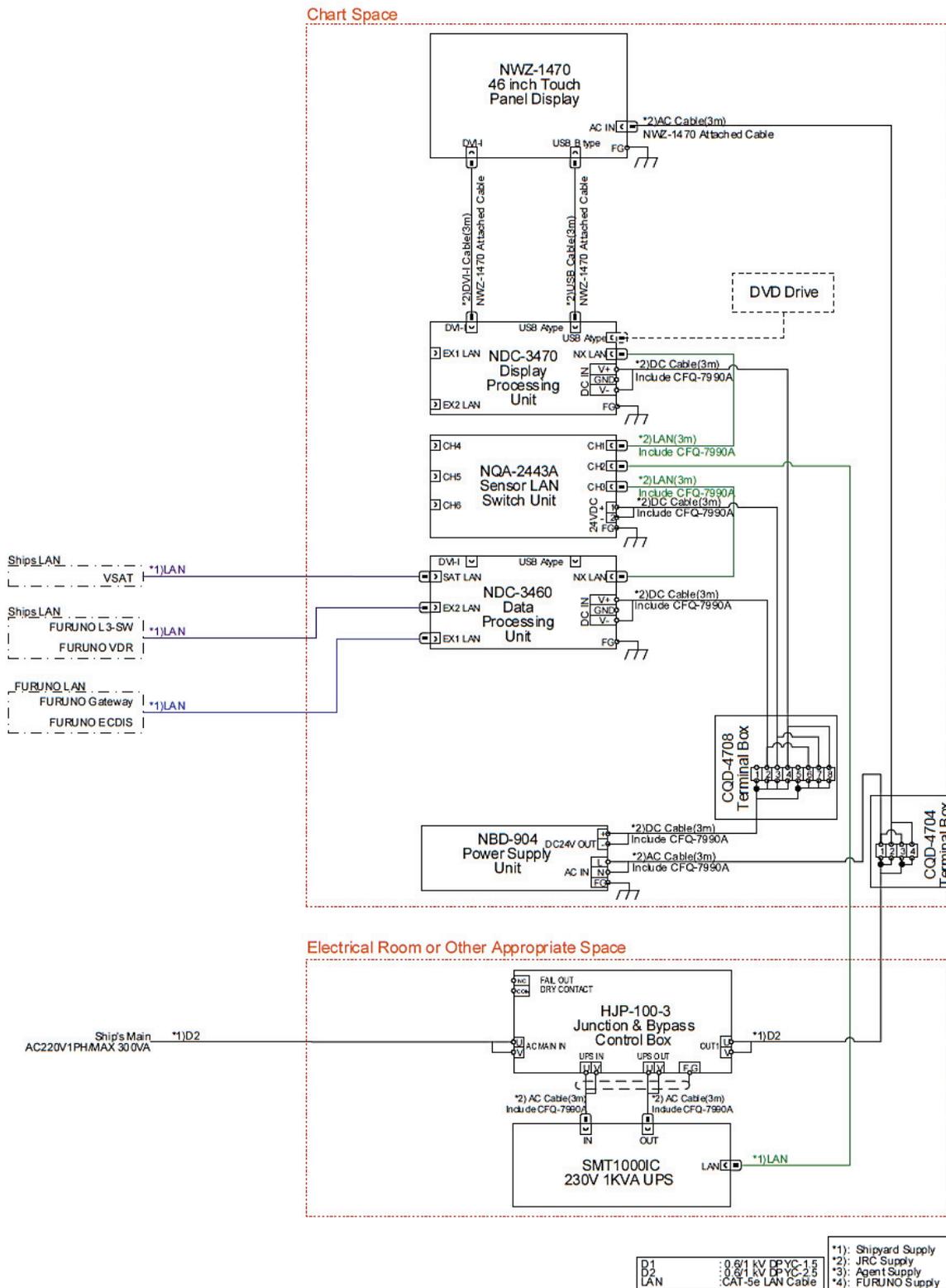


Figure 2.6.5b JAN-470A-4ANN (for FURUNO ECDIS) connection diagram

2.6.6 Network Connection Diagram [FURUNO]

The network connection diagram is shown using the JAN-470A series as an example.

For FURUNO ECDIS(FMD3000S)&
VDR (VR3000/7000)
•JAN-470A-9ANN

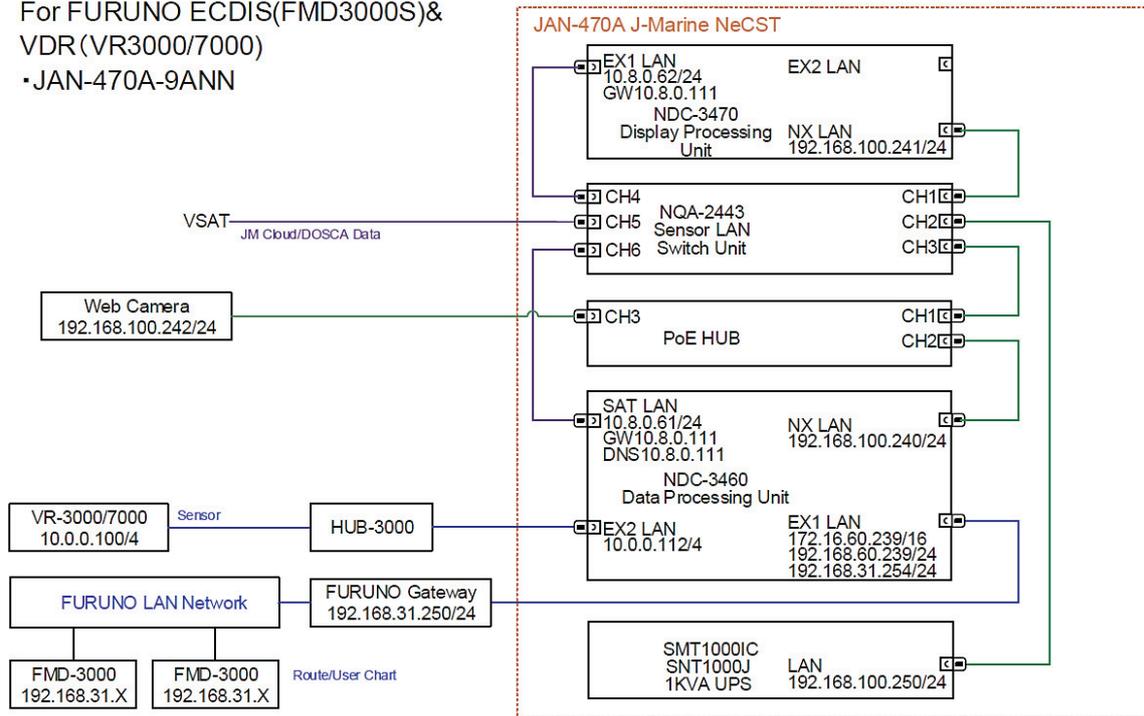


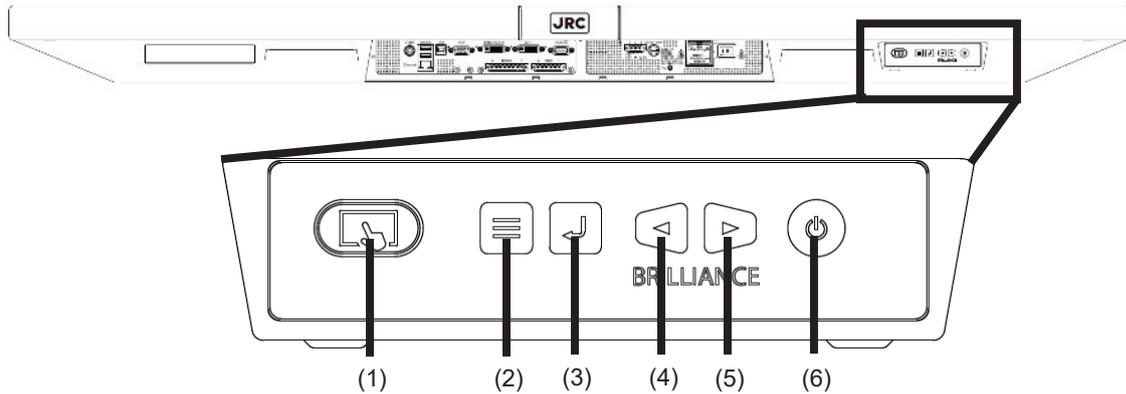
Figure 2.6.6 FURUNO ECDIS & VDR Network connection diagram

Section 3 Basic Operations

3.1 Name and Function of Each Unit

3.1.1 Touch Panel Display Unit

3.1.1.1 46 Inch Touch Panel Display Unit (NWZ-1470/1470N)

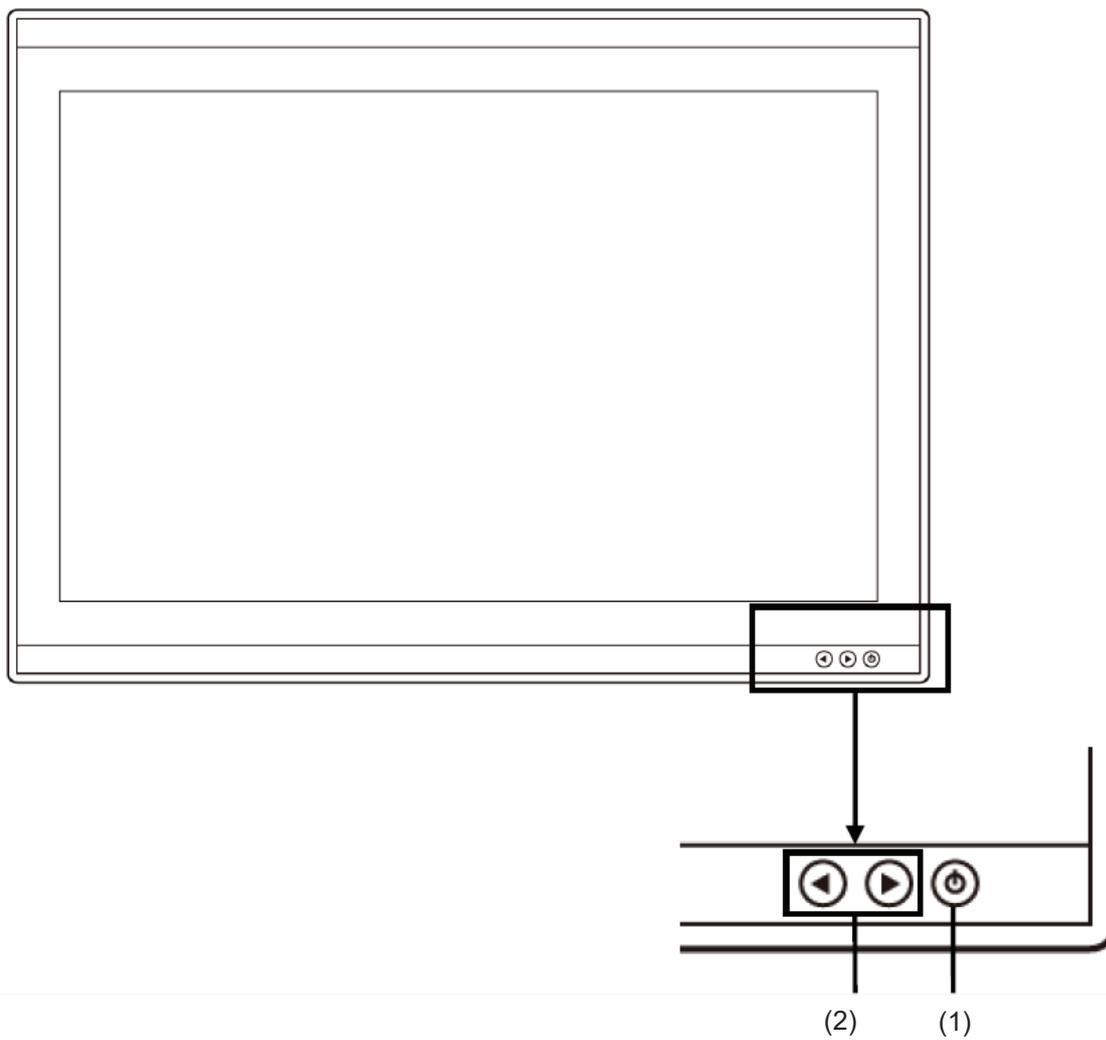


No.	Button	Function outline
1		To switch touch panel operation to Enabled/Disabled. When touch panel operation is enabled, the button lights in blue.
2		To display the adjustment menu of the touch panel display unit or cancel the adjustment/setting of the touch panel display unit.
3		To display the input signal name, determine the adjustment items of the touch panel display unit, or save the adjustment results.
4		To decrease the screen brightness, or to select an adjustment item of the touch panel display unit.
5		To increase the screen brightness, or to select an adjustment item of the touch panel display unit.
6		To switch ON/OFF the power. To turn OFF the power, press the button for 5 seconds or longer. After a progress bar is displayed on the screen, the power turns OFF.

Memo

Adjust the brightness of the screen to the extent it is not dazzling, taking into account the brightness of the surroundings.
Be careful in the nighttime brightness adjustment because nighttime brightness adjustment may hinder the visibility of information.

3.1.1.2 26 Inch Touch Panel Display Unit (NWZ-260)



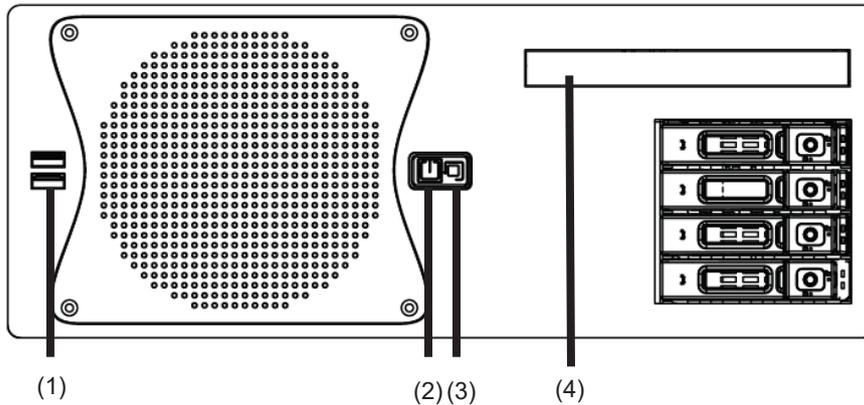
No.	Button	Function outline
1		When the Power button is pressed while the power of the display unit is turned off, the power is turned on. To turn off the power of the display unit, press the Power button for 5 seconds or longer.
2		The screen decreases brightness by pressing the button.
3		The screen increases brightness by pressing the button.

Memo

Adjust the brightness of the screen to the extent it is not dazzling, taking into account the brightness of the surroundings.
Be careful in the nighttime brightness adjustment because nighttime brightness adjustment may hinder the visibility of information.

3.1.2 Display Processing Unit

3.1.2.1 Display Processing Unit (NWM-1470)

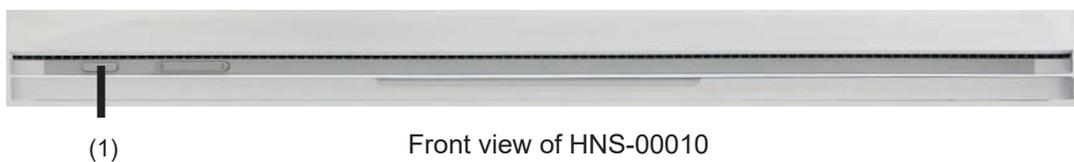


No.	Name	Terminal	Function outline
1	USB terminal		To connect to a USB memory. Two ports are available.
2	Power Button		To turn ON the power of the display processing unit
3	Reset Button		If a software error that is difficult to recover occurs, pressing the Reset Button resets the unit. Resetting may cause damage to files or the OS. To safely reboot the unit, reboot from Windows or with the Power Button if possible.
4	Media Drive	-	To read/write data from/to CD/DVD

Note

Pressing the Reset Button may cause damage to files or the OS.
Unless the software is difficult to recover, do not press the Reset Button.

3.1.2.2 Display Processing Unit (HNS-00010)



No.	Name	Terminal	Function outline
1	Power button		To turn ON the power of the display processing unit

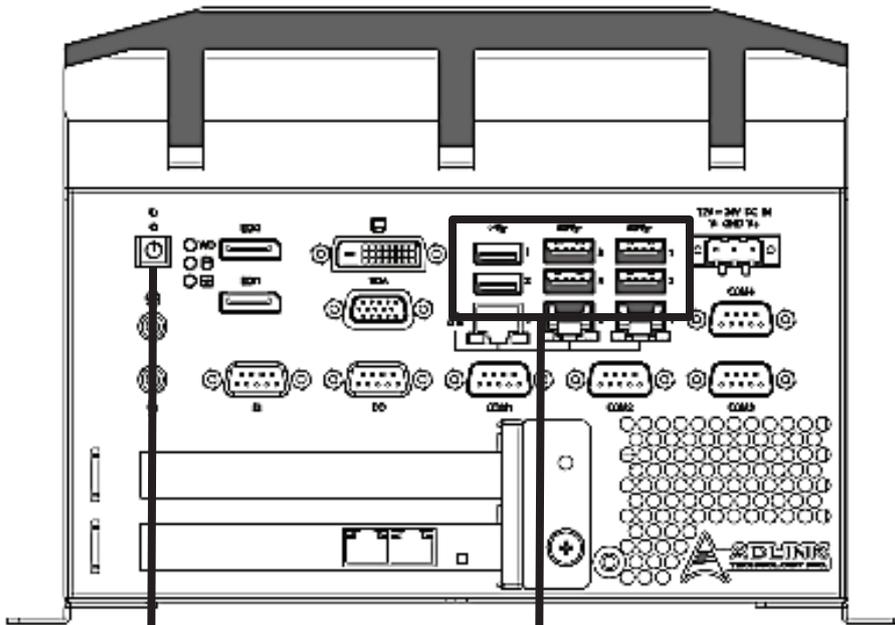


Side view of HNS-00010

(2)

No.	Name	Terminal	Function outline
2	USB terminal		To connect to a USB device. Two ports are available. Connect the LAN adapter, DVD drive.

3.1.2.3 Display Processing Unit (NDC-3470)



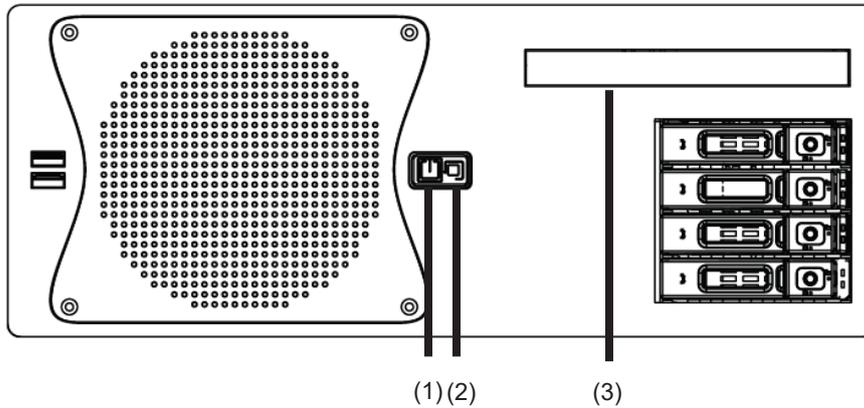
(1)

(2)

No.	Name	Terminal	Function outline
1	Power Button		To turn ON the power of the display processing unit
2	USB terminal		To connect to a USB device. 6 ports are available. Connect the DVD drive.

3.1.3 Data Processing Unit

3.1.3.1 Data Processing Unit (NJW-1460)

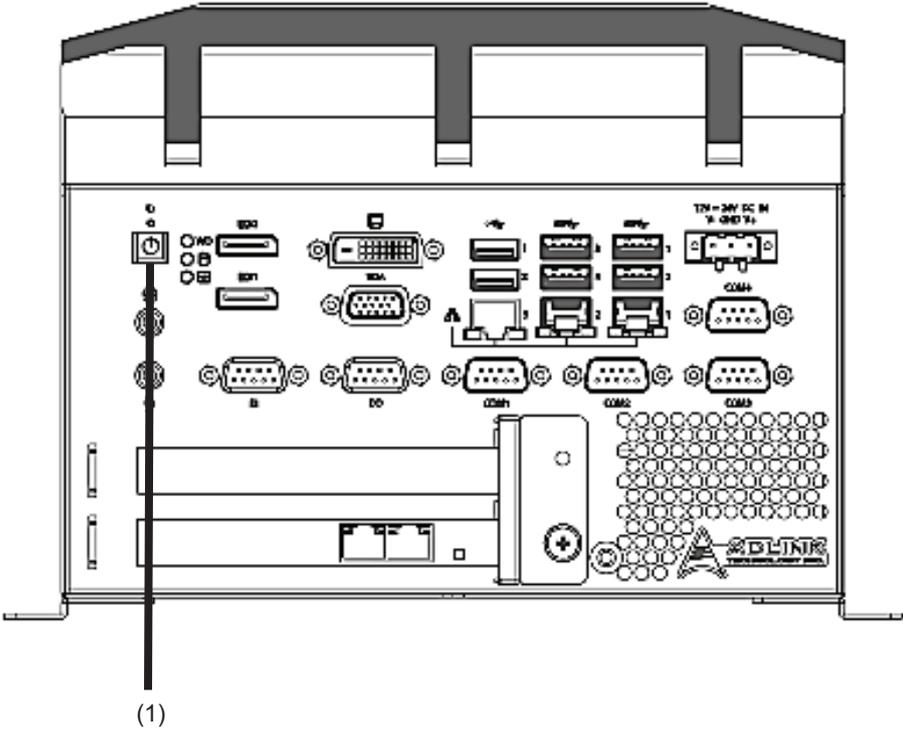


No.	Name	Terminal	Function outline
1	Power Button		To turn ON/OFF the power of the data processing unit To turn ON/OFF the power, short press the button.
2	Reset Button		If a software error that is difficult to recover occurs, pressing the Reset Button resets the unit. Resetting may cause damage to files or the OS. To safely reboot the unit, reboot from Windows or with the Power Button if possible.
3	Media Drive	-	To read/write data from/to CD/DVD

Note

Pressing the Reset Button may cause damage to files or the OS.
Unless the software is difficult to recover, do not press the Reset Button.

3.1.3.2 Data Processing Unit (NDC-3460)



No.	Name	Terminal	Function outline
1	Power Button		To turn ON/OFF the power of the data processing unit To turn ON/OFF the power, short press the button.

3.2 Powering ON and Starting

CAUTION



If the power is turned ON in an incorrect order, the equipment may fail to boot normally.
In that case, turn OFF the power of the equipment, and then turn it ON in the correct order.

To turn ON the power, follow the following steps.

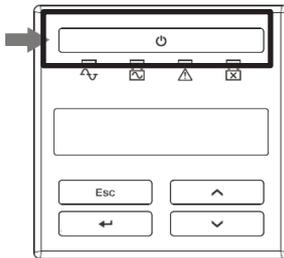
Note

Turn on ECDIS after starting up this equipment.

If ECDIS is started before this equipment, link function may not behave normally.

If equipped with JAN-901B/701B, turn on JAN-901B/701B before starting up this equipment.

1. When equipped with UPS, turn on UPS.

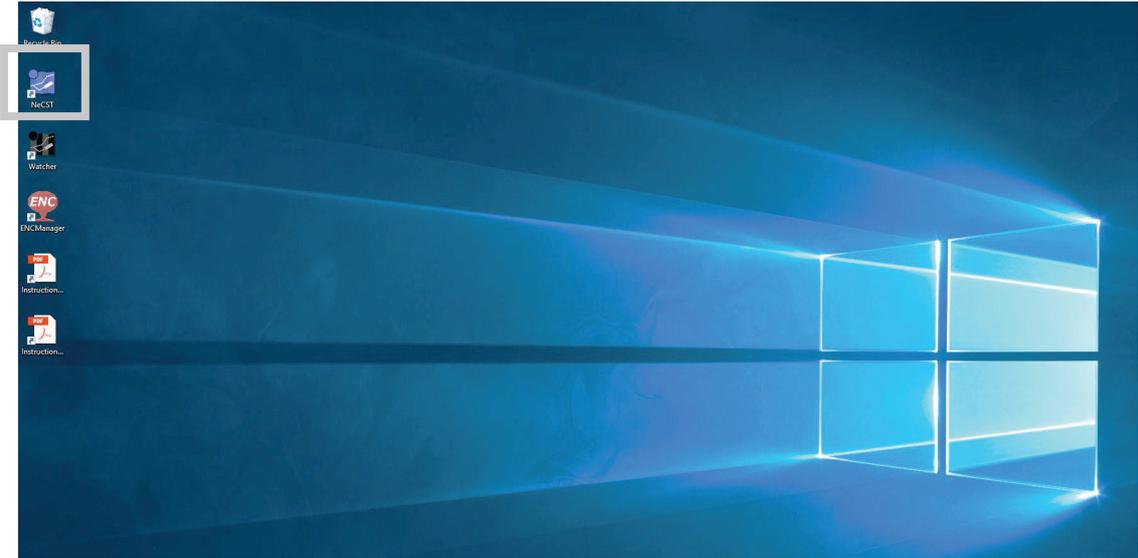


2. For the JAN-470A configuration, turn on the DC OUTPUT switch of the NBD-904.
For the JAN-470 configuration, when equipped with SLC NQE-1143-S(CMH-2370) or sensor LAN switch unit NQA-2443/A, turn on the NBD-904 DC OUTPUT switch.



3. Press the power button of the data processing unit.
Perform preheat for 3 minutes or longer after turning ON the power.
Otherwise, the server may not operate normally.
4. Press the power button of the touch panel display unit.

5. Press the power button of the display processing unit.
Windows starts. Then, double tap the NeCST icon.



The NeCST app starts.

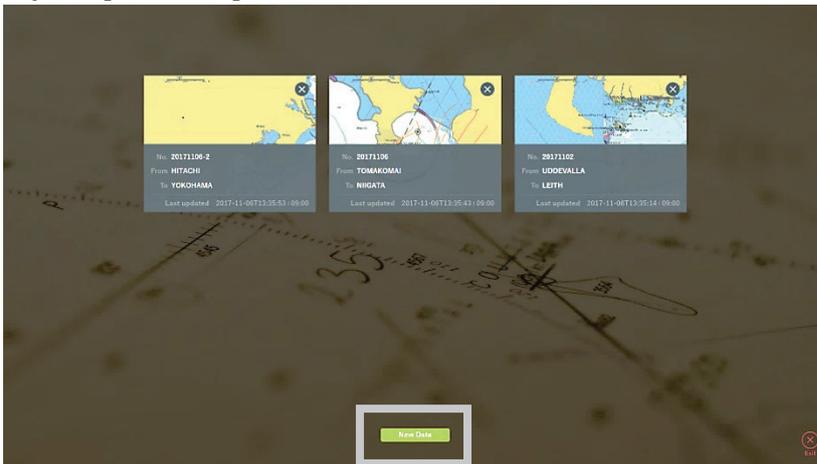
3.3 Setting Voyage Data

Set the departure/entry port information as a part of voyage data.
The port information is selectable from the port information list in the DB.

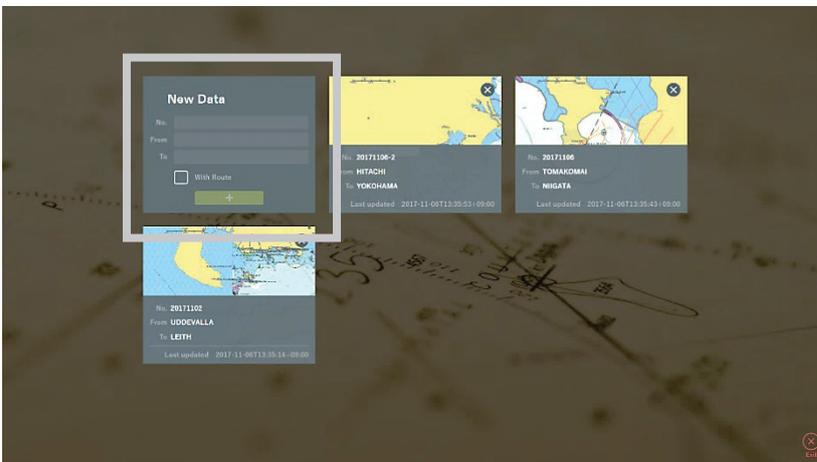
3.3.1 Creating New Voyage Data

To create new voyage data, perform the following operations.

1. Tap the [New Data] button.



The creation screen of new voyage data is displayed.



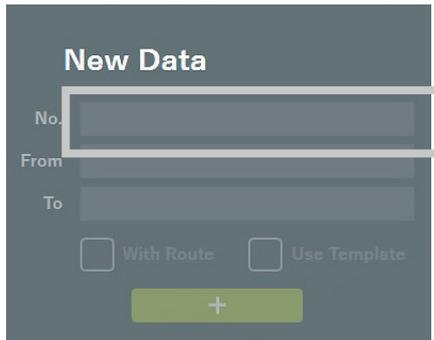
Memo

Up to 50 voyage data items can be created.

2. Enter the No.

Tapping “No.” displays a software keyboard.

To manage voyage data, enter specific letters or numbers.

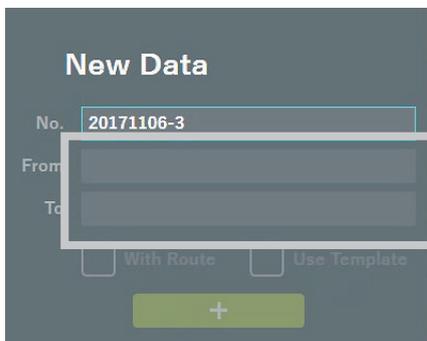


The screenshot shows a dark-themed 'New Data' form. The 'No.' field is highlighted with a white border. Below it are 'From' and 'To' fields. At the bottom, there are two checkboxes: 'With Route' and 'Use Template', and a green '+' button.

Memo

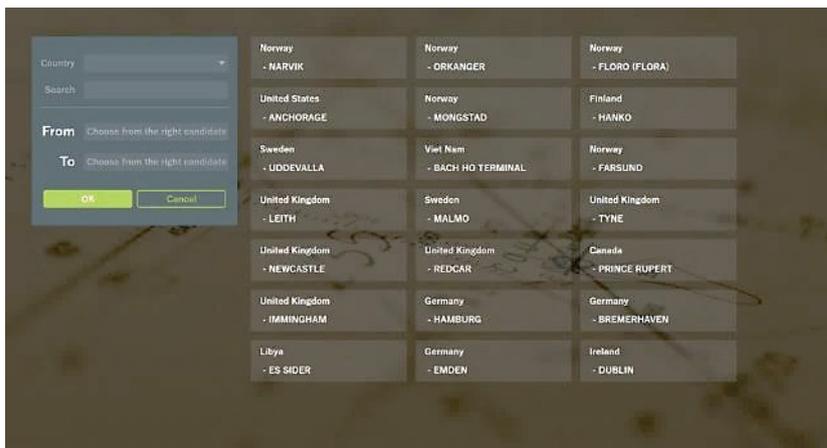
Up to 32 letters can be entered in [No.] of the voyage data.

3. Tap the input box of the departure port (From) or entry port (To).



The screenshot shows the 'New Data' form with the 'No.' field containing '20171106-3'. The 'From' field is highlighted with a white border. The 'To' field is also visible below it. The 'With Route' and 'Use Template' checkboxes and the '+' button are at the bottom.

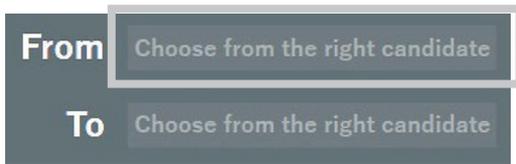
The departure/entry port selection screen is displayed.



The screenshot shows a port selection screen. On the left, there is a sidebar with 'Country' and 'Search' fields, and 'From' and 'To' dropdowns. The main area displays a grid of port options with their respective countries.

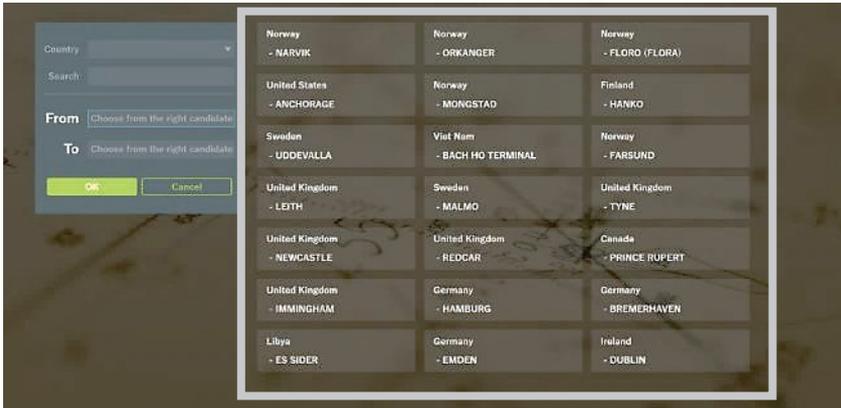
Norway	Norway	Norway
- NARVIK	- DRKANGER	- FLORO (FLORA)
United States	Norway	Finland
- ANCHORAGE	- MONGSTAD	- HANKO
Sweden	Viet Nam	Norway
- UDDEVALLA	- BACH HO TERMINAL	- FARSUND
United Kingdom	Sweden	United Kingdom
- LEITH	- MALMO	- TYNE
United Kingdom	United Kingdom	Canada
- NEWCASTLE	- REDCAR	- PRINCE RUPERT
United Kingdom	Germany	Germany
- LONDON	- HAMBURG	- BREMERHAVEN
Libya	Germany	Ireland
- ES SIDER	- EMDEN	- DUBLIN

4. Tap [Choose from the right candidate] of From.



[Choose from the right candidate] is then highlighted with a blue border, enabling selection of a departure port.

5. Select a departure port from the port information list.

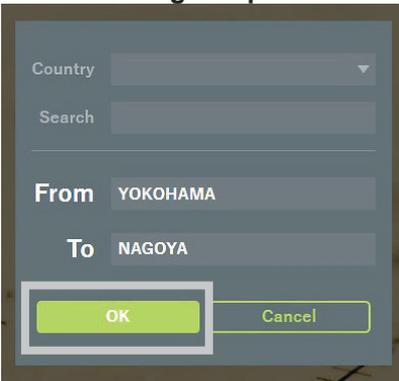


6. Tap [Choose from the right candidate] of To.

[Choose from the right candidate] is then highlighted with a blue border, enabling selection of an entry port.

7. Similarly, select the port of entry from the port information list.

8. After selecting a departure/entry port, tap the [OK] button.



The screen switches to the voyage data selection screen.

Memo

Using the following search functions makes port setting easy.

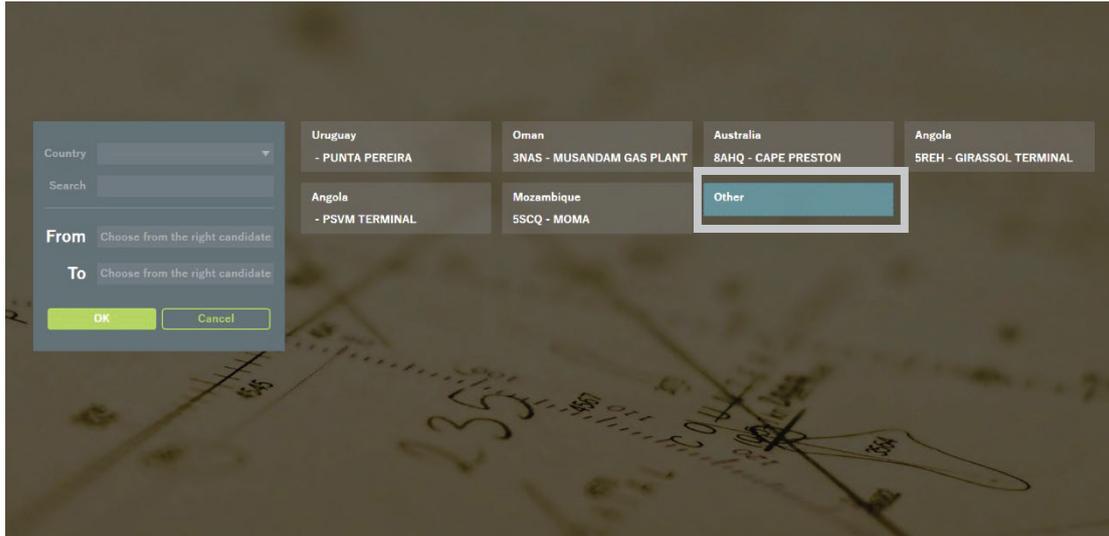
- Selecting a country from the Country combo box displays the information of the ports only in the selected country.
- Entering letters in the Search field enables string search of port information.



Country ▾
Search

In addition, selecting [Other] from the port information list enables direct entry of a departure/entry port.

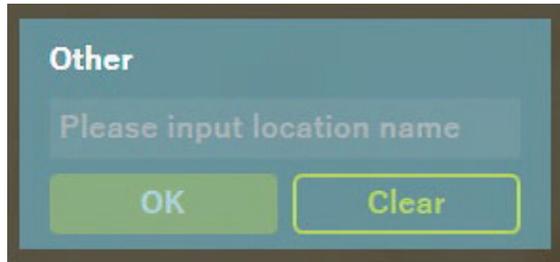
Use this function if the desired port is not in the port information list.



Country ▾
Search
From Choose from the right candidate
To Choose from the right candidate
OK Cancel

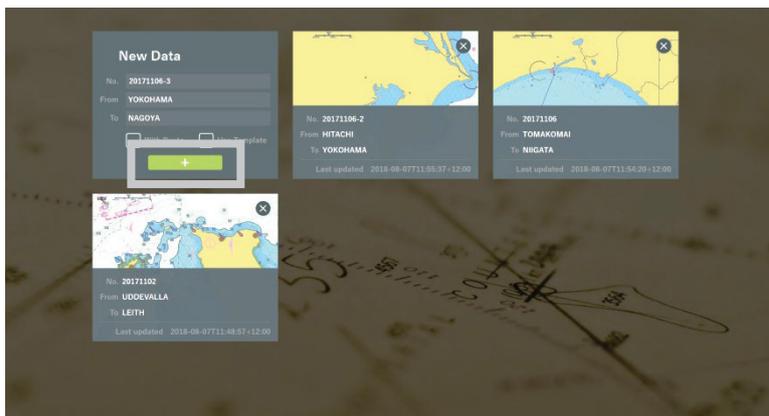
Uruguay - PUNTA PEREIRA	Oman 3NAS - MUSANDAM GAS PLANT	Australia 8AHQ - CAPE PRESTON	Angola 5REH - GIRASSOL TERMINAL
Angola - PSVM TERMINAL	Mozambique 5SCQ - MOMA	Other	

When select [Other], input dialog is displayed.
After input a name of port, tap the [OK] button.



Other
Please input location name
OK Clear

9. Tap the [+] button.



New voyage data is created.

Note

Due to abnormal termination such as blackout, past navigation data may not be displayed. Make a note of the voyage data No. periodically. Disappears data may recover by creating a new navigation data of the same No.



Memo

The checkbox [With Route] offers a function to support route planning.



Creating voyage data with this checkbox checked automatically creates a route indicated by a line drawn between the departure and entry ports. After automatic creation, adjust the route manually.

3.3.2 Creating Voyage Data Using Smart Ship Viewer

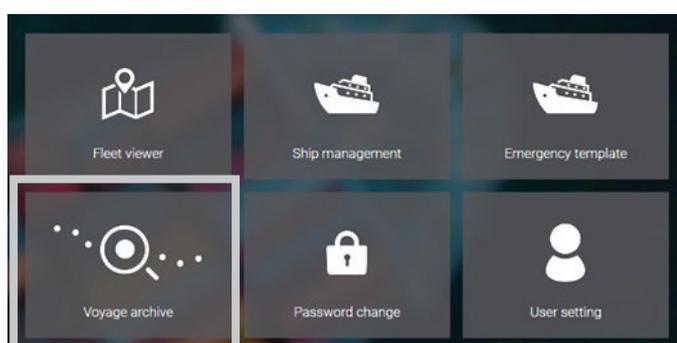
It can be used when the management company has a contract for Smart Ship Viewer.

By checking [Use Template] when creating voyage data, you can import voyage data used in the past by own ship or another ship.

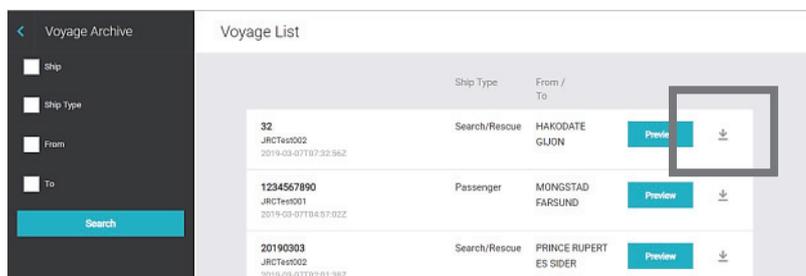
To create voyage data using the voyage data distribution function, refer to "3.3.5 Creating Voyage Data Using the Voyage Data Distribution Function".

1. Access and Login Smart Ship Viewer to download the voyage data.

- How to download the voyage data
 - Access to the below site with PC which is capable connection to internet.
<https://ssv.jmarinecloud.com/>
 - Login the site, and select Voyage archive.



- Click the download button of the voyage data to use.



XXXXXX.necst file will be downloaded.

“XXXXXX” means name of voyage data.

Save the downloaded data to external memory device (USB Memory etc.)

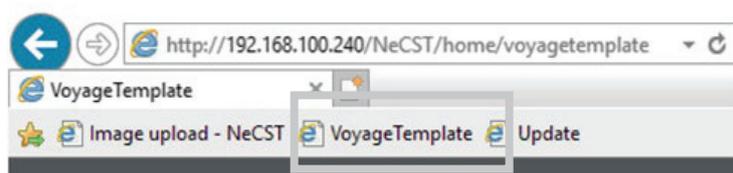
2. Connect external memory device contains downloaded data to display processing unit.

3. Start Internet Explorer in the display processing unit and tap the “VoyageTemplate” icon.

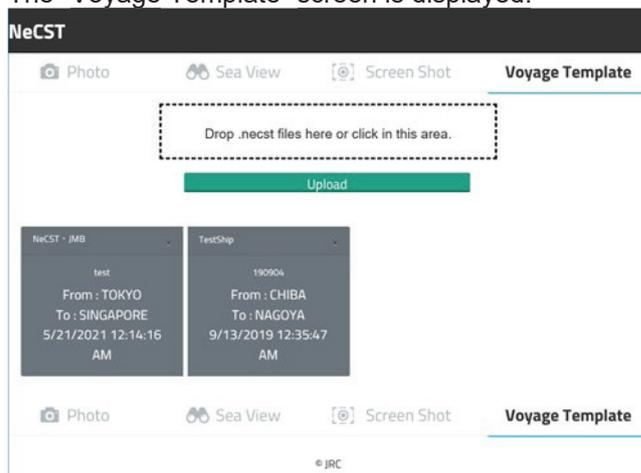
Access to “<http://192.168.XXX.XXX/necst/home/voyagetemplate>”.

In “192.168.XXX.XXX”, the IP address of the data processing unit is set.

The default IP of data processing unit is 192.168.100.240

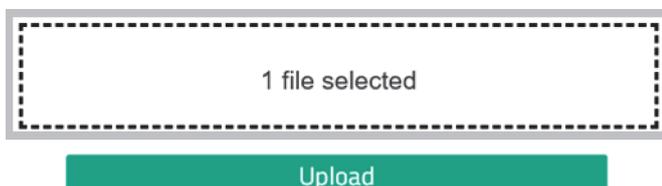


The "Voyage Template" screen is displayed.



4. Uploading the voyage data.

Tap the following area on the browser to select a file.

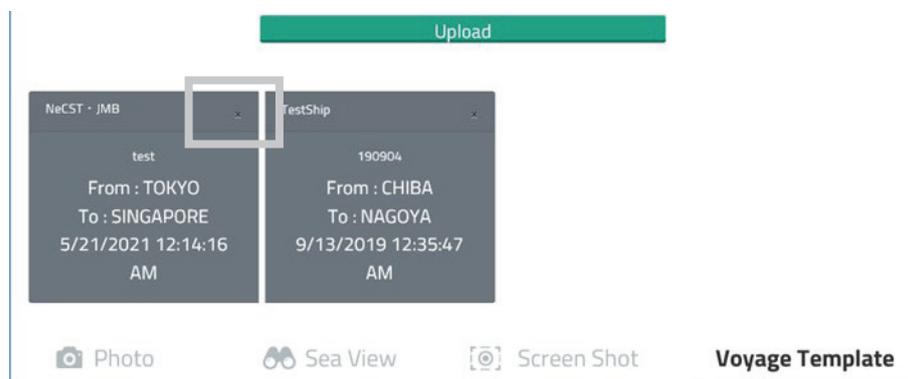


Click "Upload" button.



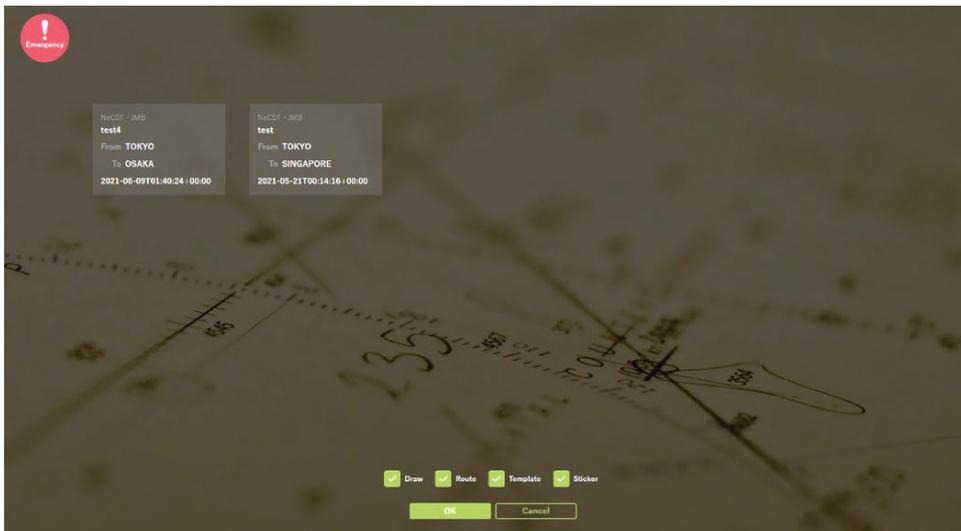
Memo

To delete Data that is inadvertently uploaded or become unnecessary, click "x" button as shown below.



5. Start NeCST app.
6. Tap the [New Data] button on NeCST app.
7. Select and enter departure port (From) or entry port (To) via departure/entry port selection screen.
8. Tap the [Use Template] checkbox.

The Voyage Data list is displayed.
Select the voyage data that you want to use for template.



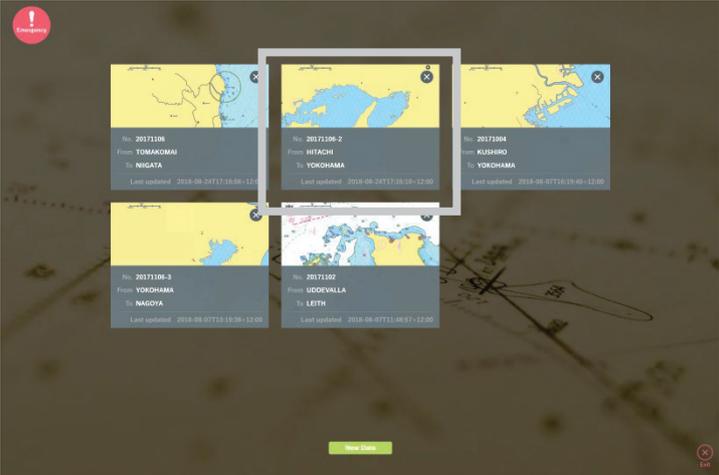
9. Check the box if necessary and tap [OK].
The data that can be imported are Draw, Route, Template, and Sticker data.

Memo

When importing "Route" with Use Template function,
The "Route" which was made with "With Route" function will be deleted.

3.3.3 Selecting Existing Voyage Data

- 1. **Select existing voyage data.**
Previously created voyage data is registered in the DB.
Select voyage data from the list.

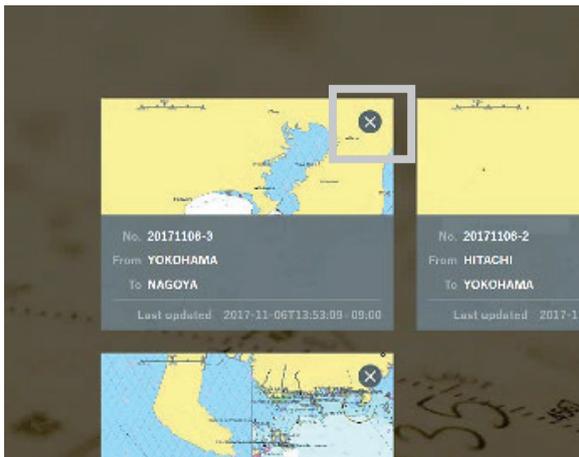


The selected voyage data is displayed.

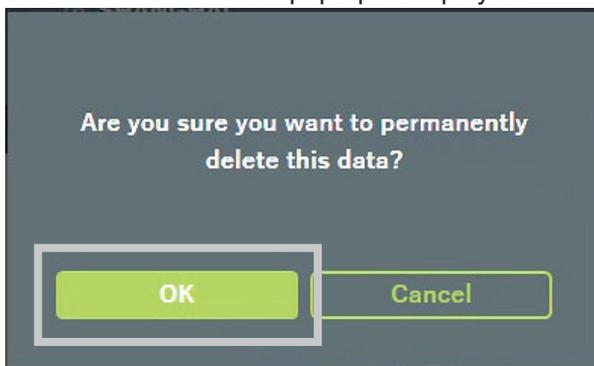


3.3.4 Deleting Voyage Data

1. Tap the [X] icon.



The delete confirmation pop-up is displayed.



2. Tap the [OK] button.
To cancel the import of the route, tap the [Cancel] button.

3.3.5 Creating Voyage Data Using the Voyage Data Distribution Function

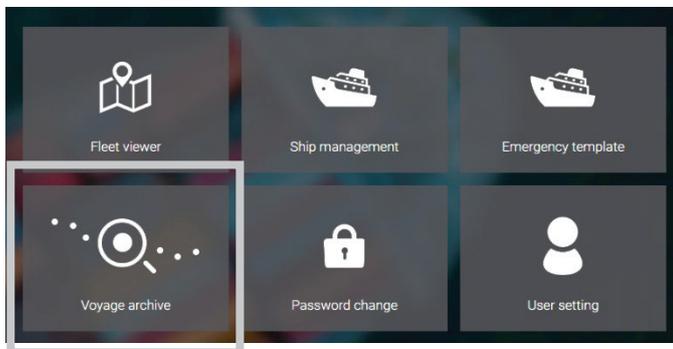
You can create voyage data using the voyage data distribution function. It cannot be used if “Publish voyage to ships” is not checked in the Role setting assigned by Smart Ship Viewer.

Note

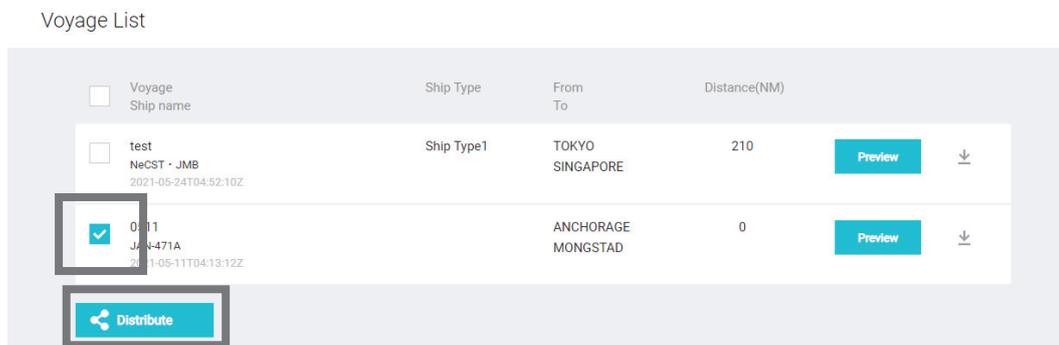
To use the voyage data distribution function, NeCST must be Package Ver.1.2.3.0 or higher.

1. Log in to Smart Ship Viewer and distribute the voyage data to be imported.

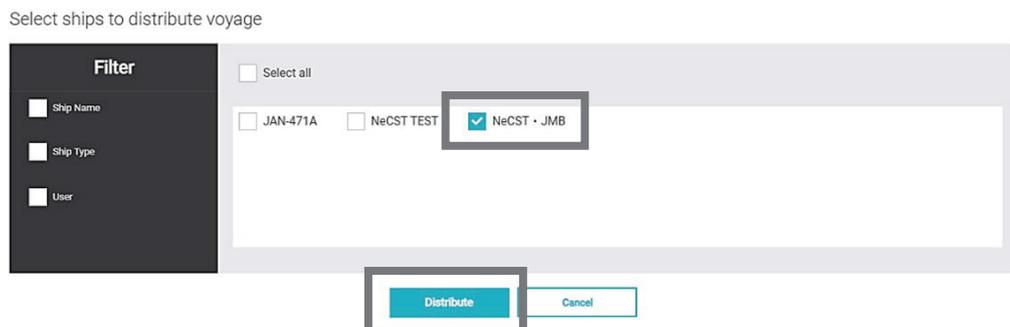
- Voyage data distribution method
 - (1) Access the following site on a PC that can connect to the Internet.
<https://ssv.jmarinecloud.com/>
 - (2) After logging in, select Voyage archive.



- (3) Select the voyage data to be used and click [Distribute].



- (4) Select the managed ship you want to distribute and click [Distribute].



2. Start the NeCST app.

When the voyage data is distributed, a notification will be displayed in the upper right corner of the screen.

Distribution will take a Download interval (SSV setting) time. Distribute with a margin.



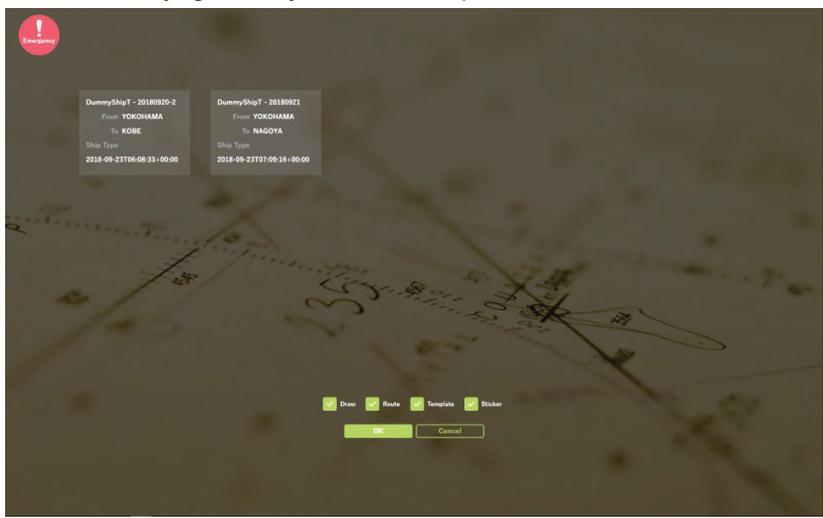
3. Tap [New Data] button.

4. Enter No., From, To.

5. Check Use Template.

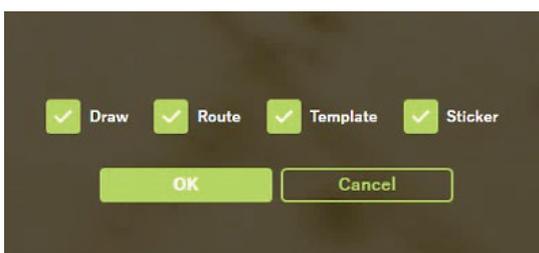


A list of voyage data is displayed. Select the voyage data you want to import.



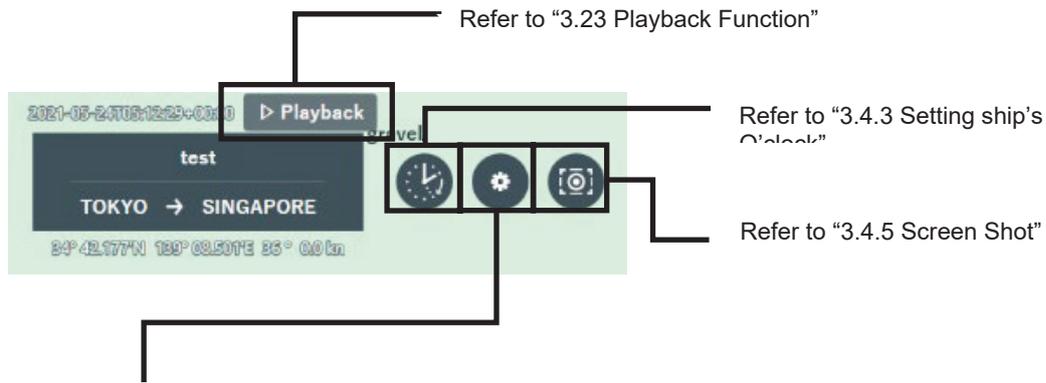
6. Check if necessary and tap [OK].

The data that can be imported are Draw, Route, Template, and Sticker data.

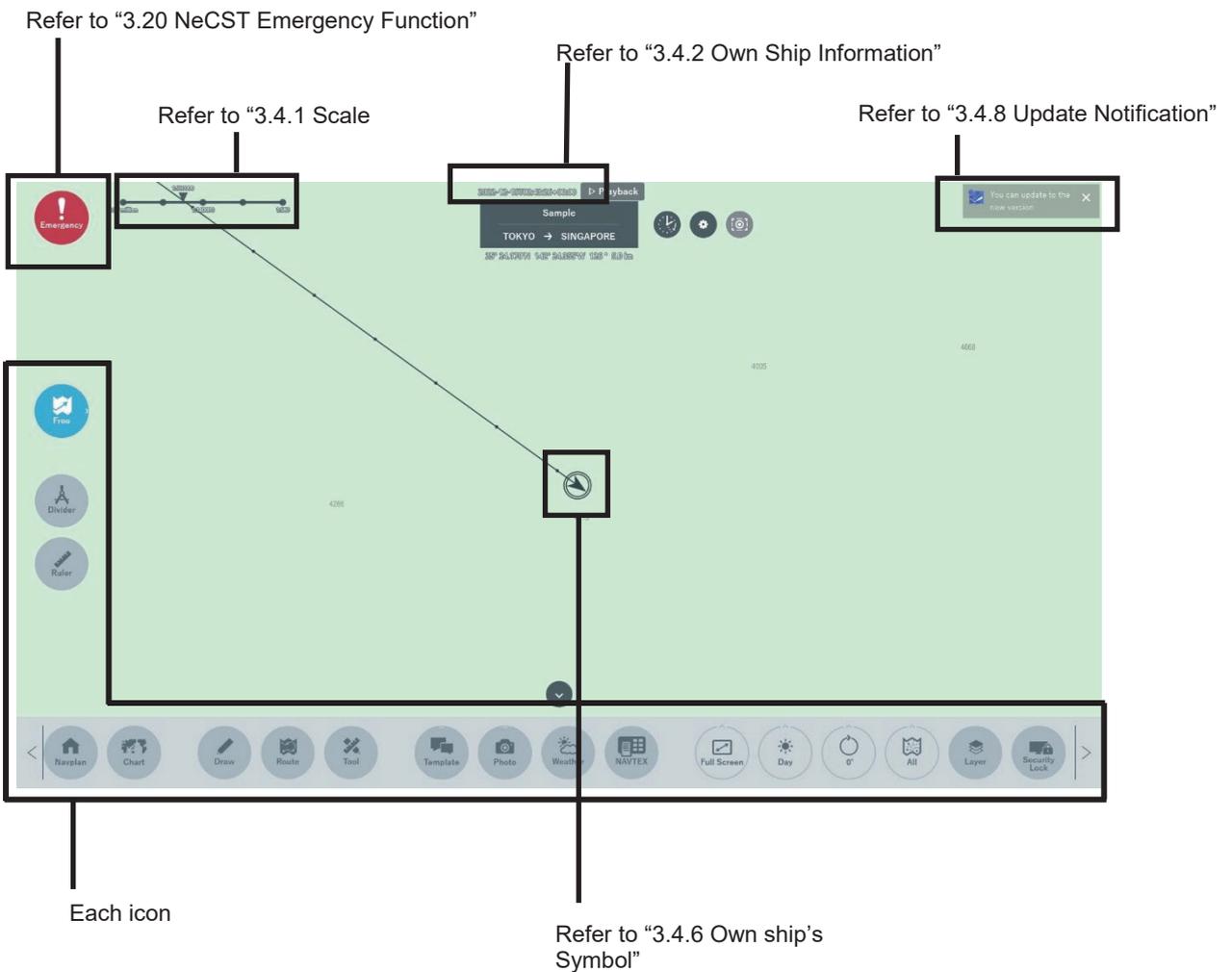


3.4 Main Functions of Top Screen

This section describes the name and main function of each part of the top screen.



- Refer to "3.4.4 Chart Display Setting"
- Refer to "3.14.2.1 Setting Navigation"
- Refer to "3.14.2.2 Setting Chart Text"
- Refer to "3.14.2.3 Setting Own Ship Track"
- Refer to "3.14.2.4 Setting AIS Display"
- Refer to "3.15.1 Displaying the Conning"



You can use the operating assistance function from each icon. Details of each function will be explained in section 3.5 and after.

Memo



If the above icon is displayed at the top right of the screen, there is a possibility that communication with the data processing unit is not performed, or the data processing unit is not working properly. Check the communication environment between the display processing unit and the data processing unit and restart each processing unit.

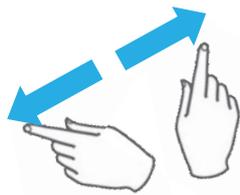
3.4.1 Scale Display

The current scale is displayed.

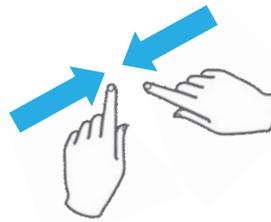


The scale can be changed in the following ways.

- Pinch out/in to increase/decrease the scale.

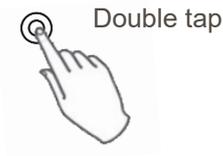


Pinch-out (Chart magnified and displayed)

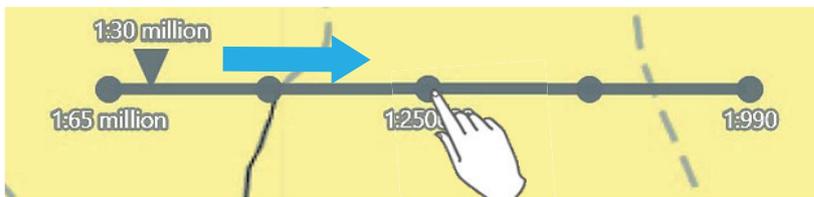


Pinch-in (Chart reduced and displayed)

- Double-tap the area you want to magnify to increase the scale.



- Tap the point on the slider to increase/decrease the scale.

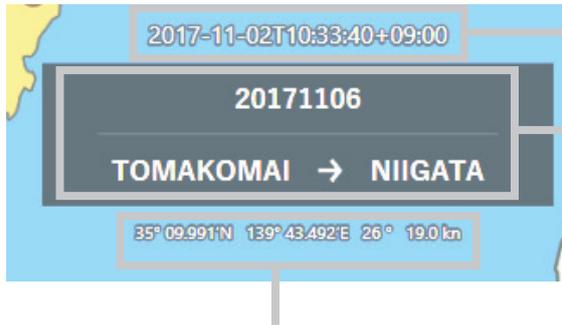


Note

There is the case that Scale Zoon IN/OUT function cannot be operated by tap when "NeCST Emergency" function is occurred.
In the above case, Zoom IN by double-tap on the chart, or Zoom IN/OUT by pinch IN/OUT.

3.4.2 Own Ship Information

A variety of information of own ship is displayed.



Own Ship Time

The current day and time are displayed in ISO8601 format.

Departure/Arrival port data

To change the voyage data, tap the [Navplan] icon, and the screen switches to the voyage data selection screen. Refer to "3.3 Setting Voyage Data" for details

Own Ship Information

Displays the latitude, longitude, bearing, and speed of own ship

3.4.3 Setting Ship's O'clock

It is possible to set time-zone difference.
Use it according to ship's O'clock

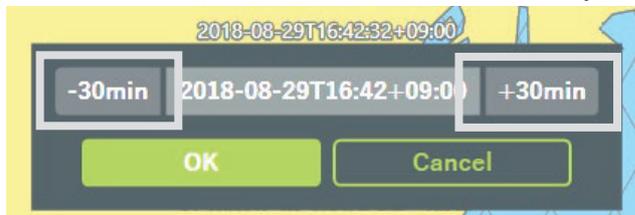
1. Tap Clock icon

Time-zone setting menu is displayed



2. Set the time-zone by tapping +30min/-30min

The time-zone can be set from -14:00 to +14:00 by ± 30 min



3. The setting is change by tapping [OK]button

The setting is cancelled by tapping [Cancel]button.

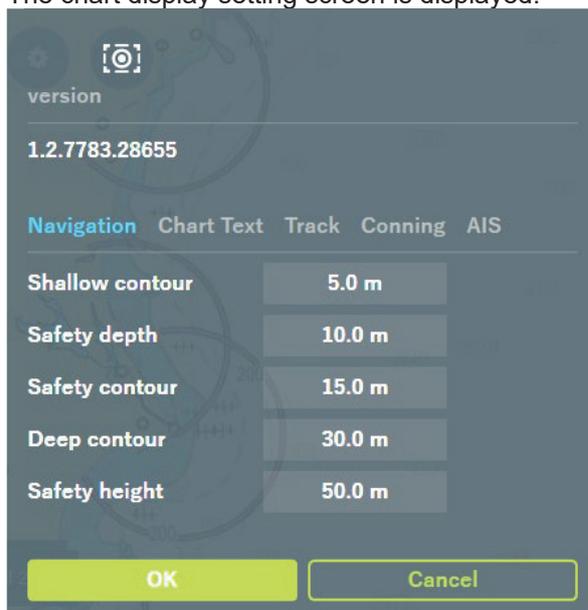
3.4.4 Chart Display Setting

This function enables depth setting for chart display and the show/hide setting of letter objects. Refer to “3.14.2 Chart Display Setting” for details.

1. Tap the [Gear] icon.



The chart display setting screen is displayed.



3.4.5 Screen Shot

Tapping the [Screen Shot] icon enables capture of the screen shot.

Can save up to 100 screenshots.

Cannot save more than 100 screenshots. Delete unnecessary files.

3.4.5.1 Capturing Screen Shot

1. Tap the [Screen Shot] icon.



A screen shot is captured.

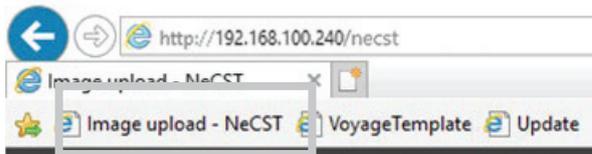
3.4.5.2 Checking Screen Shot

1. Start Internet Explorer in the display processing unit and tap the “Image upload - NeCST” icon.

Access to “<http://192.168.XXX.XXX/necst>”

In “192.168.XXX.XXX”, the IP address of the data processing unit is set.

The default IP of data processing unit is 192.168.100.240



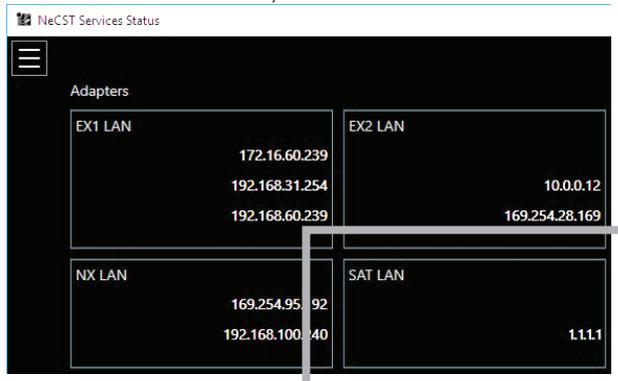
The Image-upload screen is displayed.

2. Select the Screen shot tab.



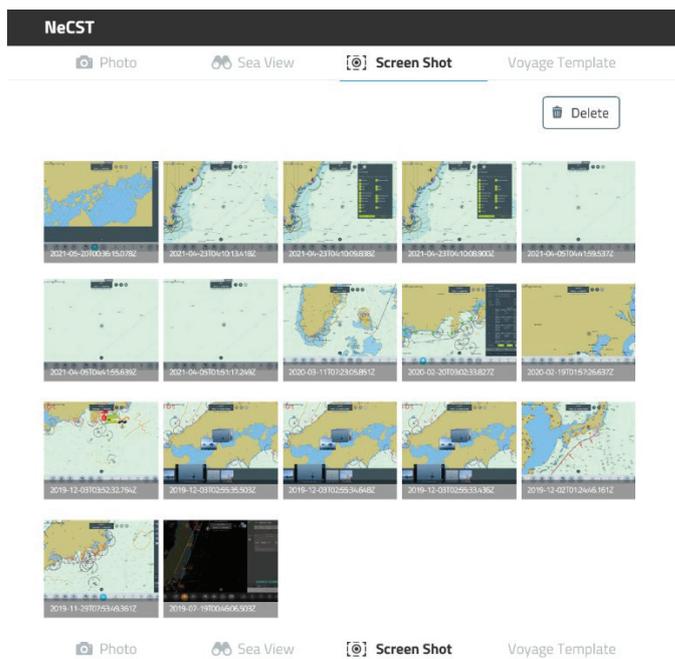
Memo

Operation is also possible from a PC connected to the same Internet environment as the NeCST. Start Watcher, check the IP address of SAT-LAN and use it.



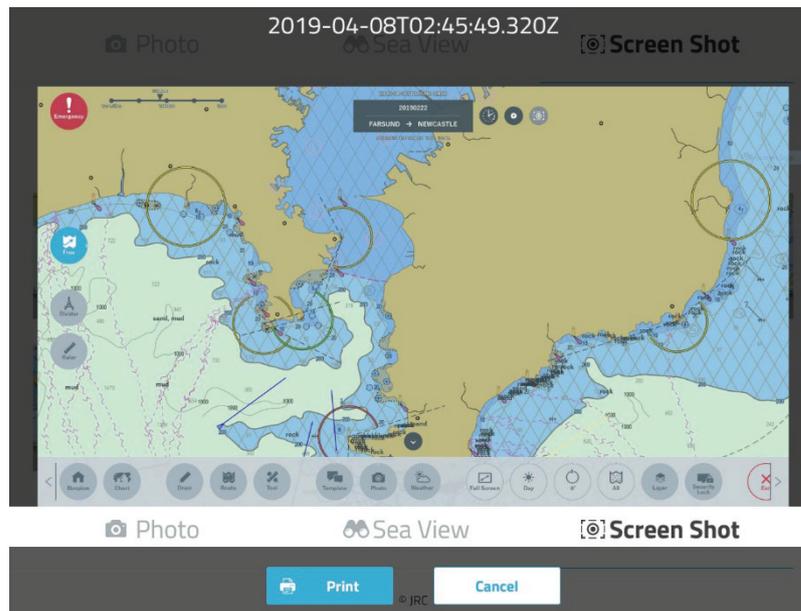
Example: Open the browser on another PC and enter “<http://1.1.1.1/necst>” in the address bar.
Enter the IP address set for SAT-LAN in 1.1.1.1.

Captured screen shots are listed.



Memo

Tap any image in the screenshot list. The selected image is displayed.
 If the PC is connected to a printer and the driver is installed, be able to print.



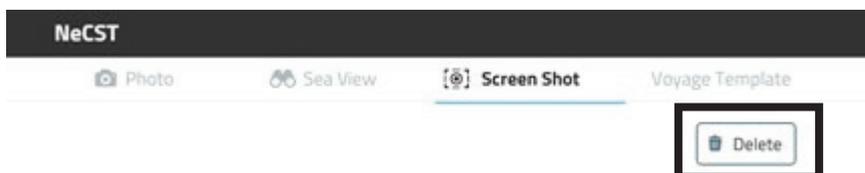
The NeCST cannot install the printer driver.
 When printing, print on another PC in the same LAN environment.

3.4.5.3 Deleting Screen Shot

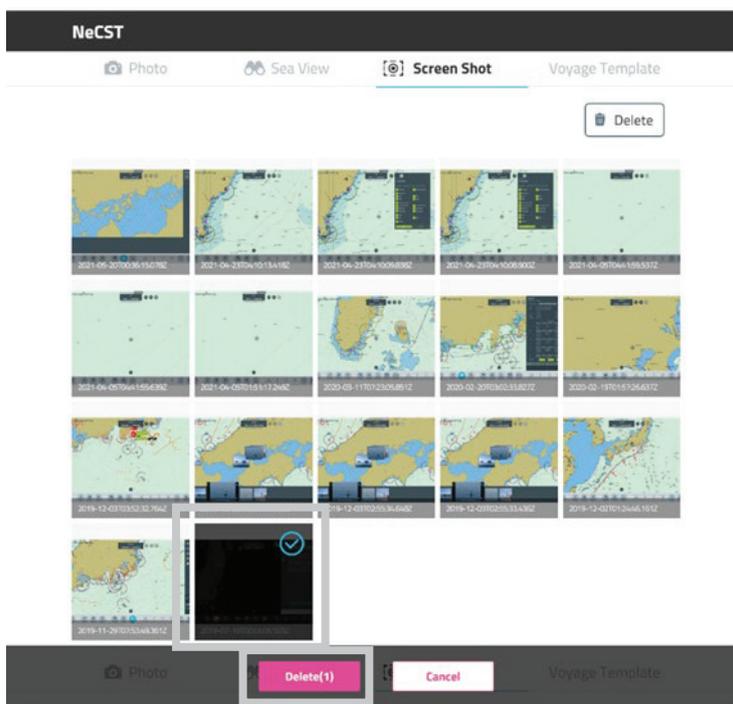
Note

Can save up to 100 screenshots.
Cannot save more than 100 screenshots. Delete unnecessary files.

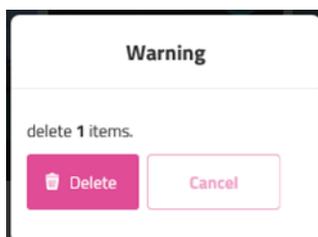
1. Tap the [Delete] icon.



2. Select the screen shot to delete and tap the [Delete] button.



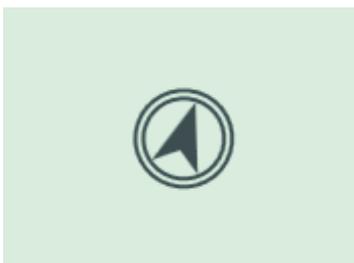
A delete confirmation pop-up is displayed.



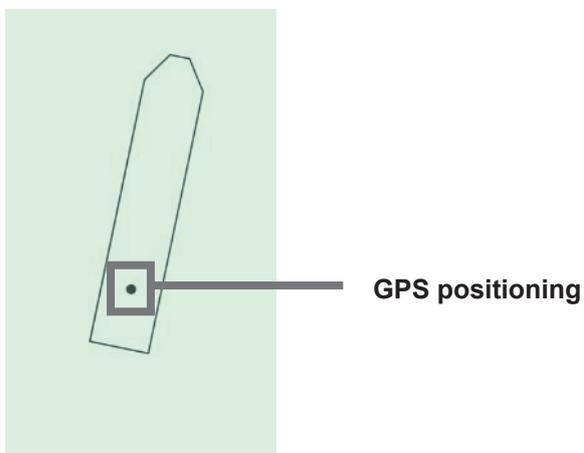
To delete, tap the [Delete] icon.
To cancel the deletion, click the [Cancel] button.

3.4.6 Own Ship's Symbol

Own ship's position is displayed on the chart.



In case of displaying chart with the scale than a certain level
Outline of own ship is displayed by GNSS antenna equipment position information of the own ship
AIS information.



Memo

If AIS information is not entered in NeCST, the outline of the own ship is not displayed.
The outline of your ship is acquired from AIS of MMSI registered in equipment setting.
If you want to display outline of the own ship, contact our sales office.

3.4.7 Distribution Data Display Function

This function is a function to display useful information (files) distributed from Smart Ship Viewer on the chart.

Distribution data distributed from Smart Ship Viewer will display an icon linked to latitude and longitude information on NeCST. Details can be displayed on the chart when the icon is selected.

Distribution data displayed in detail can be moved to any position and enlarged/reduced.

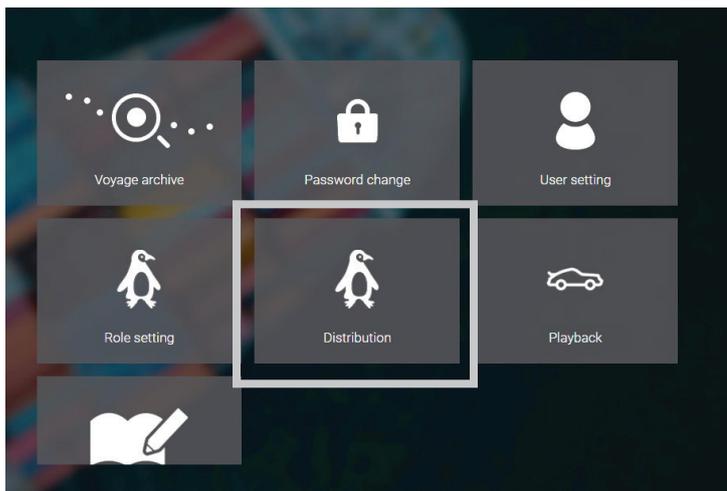
Memo

An optional contract is required to use the Distribution data display function. Contact our sales department, branch, branch office, sales office or agency.

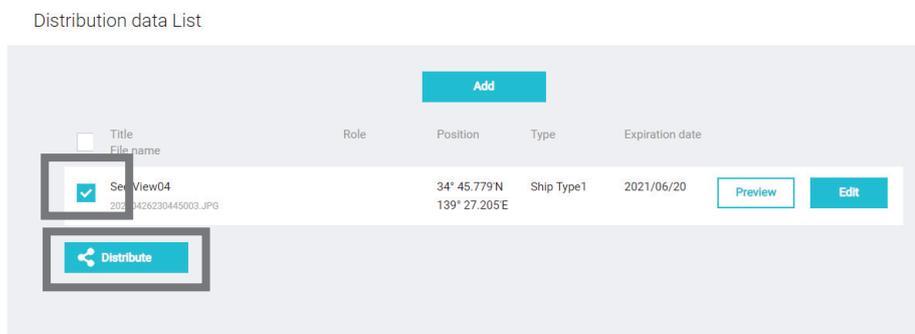
It cannot be used if “Distribution” and “Publish distribution data to ships” are not checked in the Role setting assigned by Smart Ship Viewer.

1. Log in to Smart Ship Viewer and distribute the Distribution data to be imported.

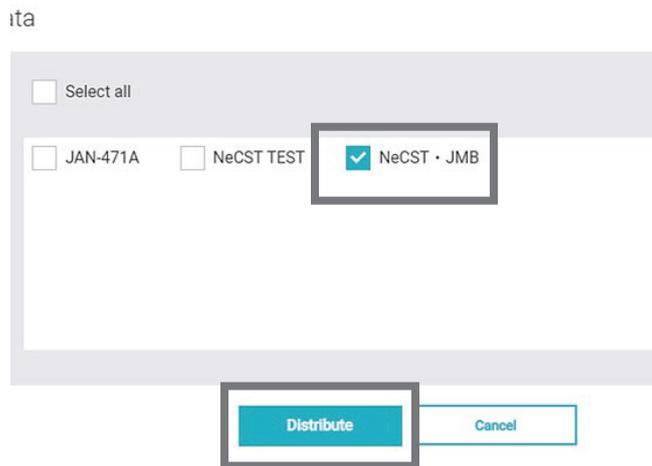
- Distribution data distribution method
 - (1) Access the following site on a PC that can connect to the Internet.
<https://ssv.jmarinecloud.com/>
 - (2) After logging in, select Distribution.



- (3) Select the Distribution data you want to import and click the [Distribute] button.



(4) Select the managed ship you want to distribute and click [Distribute].



Memo
Distribution will take a Download interval (SSV setting) time. Distribute with a margin.

Data download

Download interval 60 min

Download data split size Small Normal Large

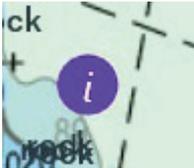
2. Start NeCST app.

The Distribution data icon is displayed at the latitude and longitude set in the Distribution data.

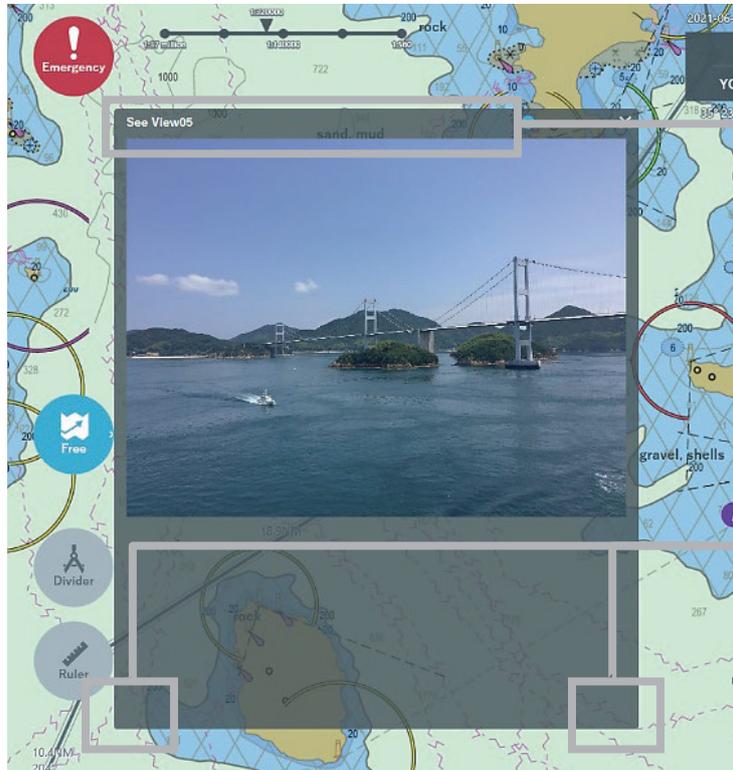


Distribution data icon display

3. Tap the Distribution data icon.



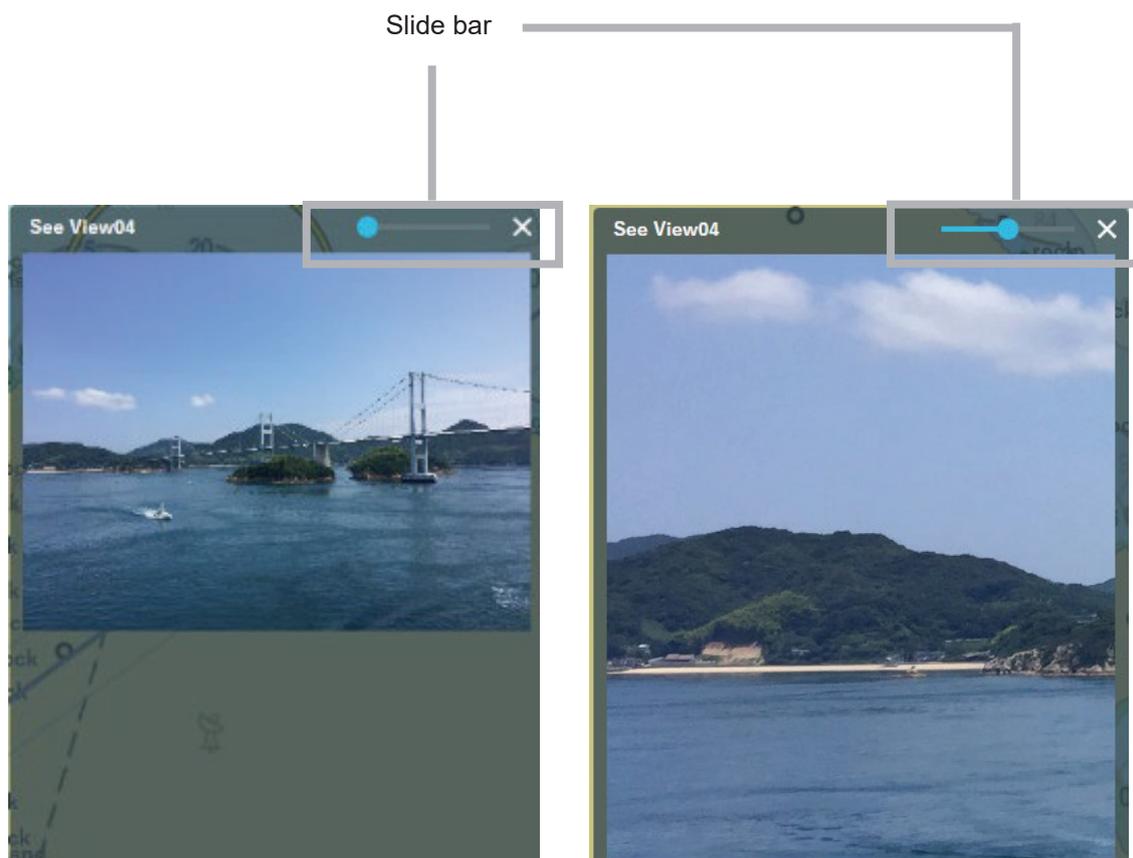
Distribution data is displayed.



Move the window by dragging and dropping.

Zoom in and out on the window by dragging and dropping.

4. Operate the slide bar on the upper right of the Distribution data.
Distribution data can be enlarged or reduced.



Reduced view

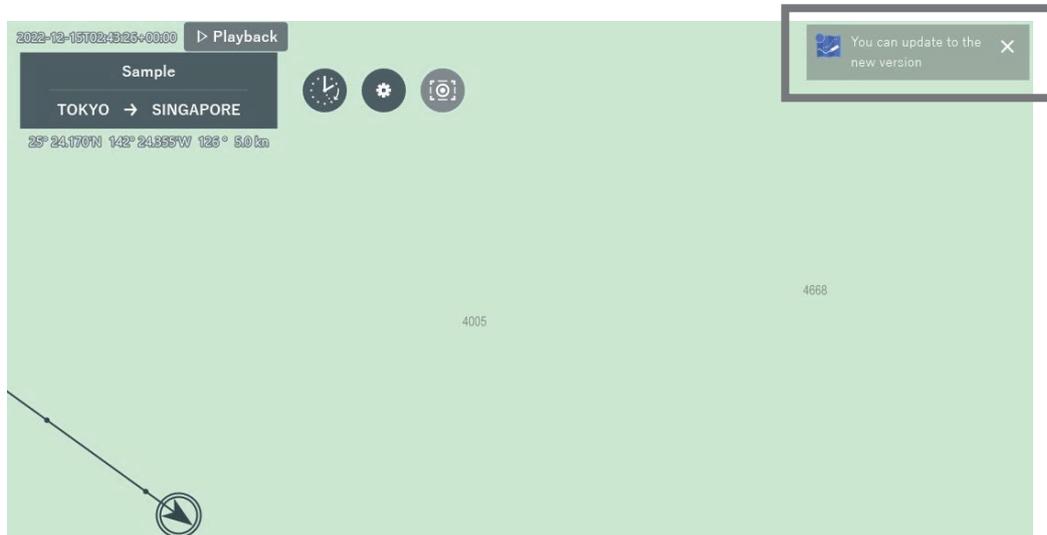
Enlarged view

5. Click the [X] to end the display of Distribution data.

3.4.8 Update Notification

If the latest NeCST package is stored, an update notification appears in the upper right corner of the screen.

If a notification appears, the NeCST can be updated. To update the software, perform step 5 or later of "3.24.1 Performing Software Update".



Memo

NeCST package Ver 1.3.0.0 or later supports remote update.
When the NeCST package is received from SSV, an update notification appears.

3.5 Route Planning

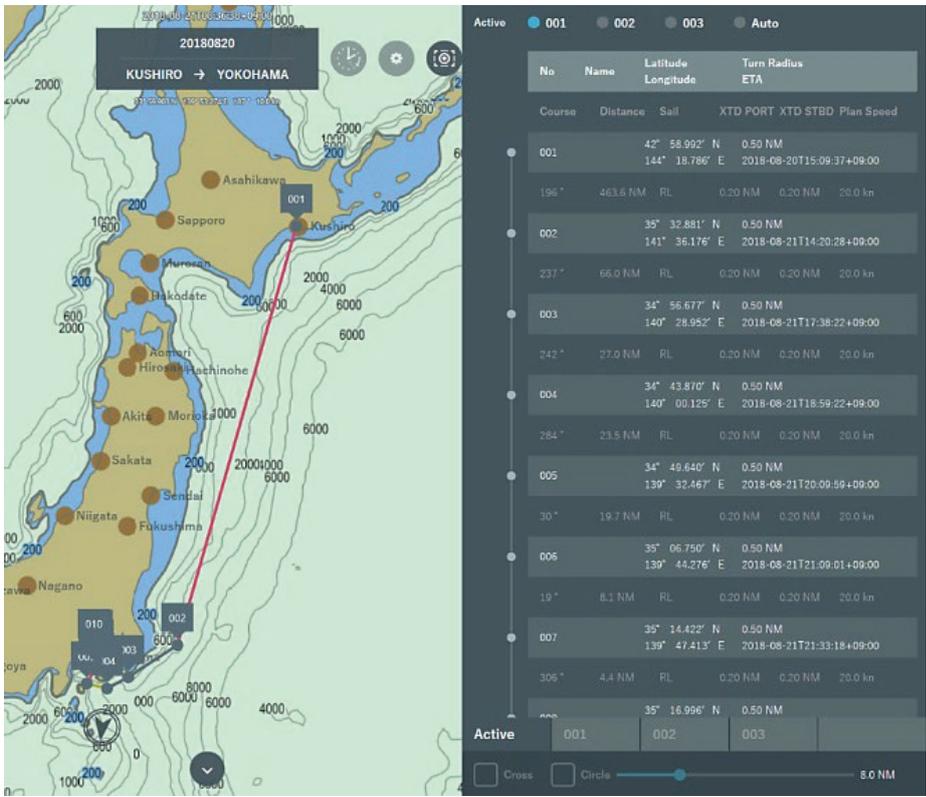


CAUTION



Make sure to check created routes on ECDIS.
 This equipment performs simplified safety check. The final safety check needs to be performed by ECDIS.

This equipment allows easy route planning by tapping the screen.
 Create a route based on handwritten information or information prepared in another way.



Route Planning Example

3.5.1 Details of Route Data

This section describes the route data to be displayed during route planning. Set items below as needed.

No.	Name	Latitude	Longitude	Turn Radius	ETA
001		42° 58.992' N	144° 18.786' E	0.50 NM	2018-08-20T15:09:37+09:00
196°	463.6 NM	RL	0.20 NM	0.20 NM	20.0 kn
002		35° 32.881' N	14° 36.176' E	0.50 NM	2018-08-21T14:20:28+09:00

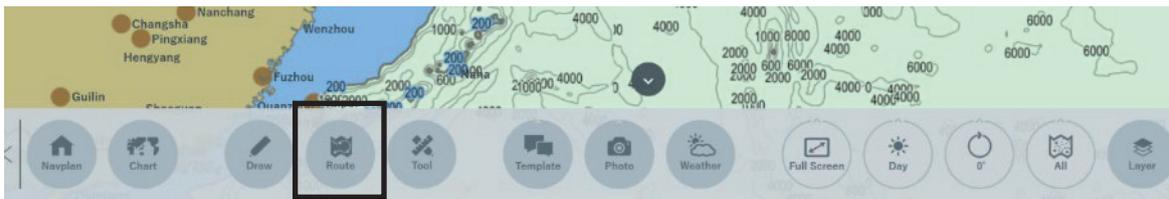
Callouts (1) through (11) point to the following fields in the table:

- (1) No.
- (2) Name
- (3) Latitude
- (4) Turn Radius
- (5) ETA
- (6) Course
- (7) Distance
- (8) Sail
- (9) XTD PORT
- (10) XTD STBD
- (11) Plan Speed

- (1) No.: WPT number. Automatically assigned from 001. Can add up to WPT512.
- (2) Name: Set the WPT name.
- (3) Latitude: Latitude of the WPT.
Longitude: Longitude of the WPT.
- (4) Turn Radius: Set the turn radius (0.00 to 9.99 NM).
- (5) ETA: The estimated arriving time is displayed ISO8601 format
- (6) Course: Bearing to the next WPT.
- (7) Distance: Distance to the next WPT.
- (8) Sail: Select [RL] or [GC].
- (9) XTD PORT: Set the route width of the port side (0.01 to 5.00 NM).
- (10) XTD STBD: Set the route width of the starboard side (0.01 to 5.00 NM).
- (11) Plan Speed: Set the planned ship speed (1.0 to 40.0 kn).

3.5.2 Creating New Route

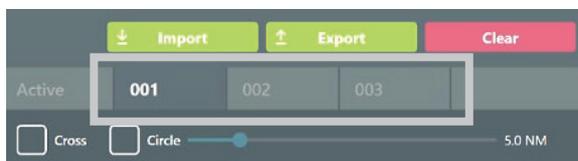
1. Tap the [Route] icon.



The screen switches to the route creation mode.

2. Select [tab].

Select one of [001] to [003] and create its route.
Refer to “3.5.8 Active Route” for [Active] tab.



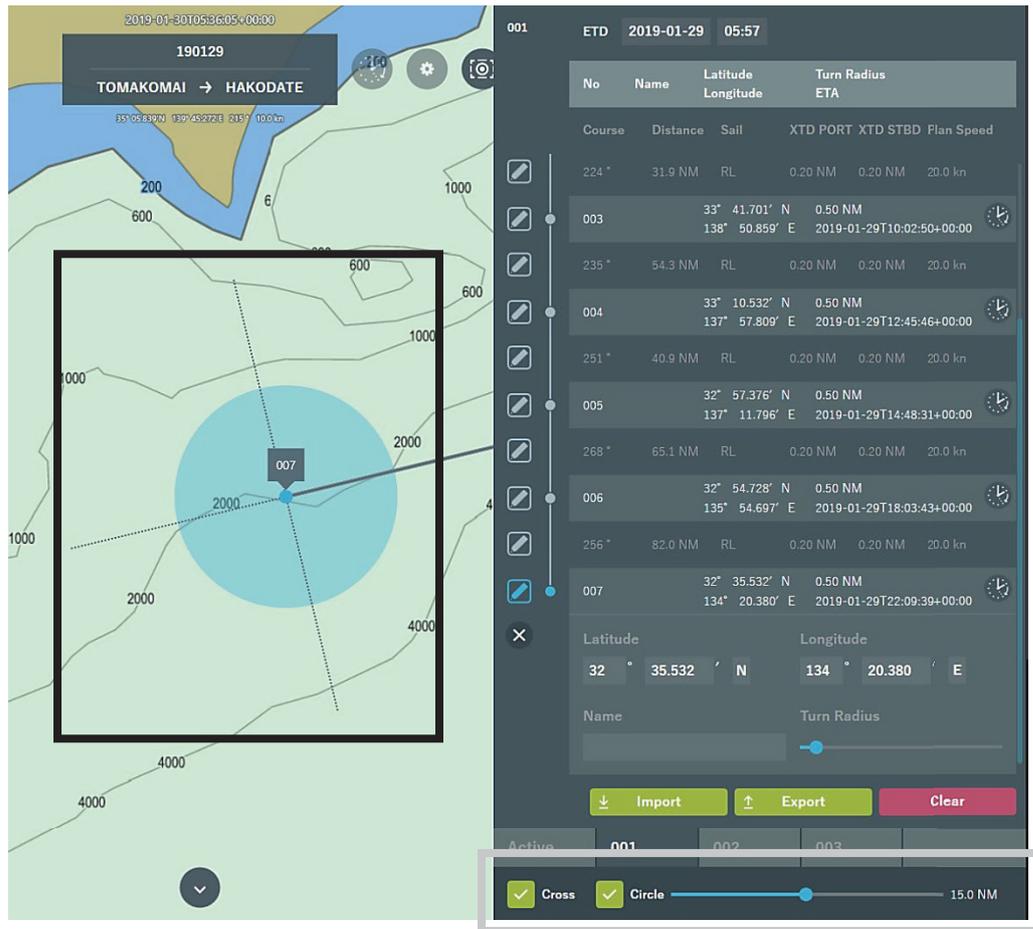
3. Tap on the screen to add WPTs.

Create a route by adding WPTs as needed.



Memo

The checkboxes [Cross] and [Circle] are functions to support course change.



When the above functions are enabled, Cross and Circle for a WPT are displayed. Use this function to set waypoints when creating a route.

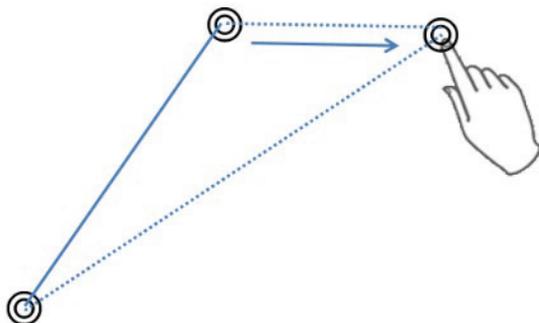
3.5.3 Editing Route

The following can be edited for a route.

Edit function	Related section
Move WPT	3.5.3.1 Moving WPT of Route
Add WPT	3.5.3.2 Adding WPT to Route
Add WPT between legs	3.5.3.3 Adding WPT Between Legs of Route
Delete WPT	3.5.3.4 Deleting WPT of Route
Table editing	3.5.3.5 Editing Route Data
Setting ETD	3.5.3.6 Setting ETD

3.5.3.1 Moving WPT of Route

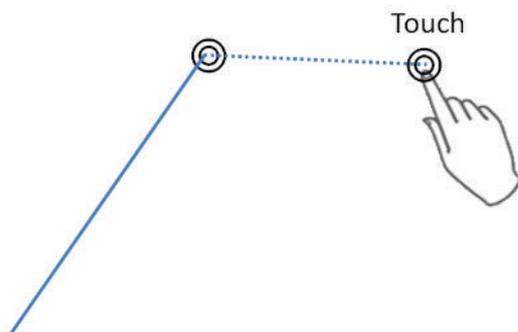
1. Drag and drop the WPT you want to move.
The WPT moves.



3.5.3.2 Adding WPT to Route

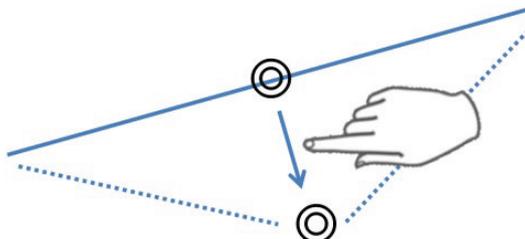
When a WPT is added to the route, it is added after the final WPT.

1. Tap the point you want to add.
The final WPT is newly added at the tapped position.



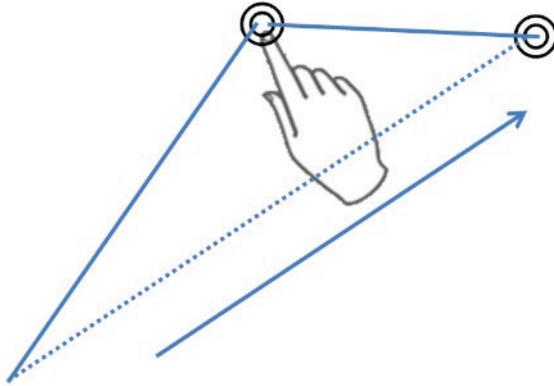
3.5.3.3 Adding WPT Between Legs of Route

1. Drag and drop between legs.
A WPT is added between the legs.



3.5.3.4 Deleting WPT of Route

1. Tap the WPT you want to delete.
The tapped WPT is deleted.



3.5.3.5 Editing Route Data

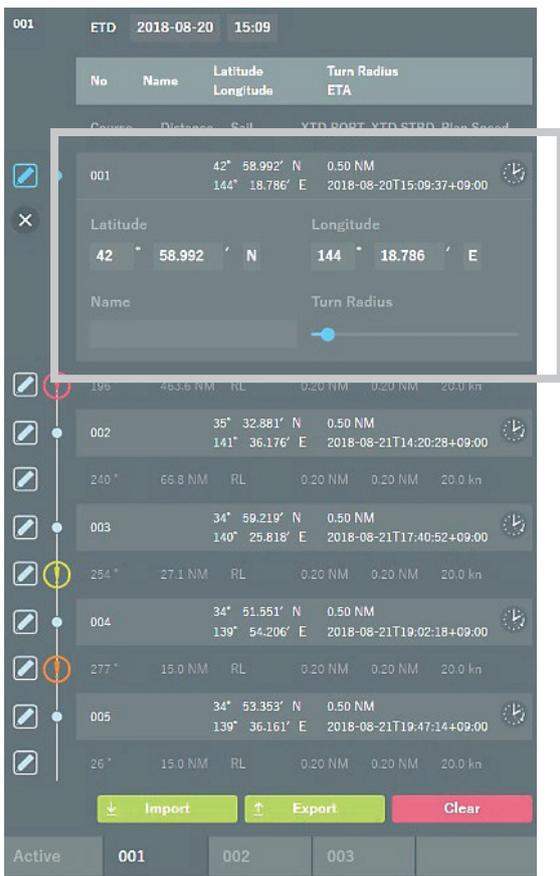
1. Tap the item you want to edit.

No	Name	Latitude	Longitude	Turn Radius	ETA
001		42° 58.992' N	144° 18.786' E	0.50 NM	2018-08-20T15:09:37+09:00
002		35° 32.881' N	141° 36.176' E	0.50 NM	2018-08-21T14:20:28+09:00
003		34° 56.677' N	140° 28.952' E	0.50 NM	2018-08-21T17:38:22+09:00
004		34° 43.870' N	140° 00.125' E	0.50 NM	2018-08-21T18:59:22+09:00
005		34° 49.640' N	139° 32.467' E	0.50 NM	2018-08-21T20:09:59+09:00
006		35° 06.750' N	139° 44.276' E	0.50 NM	2018-08-21T21:09:01+09:00
007		35° 14.422' N	139° 47.413' E	0.50 NM	2018-08-21T21:33:18+09:00

Active: 001, 002, 003

Cross Circle 8.0 NM

The edit screen of the tapped item is displayed.



- 2. Edit the contents of the selected item.**
Each item can be edited and deleted.
To delete the item, tap the [×] icon.

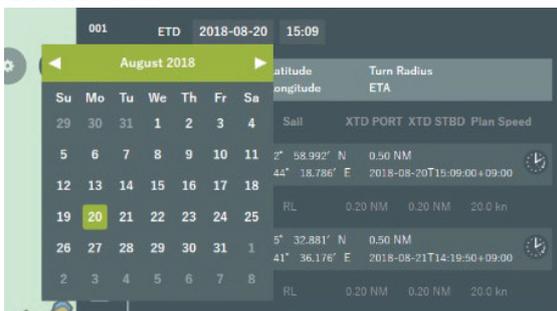
3.5.3.6 Setting ETD

It is possible to set ETD (Estimated time of departure)

- 1. Tap “Date”**



- 2. Select “Date”**



Memo

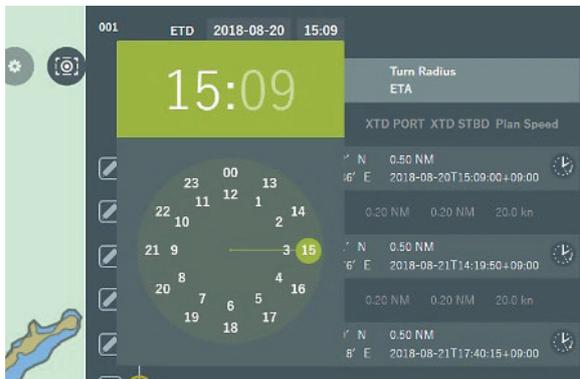
In case changing “Year”, operate the top of the calendar.



3. Tap “Time”



4. Select “Time”

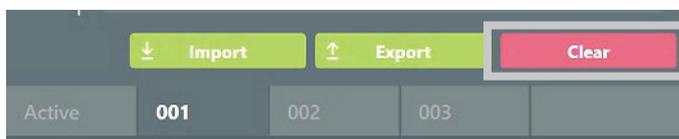


The setting ETD will be applied to WPT001, and the ETA of each WPT is automatically calculated.

3.5.4 Deleting Route

1. Tap the [Clear] button.

The route data of the selected tab is deleted.



Note

Pressing the [Clear] button deletes the route data of the selected tab.

In case of deleting by mistake, tap [Undo] icon immediately.

The route data can be restored. Refer to “3.7.6 Undo/Redo Function” about Undo function.

3.5.5 Function of Simplified Route Safety Check

This equipment enables simplified safety check of a created route.
When an error is detected, correct the route.

Safety check function

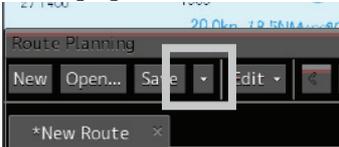
Check color	Check result
Red	Crossing dangerous areas or objects (such as coastline and safety contour)
Amber	Crossing caution areas or objects (such as restrict area, specific area, Hazard and AtoN)
None	No error occurred

Correct the route based on the check result, or check that there is no problem with the error content.

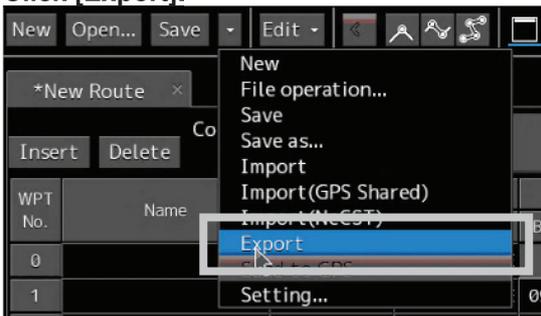
3.5.6 Importing Route

3.5.6.1 Export the Route from JAN-7201/9201

1. Click [Menu]-[Route Planning].
2. Create an any route with ECDIS.
3. Click [▼] button.



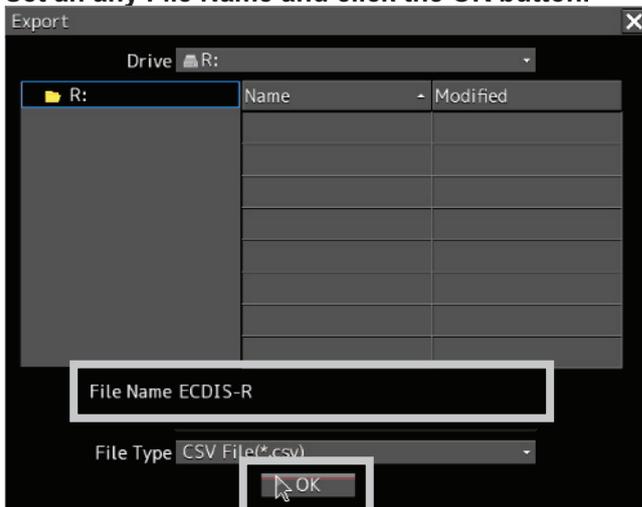
4. Click [Export].



The Export screen is displayed.

5. Select Drive: [R:].
6. File Type: [Select CSV File (*. Csv)].

7. Set an any File Name and click the OK button.



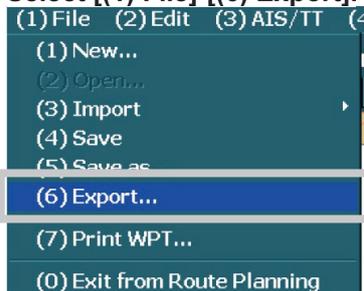
The route is exported from ECDIS.

3.5.6.2 Export the Route from JAN-701B/901B

1. Select [(2) Route]-[(1) Route Planning]-[(1) Table Editor].

2. Create an any route with ECDIS.

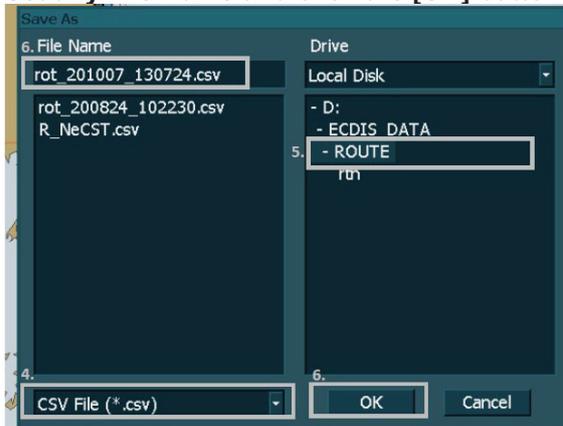
3. Select [(1) File]-[(6) Export].



4. Select File Type: [CSV File (*.csv)].

5. Select Drive: [Local Disk]-[D:]-[ECDIS DATA]-[ROUTE].

6. Set any File Name and click the [OK] button.



3.5.6.3 Import Exported Route

This equipment can import route data such as existing route, exported route by ECDIS and automatically acquired route from ECDIS (JAN-7201/9201). Compatible ECDIS devices are shown in the following table.

No.	ECDIS device	Output format
1	JAN-701B/901B (JRC)	.csv
2	JAN-7201/9201 (JRC)	.csv
3	FMD-3100/3200/3300 (FURUNO)	.txt

1. Select the location [tab] to import a route to.

If Import is performed, the route at the location to import to is overwritten.

2. Tap the [Import] button.



The routes that can be imported are listed.

Routes created on other tabs can be imported.

You can import routes using the voyage data distribution function. For details, refer to "3.5.6.4 Import Route Using the Voyage Data Distribution Function".

The Route which is exported from ECDIS can be imported.

Routes exported from ECDIS(JAN-7201/9201) can be imported.

Memo

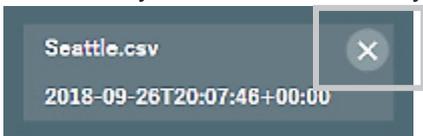
To use the voyage data distribution function, NeCST must be Package Ver.1.2.3.0 or higher.

3. Select a route to import.

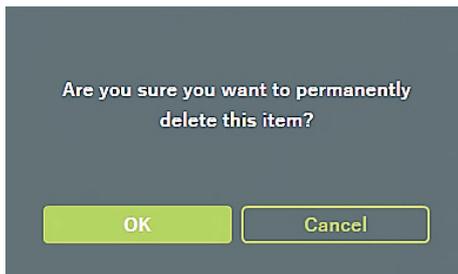


Memo

Unnecessary files can be deleted by tapping [X] button.



A confirmation popup is displayed.



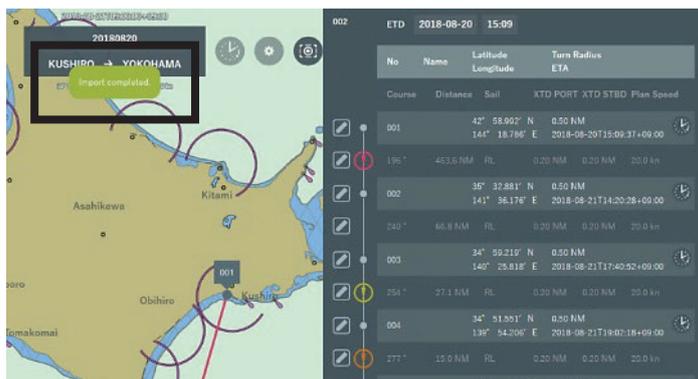
To delete the file, tap the [OK] button.
To cancel the delete, tap the [Cancel] button.

4. Tap the [OK] button.

To cancel the import of the route, tap the [Cancel] button.



“Import completed.” is displayed, and the route import is completed.



3.5.6.4 Import Route Using the Voyage Data Distribution Function

You can import the routes distributed from Smart Ship Viewer. For the distribution procedure from Smart Ship Viewer, refer to "3.3.5 Creating Voyage Data Using the Voyage Data Distribution Function".

Note
To use the voyage data distribution function, NeCST must be Package Ver.1.2.3.0 or higher.

1. Start NeCST app.

When the voyage data is distributed, a notification will be displayed in the upper right corner of the screen.



Memo
Distribution will take a Download interval (SSV setting) time. Distribute with a margin.

Data download

Download interval: 60 min

Download data split size: Small Normal Large

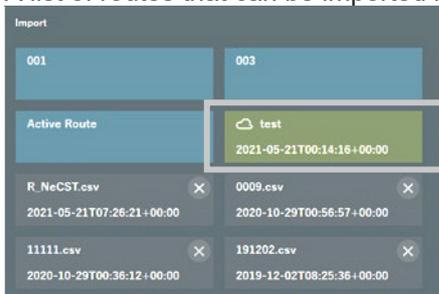
2. Select the [Tab] of the route import destination.

When you import, the route to which you are importing will be overwritten.

3. Tap [Import].



A list of routes that can be imported is displayed.



You can import routes using the voyage data distribution function. The imported route is the Active Route in the distributed voyage data.

4. Select the route you want to import.



5. Tap [OK] button.

To stop importing routes, tap the [Cancel] button.



“Import completed.” is displayed and the route import is completed.



3.5.7 Exporting Route

1. Create a route.

Refer to “3.5.2 Creating New Route” or “3.5.3 Editing Route” for how to create a route.

2. Tap the [Export] button.



“Export completed.” is displayed, and the export of route data is completed.



Compatible ECDIS devices are shown in the following table.

No.	ECDIS device	Output format
1	JAN-701B/901B (JRC)	R_NeCST.csv
2	JAN-7201/9201 (JRC)	R_NeCST.csv
3	FMD-3100/3200/3300 (FURUNO)	R_NeCST.txt

Note

There are cases where exported routes cannot be used on ECDIS.

In the case, check the instruction manual of the ECDIS and correct the parameter value of route data to a value less than the upper limit.

3.5.7.1 Using Exported Route on ECDIS

The following is an example of using a route exported from the JAN-470 on ECDIS.

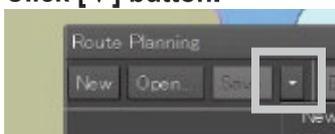
[JAN-7201/9201]

Memo

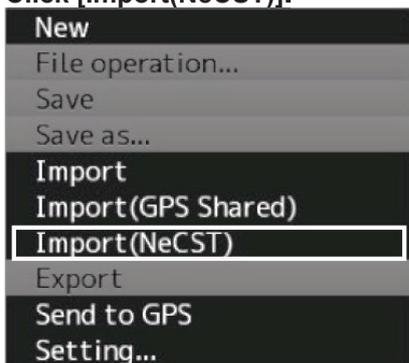
If the JAN-7201/9201 is started before J-Marine NeCST, linking may not work properly. Restart the JAN-7201/9201.

■ If the Soft Version of JAN-7201/9201 is 01.30.110 or later, you can use the following procedure.

1. Click [Menu]-[Route Planning].
2. Click [▼] button.



3. Click [Import(NeCST)].

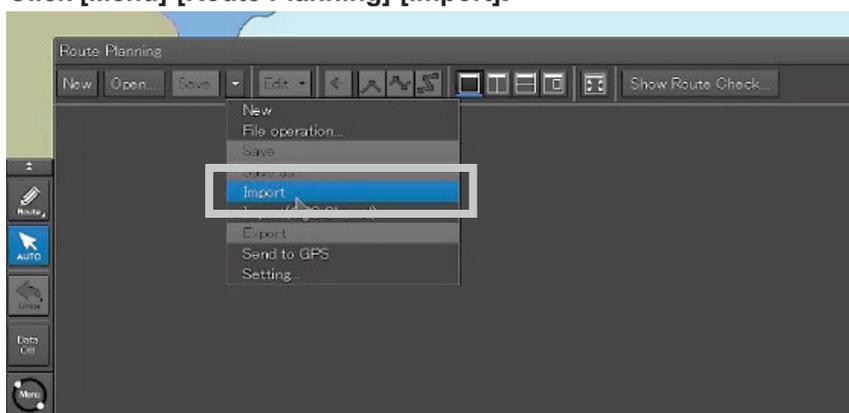


The route will be imported with the name [*R_NeCST].

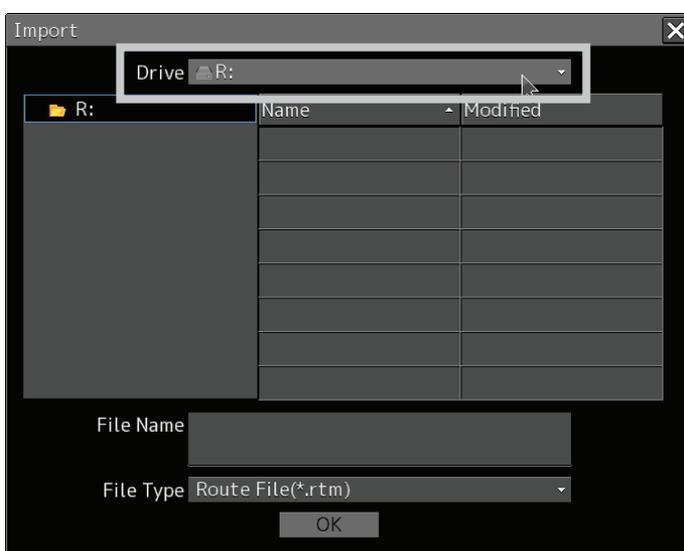
WPT No.	Name	Position		Leg		Sail	XTD		Arrival Radius	Turr Rac
		LAT	LON	BWW	Distance		PORT	STBD		
0		35°14.650'N	139°48.803'E							
1		34°59.351'N	139°40.399'E	204.3°	16.8NM	RL	0.20NM	0.20NM	0.50NM	0.50NM
2		34°51.311'N	139°44.683'E	156.3°	8.8NM	RL	0.20NM	0.20NM	0.50NM	0.50NM
3		34°47.219'N	139°58.361'E	109.9°	12.0NM	RL	0.20NM	0.20NM	0.50NM	0.50NM
4		34°53.643'N	140°10.185'E	056.6°	11.7NM	RL	0.20NM	0.20NM	0.50NM	0.50NM

■ If the Soft Version of JAN-7201/9201 is earlier than 01.30.110, you can use the following procedure.

1. Click [Menu]-[Route Planning]-[Import].



2. Select [R:] on [Drive].



3.5.8 Active Route

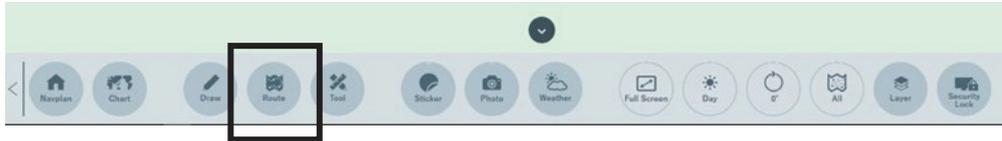
Select the route which is used navigation.

Selected route is displayed on the chart when not starting function on Creating route.

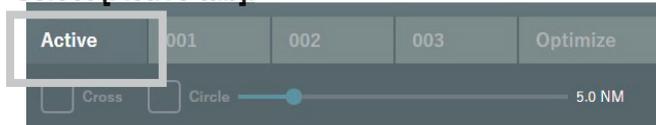
Routes selected from [001]-[003] and [Auto] will be uploaded to the Smart Ship Viewer at regular intervals.

From Smart Ship Viewer, routes are delivered to any managed ship.

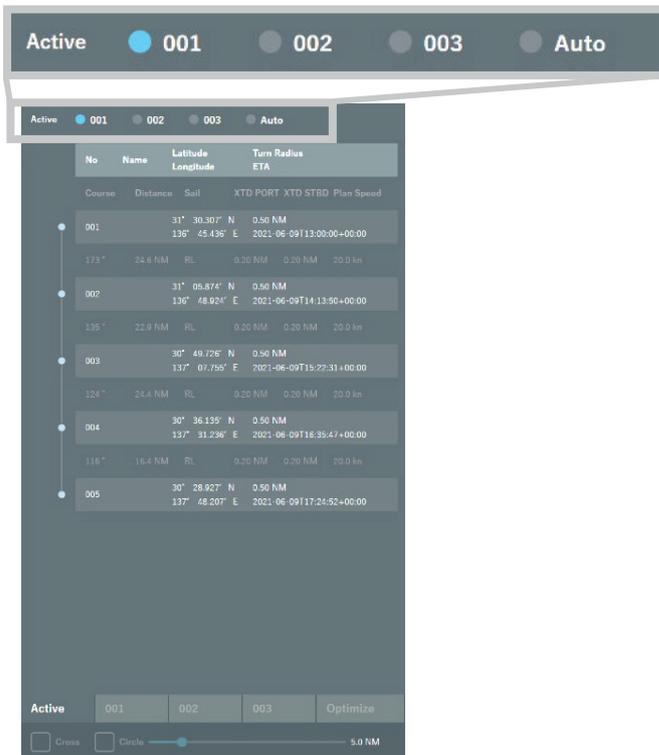
1. Tap the [Route] icon.



2. Select [Active tab].



3. Select the route from [001] - [003] or [Auto].



- When selecting [001] - [003]: The route data recorded in selected the number is displayed.
- When selecting [Auto]: JAN-470 periodically displays voyage data operating at ECDIS (JAN-7201/9201).

Memo

The route which is obtained from ECDIS automatically can be imported using Route Planning function. (Refer to “3.5.6 Importing Route)

When selecting [Active tab], route cannot be edited

When selecting [Auto], the Safety check result is not displayed.

3.5.9 Display the Optimal Route

The NeCST Optimal Route Function is a function that supports route planning by providing the optimal route for each ship type based on the weather and sea phenomenon. This function is a function addition to the Route function.

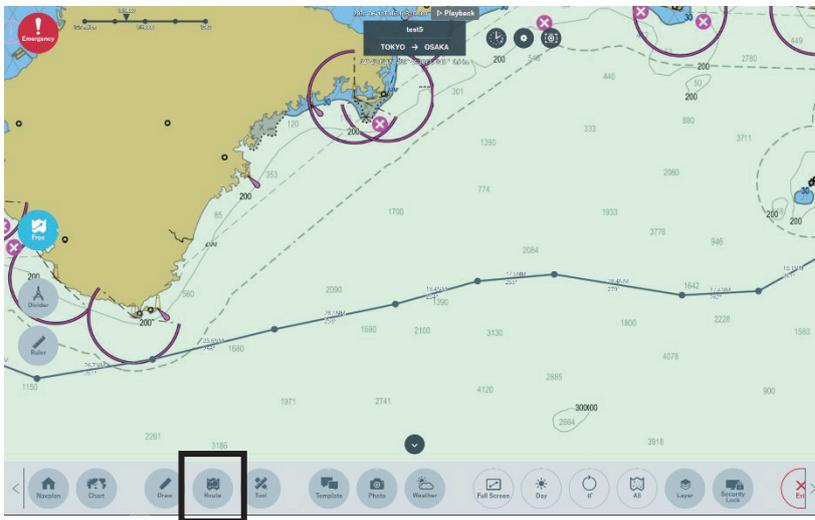
Memo

An optional contract is required to use this function. Contact our sales department, branch, branch office, sales office or agency.

3.5.9.1 Request the Optimal Route

You can enter the information required to request the optimal route. The route must be created in advance.

1. Tap [Route] icon.



2. Tap [Optimize] button.

No	Name	Latitude	Longitude	Turn Radius	ETA
001		34° 43.118' N	139° 40.542' E	0.50 NM	2021-06-09T13:00:00+00:00
158°	5.6 NM	RL	0.20 NM	0.20 NM	20.0 km
002		34° 38.504' N	139° 43.083' E	0.50 NM	2021-06-09T13:16:51+00:00
203°	11.4 NM	RL	0.20 NM	0.20 NM	20.0 km
003		34° 28.067' N	139° 37.609' E	0.50 NM	2021-06-09T13:50:59+00:00
215°	18.6 NM	RL	0.20 NM	0.20 NM	20.0 km
004		34° 12.889' N	139° 24.678' E	0.50 NM	2021-06-09T14:46:45+00:00
242°	19.2 NM	RL	0.20 NM	0.20 NM	20.0 km
005		34° 03.998' N	139° 04.216' E	0.50 NM	2021-06-09T15:44:20+00:00
201°	24.3 NM	RL	0.20 NM	0.20 NM	20.0 km
006		35° 41.136' N	138° 53.760' E	0.50 NM	2021-06-09T16:57:44+00:00
241°	38.1 NM	RL	0.20 NM	0.20 NM	20.0 km
007		35° 32.235' N	138° 34.873' E	0.50 NM	2021-06-09T17:52:09+00:00
297°	17.4 NM	RL	0.20 NM	0.20 NM	20.0 km
Active	001	002	003	Optimize	

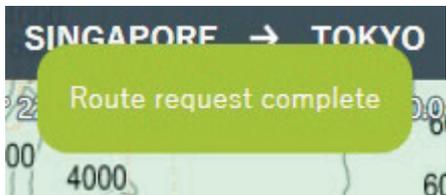
3. Enter the required information and tap the [Request] button.

If each set value is left as the initial value, the request for the optimum route will not succeed. Change each setting to a value suitable for the ship before requesting.

The screenshot shows the 'Optimize' screen with the following settings and callouts:

- Route:** Select the reference route from 001, 002, and 003.
- ETD:** Set the departure date and time.
- ETA:** Set the arrival date and time.
- Rolling limit:** Set the Rolling limit. The initial value is 0.
- Pitching limit:** Set the Pitching limit. The initial value is 0.
- Wave height limit:** Set the Wave height limit. The initial value is 0.
- Forward draft:** Set the Forward draft. The initial value is 0.
- After draft:** Set the After draft. The initial value is 0.
- Metacentric height:** Set the Metacentric height. The initial value is 0.
- First Waypoint:** Set the First Waypoint.
- From current position:** If you select the checkbox, own ship's current position will be the first waypoint.
- [Request] button:** The button to request the optimized route.

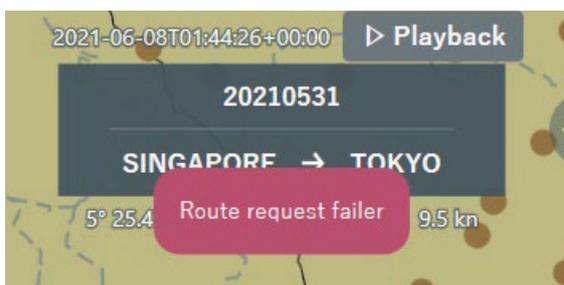
It will be displayed that the request for the optimal route was successful.



A notification will be displayed when the reception of the optimal route is completed.



It will be displayed that the request for the optimal route was failed.



Memo

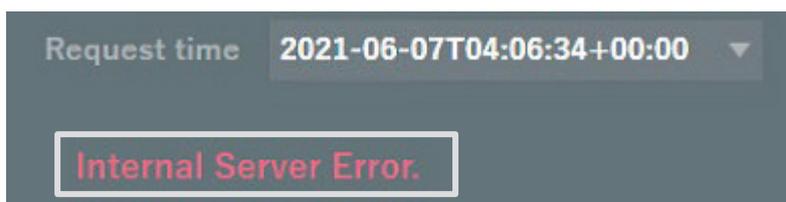
If the above error is displayed, check the following.

- Check that there is no problem with the SAT LAN wiring in the data processing unit.
- The JWA Route in the SSV may not be set correctly. Ask the shipowner or superuser to review the settings.

4. After tapping [Result], select the optimal route you want to apply from the [Request time] pull-down menu.



If the optimization fails, the following will be displayed.



Memo

If an error such as Internal Server Error is displayed, please review the following.

- The waypoints on the reference route are far enough from the land.
- The limit value of the request information is set to a value with some margin.
- The departure date and time must be appropriate.
- The number of WPTs on the route does not exceed 100.
- The average ship speed of the route is not less than 4kn or more than 50kn.

3.5.9.2 Displaying Waypoint

Detailed information of each waypoint of the optimal route data and the original route data can be compared and displayed.

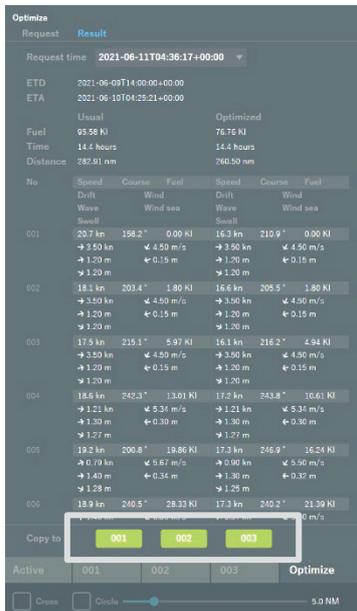
No	Usual			Optimized		
	Speed	Course	Fuel	Speed	Course	Fuel
001	20.7 kn	158.2°	0.00 KI	16.3 kn	210.9°	0.00 KI
002	18.1 kn	203.4°	1.80 KI	16.6 kn	205.5°	1.80 KI
003	17.5 kn	215.1°	5.97 KI	16.1 kn	216.2°	4.94 KI
004	18.6 kn	242.3°	13.01 KI	17.2 kn	243.8°	10.61 KI
005	19.2 kn	200.8°	19.86 KI	17.3 kn	246.9°	16.24 KI
006	18.9 kn	240.5°	28.33 KI	17.3 kn	240.2°	21.39 KI

Waypoints are also compared and displayed on the chart. Waypoints on the optimal route are displayed in a different color than the original waypoints.

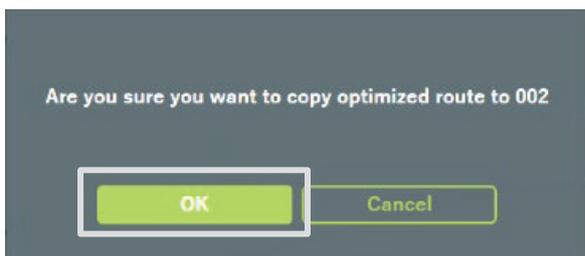
3.5.9.3 Copy the Optimal Distribution Route

You can copy the selected optimal route data to Route tabs 1 to 3.

1. Select the route number of the copy destination.



2. A confirmation dialog will be displayed. Tap [OK].



3. The [Copy complete] pop-up will display, and the copy will be completed.



3.6 Handwritten Data

This product can perform operations on electronic charts in the same way as handwriting on paper charts.

At the briefing, please fill in and use the information necessary for route planning (NGA (No Go Area), etc.).

The written information is automatically saved for each voyage data and can be used in ECDIS.

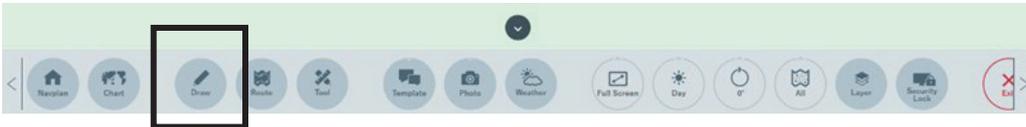
In addition, user charts created with ECDIS can be used with this product.

Voyage data (including handwritten data) can be distributed from the Smart Ship Viewer to any managed ship.

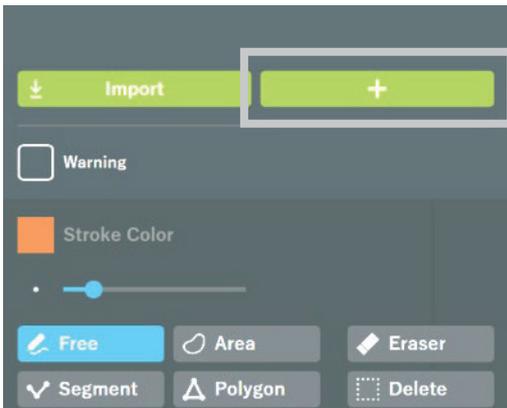
Refer to the " 3.6.6.3 Import User Chart Distributed to NeCST ".

3.6.1 Creating New Handwritten Data

1. Tap the [Draw] icon.



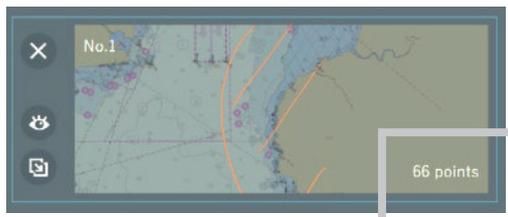
2. Tap the [+] button.



A sheet for handwritten data is newly added.

Memo

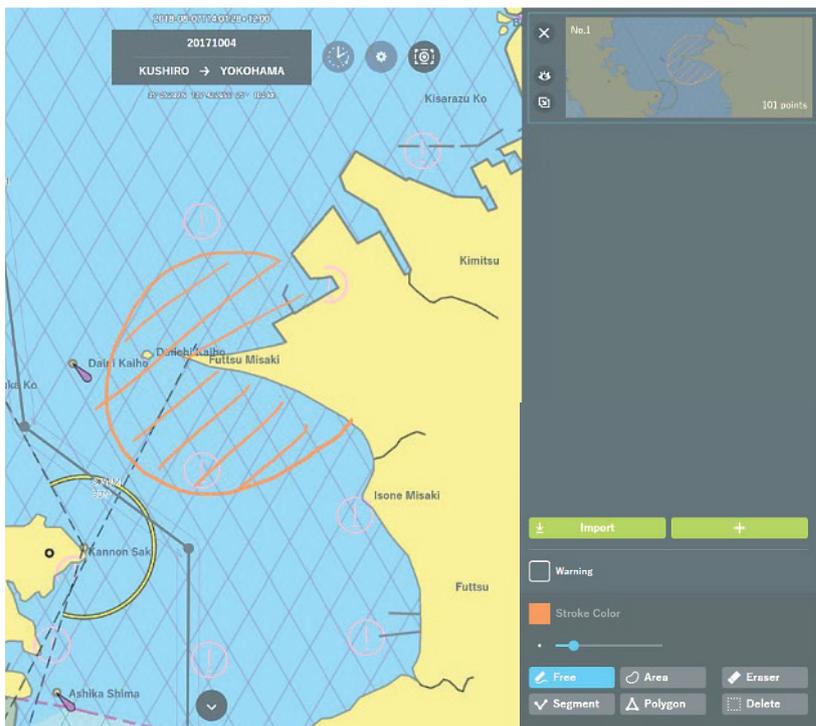
Up to 10 sheets can be created.



Up to 10,000 points can be handwritten for each sheet.

If 10,000 points are exceeded, the type of handwritten data automatically changes to the [Delete] icon.

- 3. Perform handwriting with fingers or a stylus pen.**
 Handwritten data is created and displayed on the chart screen.



3.6.2 Editing Handwritten Data

The following edit operations can be performed for handwritten data.
 Editing is also available when creating new handwritten data.

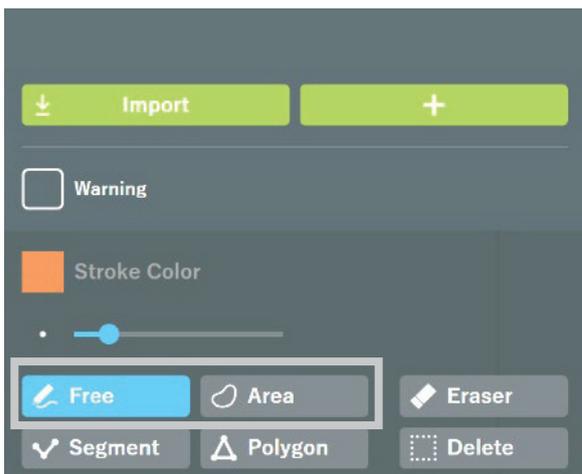
Edit function	Related section
To change the type of handwritten data	3.6.2.1 Changing the Type of Handwritten Data
To set handwritten data as the object of warning	3.6.2.2 Setting Handwritten Data as the Object of Warning
To change the color of handwritten data	3.6.2.3 Changing the Color of Handwritten Data
To change the transparency of handwritten data	3.6.2.4 Changing the Transparency of Handwritten Data
To change the line width of handwritten data	3.6.2.5 Changing the Line Width of Handwritten Data
Paper weight function	3.6.2.6 Paper Weight Function
To edit the already handwritten data	3.6.2.7 Editing Already Handwritten Data
To delete handwritten data	3.6.3 Deleting Handwritten Data

3.6.2.1 Changing the Type of Handwritten Data

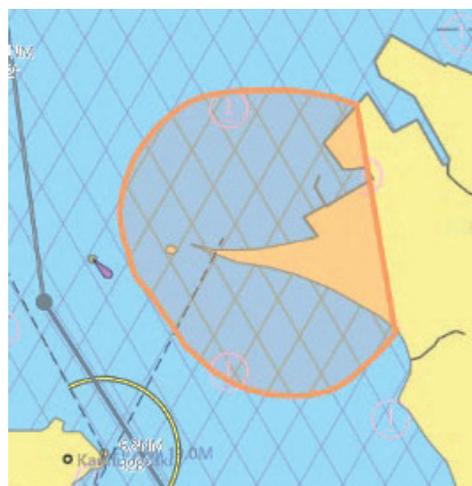
Select the type of handwritten data according to the purpose of use.

Type	Description
Free	Handwritten data is displayed at which handwriting has been performed.
Area	Handwritten data is displayed at which handwriting has been performed, and the inside of the area is filled with color.
Segment	A line can be drawn between two points.
Polygon	Lines are drawn between three or more points, and the inside of the polygon is filled with color.

1. Select the [Free] or [Area] icon and perform handwriting on the chart.

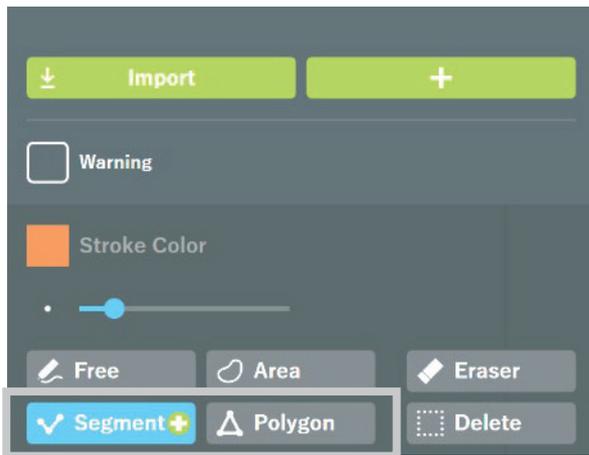


When Free selected



When Area selected

2. Select the [Segment] or [Polygon] icon.



3. Perform handwriting on the chart and tap the [+] button.



When Segment selected



When Polygon selected

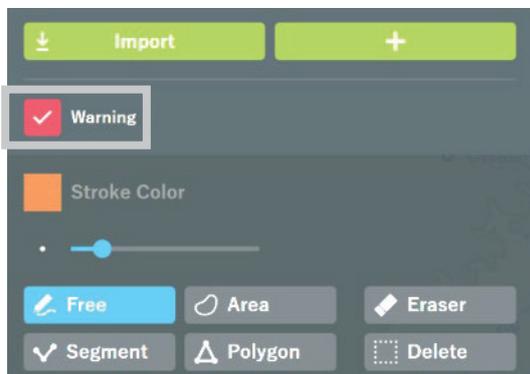
Note

When handwritten data is created with Segment or Polygon, data is not established as handwritten data until the [+] button is tapped. Tap the [+] button to establish it as handwritten data.

3.6.2.2 Setting Handwritten Data as the Object of Warning

The handwritten data created can be set as the object of warning. Once handwritten data is set as the object of warning, a warning occurs only when the handwritten data is used on ECDIS.

1. Check the [Warning] checkbox.



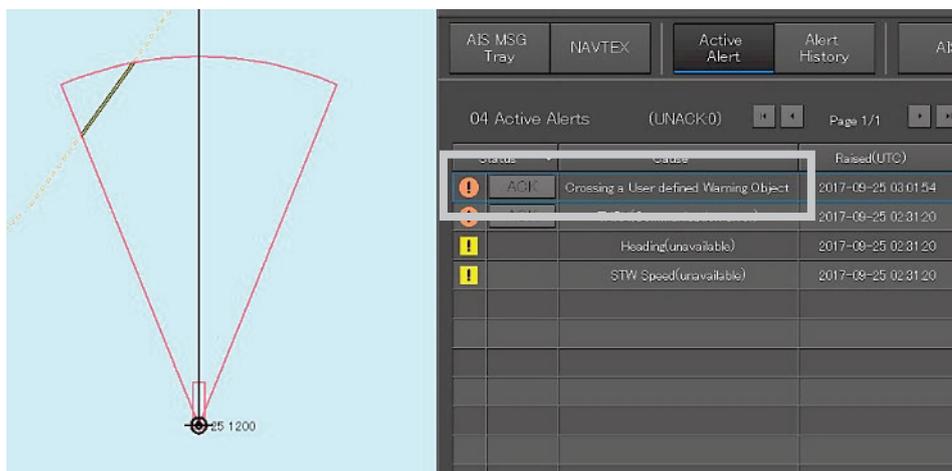
“Warning” is displayed on the handwritten sheet and the sheet becomes the object of warning.



Warnings are only displayed on ECDIS.
Refer to “3.6.7.1 Using Exported Handwritten Data on ECDIS”.

Memo

Warnings are displayed on ECDIS when the handwritten data set as a warning crosses the route data or the monitoring area.



3.6.2.3 Changing the Color of Handwritten Data

The color of handwritten lines can be changed.

1. Tap the [Stroke Color] icon.



The color pallet is displayed.



2. Select a new color and tap the [OK] button.
To cancel the change of the color, tap the [Cancel] button.



Memo

Neither color nor transparency can be changed for data after handwriting.

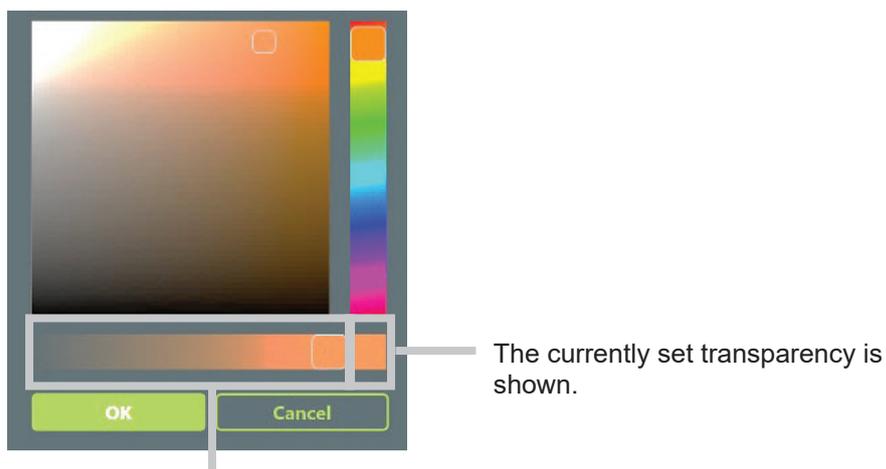
3.6.2.4 Changing the Transparency of Handwritten Data

The transparency of handwritten data can be changed.

1. Tap the [Stroke Color] icon.



The transparency is shown.



Displays the transparency bar and the range of transparency.

2. Adjust the transparency bar and tap the [OK] button.

To cancel the change of transparency, tap the [Cancel] button.



Memo

When the handwritten type is [Area] or [Polygon], Fill Color can be set in addition to Stroke Color.



The color and transparency can be changed for Fill Color similarly to Stroke Color. Refer to “3.6.2.3 Changing the Color of Handwritten Data” and “3.6.2.4 Changing the Transparency of Handwritten Data” for details.

3.6.2.5 Changing the Line Width of Handwritten Data

The line width of handwritten data can be changed.

1. Use the line width slider.

Change to any line width.



3.6.2.6 Paper Weight Function

This function enables switching between chart moving mode and handwriting mode.

1. Tap the [Paper weight] icon.



Switching is made between chart moving mode and handwriting mode.

[Chart Moving Mode]



Enables movement of a chart.
In addition, this mode enables zoom in/out of a chart.

[Handwriting Mode]



Enables handwriting.
The chart cannot be moved because it is fixedly displayed.

Memo

The Paper weight function can use only the following functions:

- Draw
- Divider

Choosing a function not in the list automatically turns OFF the Paper weight function.

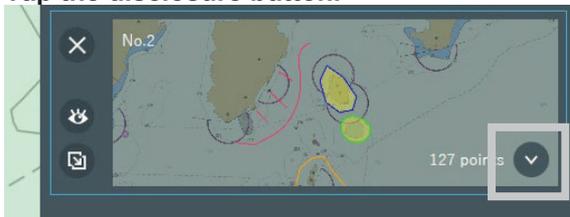
3.6.2.7 Editing Already Handwritten Data

Edit data that has already been handwritten.
 Edit each point of the handwritten data in the edit table or chart.

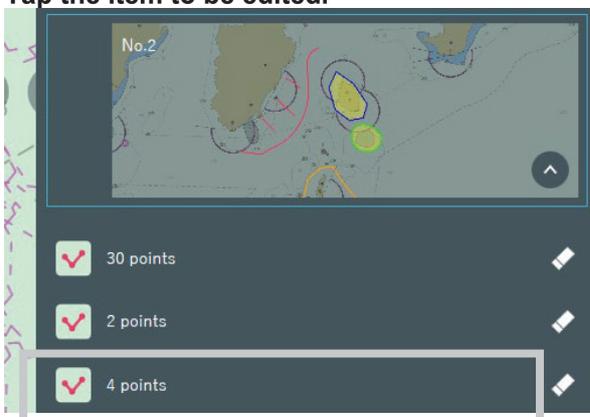
Memo

The editing function for handwritten data is supported by NeCST package Ver 1.3.0.0 or later.

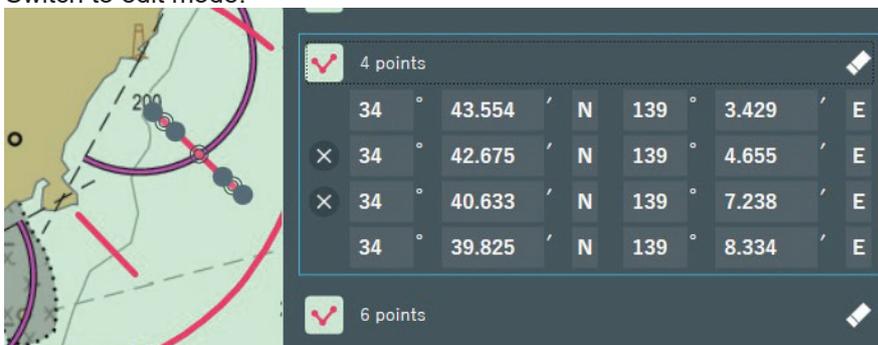
1. Tap the disclosure button.



2. Tap the item to be edited.



Switch to edit mode.



3. Edit from the edit table or chart.

✓	4 points						
		34 °	43.554	′ N	139 °	3.429	′ E
×		34 °	42.675	′ N	139 °	4.655	′ E
×		34 °	40.633	′ N	139 °	7.238	′ E
		34 °	39.825	′ N	139 °	8.334	′ E

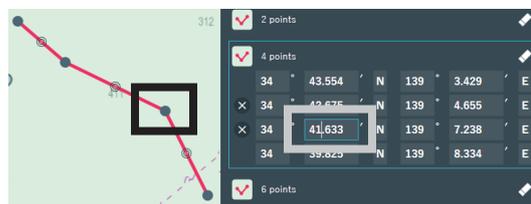
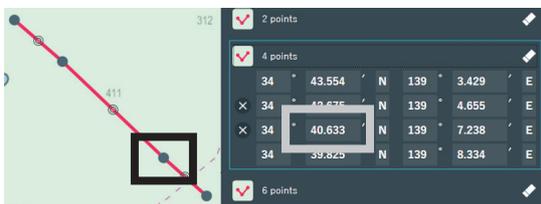
Edit table



Chart

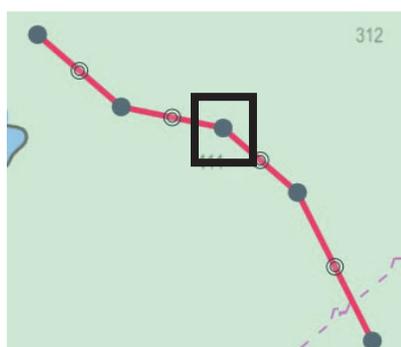
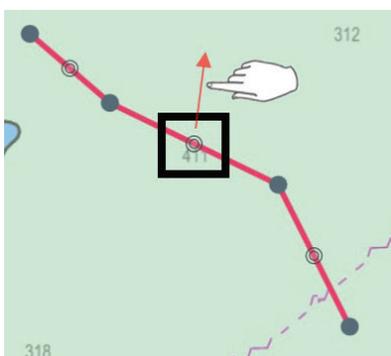
The edit table provides detailed editing of each point. Also, tap the X button to delete unnecessary points.

4 points					
	34	°	43.554	'	N 139 ° 3.429 ' E
X	34	°	42.675	'	N 139 ° 4.655 ' E
X	34	°	40.633	'	N 139 ° 7.238 ' E
	34	°	39.825	'	N 139 ° 8.334 ' E



Memo
Text information of text object can be edited.

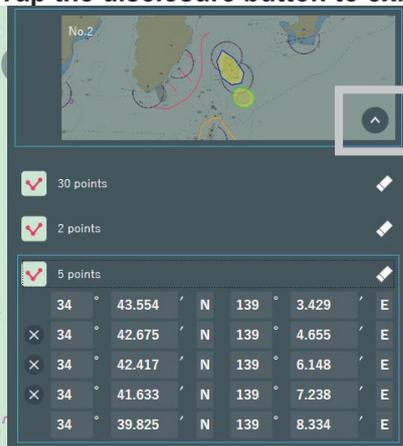
The editing on the chart provides roughly editing of each point. Also, dragging and dropping it between legs to add a point.



Memo
It is possible to edit the color of the handwritten data individually from Stroke Color.

If change the color, refer to "3.6.2.3 Changing the Color of Handwritten Data".

4. Tap the disclosure button to exit edit mode.



Memo

Tap the eraser button to delete the handwritten data.



If handwritten data has been accidentally removed, undo the following operations.

1. Tap the disclosure button to exit edit mode.



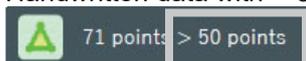
2. Tap the Undo button in the lower left corner of the screen to undo.



Memo

Handwritten data exceeding 50 points cannot be edited.

Handwritten data with ">50points" displayed as shown below cannot be edited.



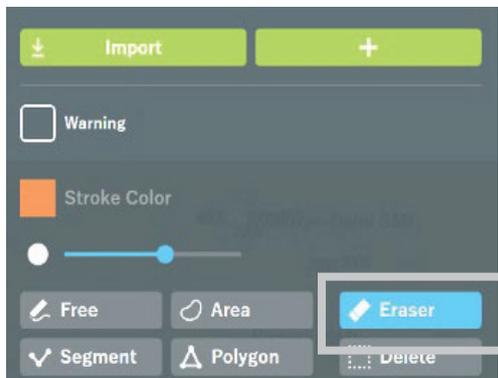
The objects that can be edited are the same as those that can be imported in "3.6.6.3 Import Exported User Chart".

3.6.3 Deleting Handwritten Data

Recorded handwritten data can be deleted.

3.6.3.1 Deleting Stroked Handwritten Data

1. Tap the [Eraser] icon.

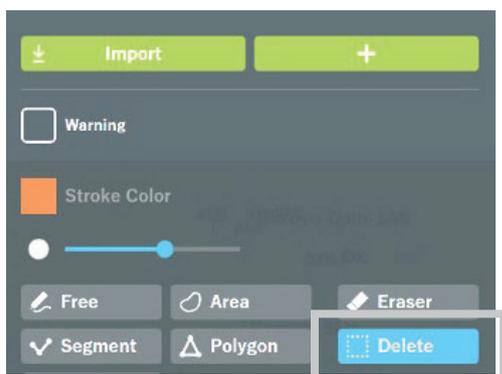


2. **Stroke the handwritten data you want to delete.**
The stroked part of the handwritten data is deleted.



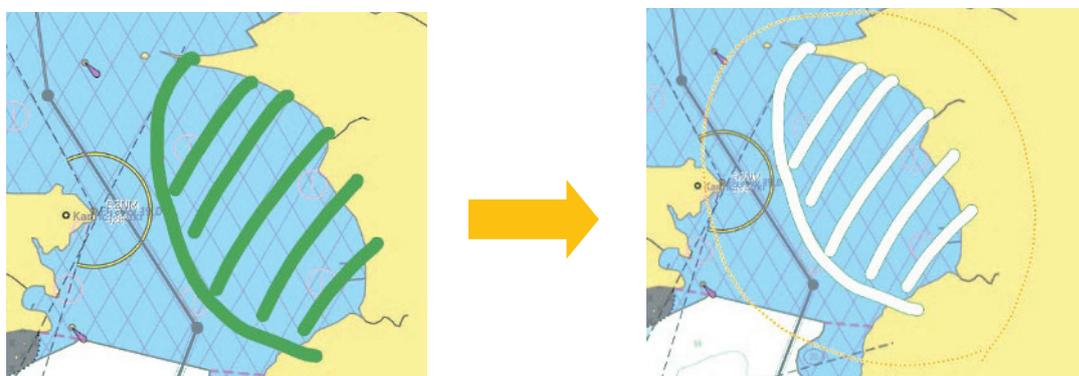
3.6.3.2 Deleting Encircled Handwritten Data

1. Tap the [Delete] icon.



2. Encircle the area you want to delete.

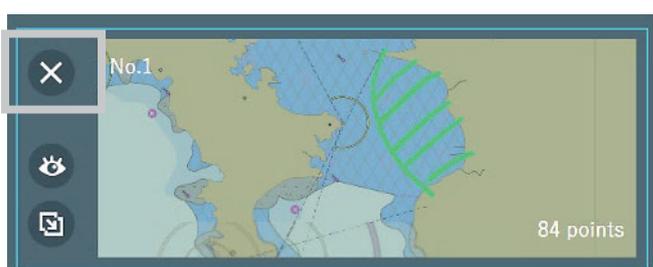
The handwritten data in the encircled area can be deleted at one time.



3.6.3.3 Deleting Handwritten Data of the Selected Sheet

1. Tap the [X] icon.

The handwritten data of the selected sheet is deleted.



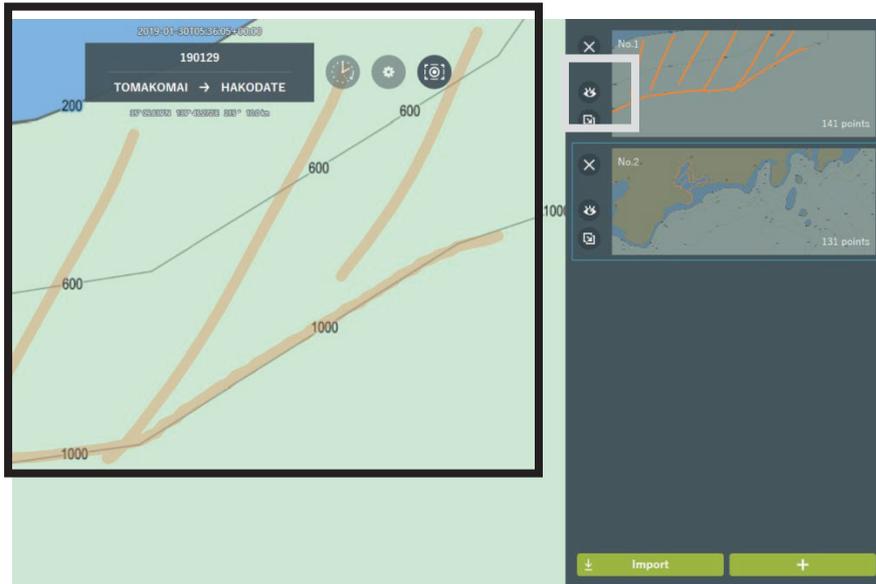
Note

Pressing the [X] icon deletes the handwritten data of the selected sheet.
In case of deleting by mistake, tap [Undo] icon immediately.
The route data can be restored. Refer to "3.7.6 Undo/Redo function" about Undo function

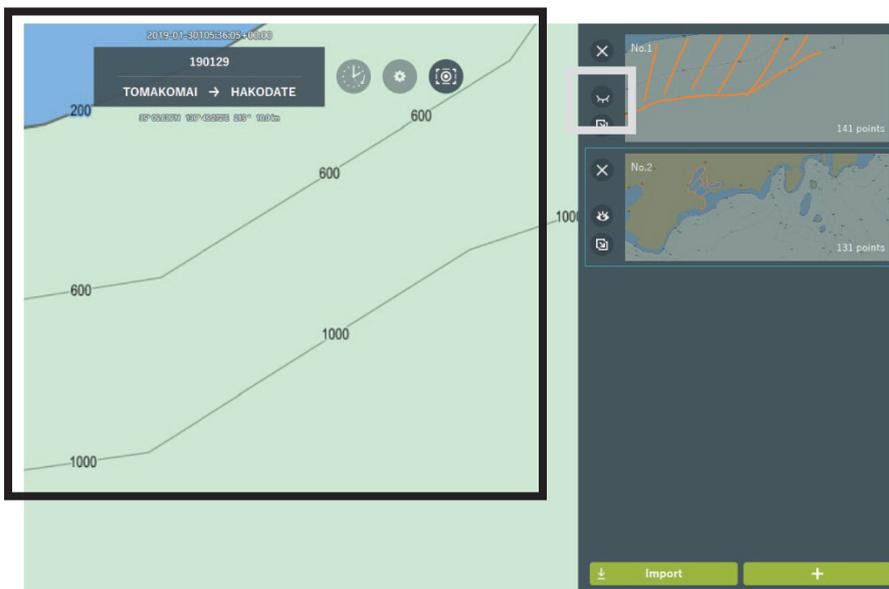
3.6.4 Setting Show/Hide of Handwritten Data

The Show/Hide setting of handwritten data can be changed.

1. Tap the [Show/Hide] icon to put the display into the Shown state .
Handwritten data is shown.



2. Tap the [Show/Hide] icon to put the display into the Hidden state .
Handwritten data is hidden.



Note

The handwritten data which is set on Hide status is not output to ECDIS.
If it needs to output, set the sheet to Display status.

Memo

The currently selected sheet is displayed even in the Hide state.

3.6.5 Copying Handwritten Data

Created handwritten data can be copied.

1. Tap the [Copy] icon in the handwriting mode.



The content of handwritten data is copied.

Note that sheets cannot be copied if more than 10 sheets are created.



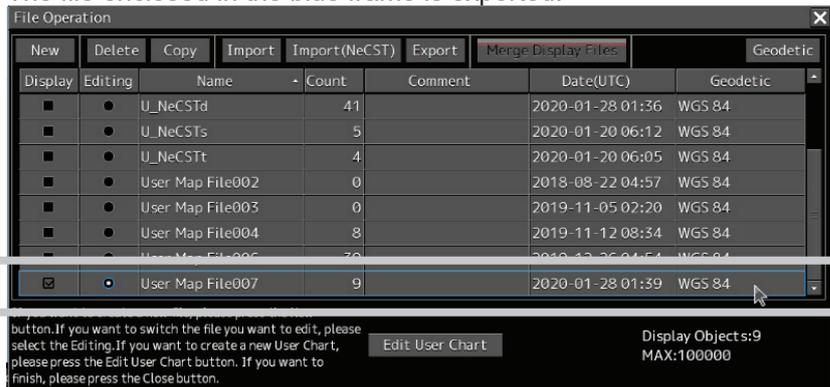
Memo

Up to 10 sheets can be created.

3.6.6 Importing Handwritten Data

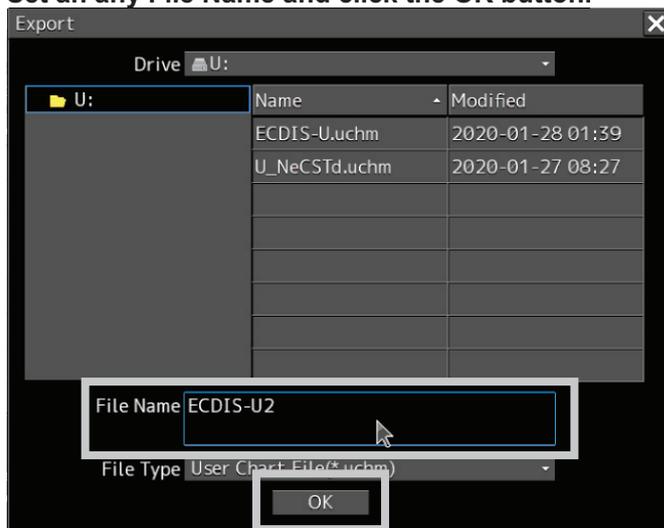
3.6.6.1 Export the User Chart from JAN-7201/9201

1. Click [Menu]-[User Chart]-[File Operation].
The File Operation dialog box of User Chart is displayed.
2. Create an any User Chart.
3. Select the file created in step 2 and click the [Export] button.
The file enclosed in the blue frame is exported.



The Export screen is displayed.

4. Select Drive: [U :].
5. Select File Type: [User Chart File(*.uchm)].
6. Set an any File Name and click the OK button.



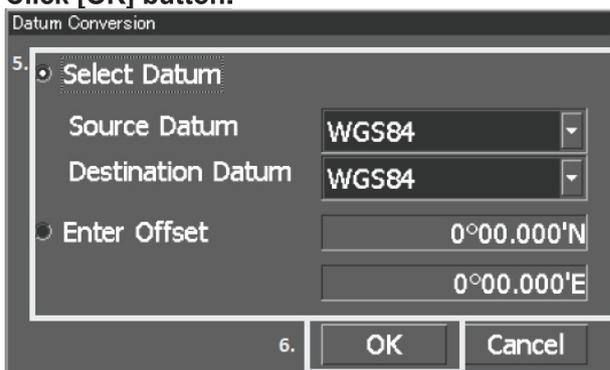
The User Chart is exported from ECDIS.

3.6.6.2 Export the User Chart from JAN-701B/901B

1. Create an any User Chart.
2. Select [(1) File]-[(5) Save] or [(6) Save as].
3. Set an any Name (within 8 characters) and click [Save] button.



4. [Datum Conversion] dialog box is displayed.
5. Select and set [Select Datum] or [Enter Offset].
6. Click [OK] button.



7. Click [Close] button.

3.6.6.3 Import Exported User Chart

The handwritten data created from other voyage data and the user chart data which is exported from ECDIS can be imported.

Compatible ECDIS devices are shown below.

No.	ECDIS device	Output format
1	JAN-701B/901B (JRC)	.uch
2	JAN-7201/9201 (JRC)	.uchm
3	FMD-3100/3200/3300 (FURUNO)	.xml

Note

About importable objects

- The object which can be imported as handwritten data of this equipment are Area and Line.
- Text objects of JAN-701B / 901B and JAN-7201/9201 can also be imported.
- In case of importing Symbol with text information, Symbol is not displayed but text information is displayed.
- The part of objects which is created in ECDIS cannot be imported or might be different shape.

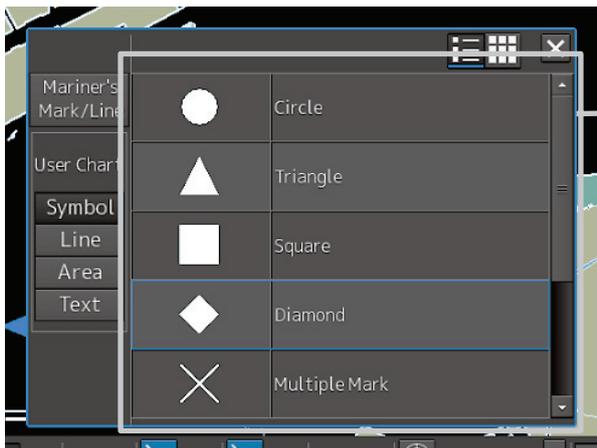
About area objects

- The Area which can be imported from JAN-701B/901B and JAN-7201/9201 are Polygon area and Warning area (Warning Detection). (Caution/Alarm are also same).

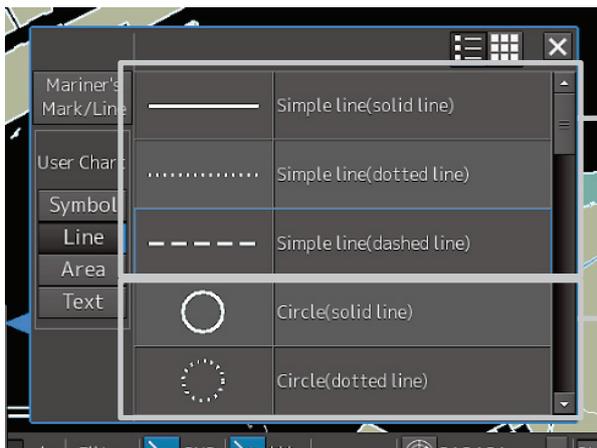
About line objects

- The Line which can be imported from JAN-701B/901B and JAN-7201/9201 are Simple Line Warning line. (Caution/Alarm are also same)
- Caution Detection/ Alarm Detection and Caution line/ Alarm line are imported to this equipment as Warning area/ Warning line.

Example of User Chart that can be imported and displayed from JAN-7201/9201.

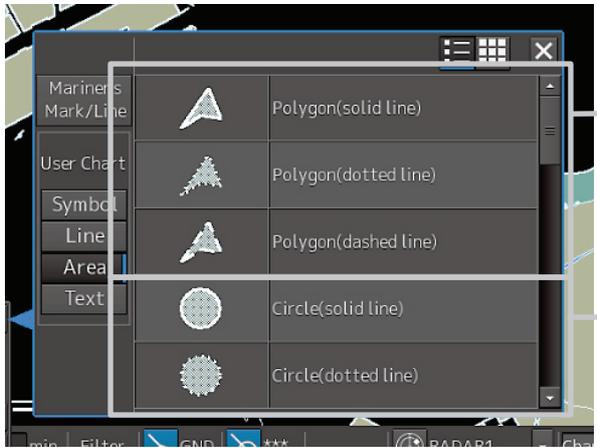


△ : Symbol can't be displayed.
Only the characters set in "Comment" of Symbol can be displayed.



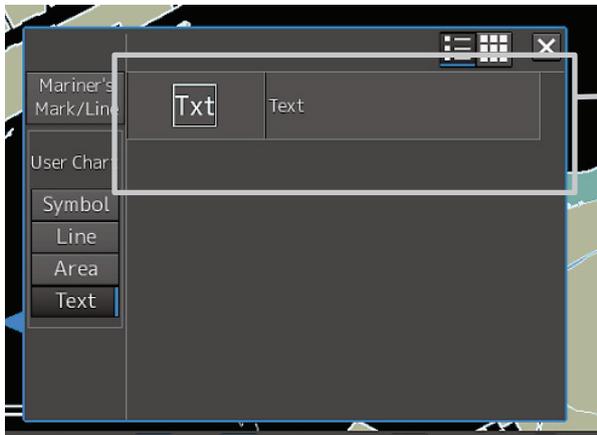
○ : Can be displayed. (No matter which type you select, it will be displayed as a solid line).

× : Can't be displayed.



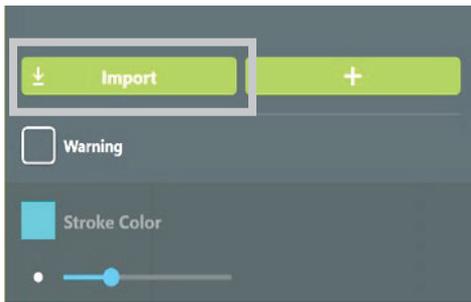
○ : Can be displayed. (No matter which type you select, it will be displayed as a solid line).

× : Can't be displayed.



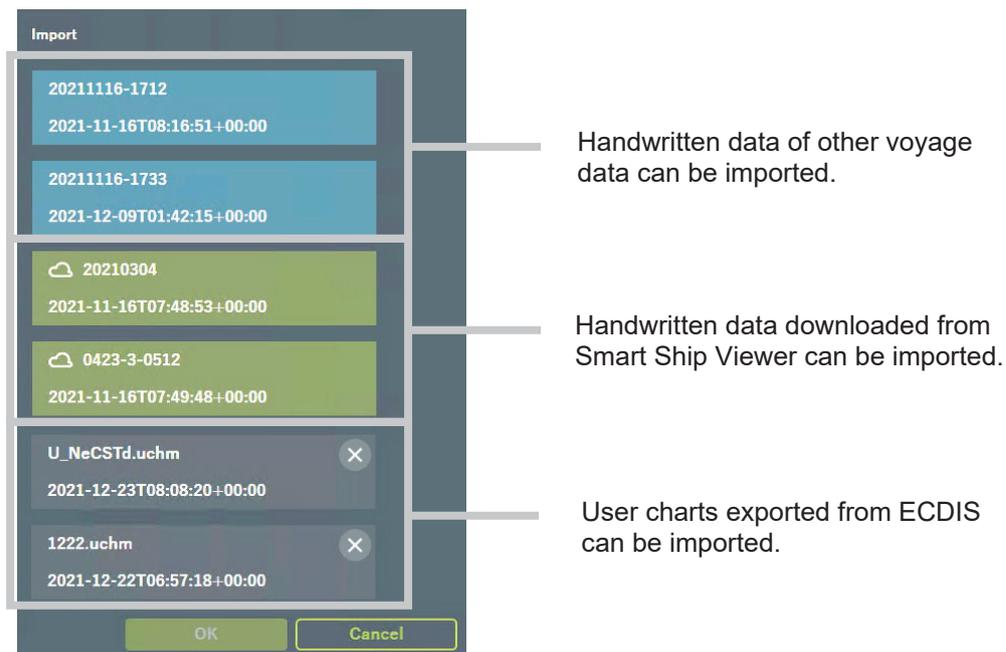
○ : Can be displayed.

1. Tap the [Import] button.



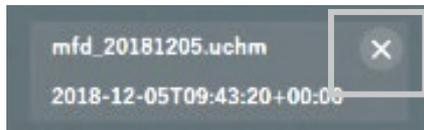
The handwritten data items that can be imported is listed.

2. Select the handwritten data item you want to import.

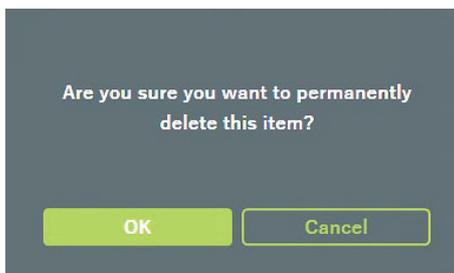


Memo

Unnecessary files can be deleted by tapping [x] button.



A confirmation popup is displayed.



To delete the file, tap the [OK] button.
To cancel the delete, tap the [Cancel] button.

3. Tap the OK button.

To cancel the import of the handwritten data, tap the [Cancel] button.

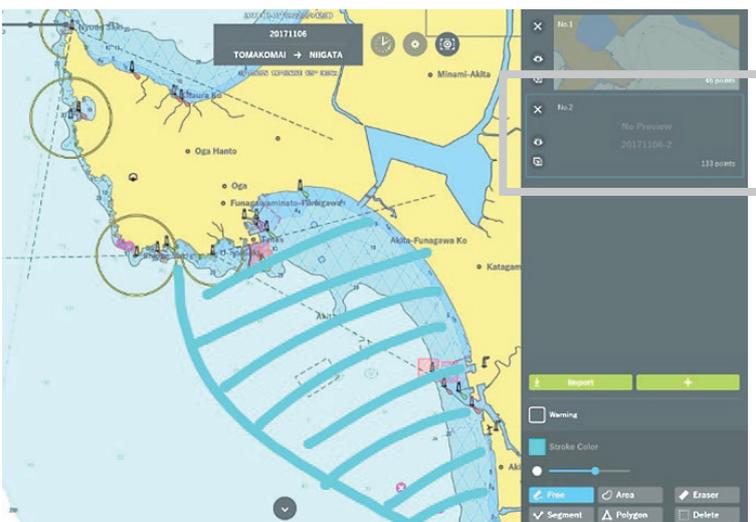


"Import completed." is displayed at the top of the screen and import of the handwritten data is completed.



4. Select the added handwritten data

The handwritten data is displayed on the chart.



Memo

Normal objects and Warning objects are imported on separate sheets.
The number that can be imported at once is approximately 20,000 points together, each of approximately 10,000 points.
The number of points displayed on the ECDIS side does not necessarily agree with the points in J-Marine NeCST.

Memo

After importing, pre-view image is not displayed.
When editing the data sheet of handwriting which is imported, the pre-view image at editing is displayed.

3.6.6.4 Import User Chart Distributed to NeCST

Handwritten data received from Smart Ship Viewer can be imported.

For information on handwritten data distribution, refer to "3.3.5 Creating Voyage Data Using the Voyage Data Distribution Function".

For the procedure for importing the received handwritten data, refer to "3.6.6.2 Import Exported User Chart".

3.6.7 Exporting Handwritten Data

Handwritten data created is automatically saved every five seconds; no operation is needed. Compatible ECDIS devices are shown below.

No.	ECDIS device		Output format
1	JAN-701B/901B	(JRC)	U_NeCSTd.uch
2	JAN-7201/9201	(JRC)	U_NeCSTd.uchm
3	FMD-3100/3200/3300	(FURUNO)	U_NeCSTd.xml

Note

There are cases where exported handwritten data cannot be used on ECDIS. In the case, check the instruction manual of the ECDIS and correct the parameter value of handwritten data to a value less than the upper limit.

3.6.7.1 Using Exported Handwritten Data on ECDIS

The following is an example of using on ECDIS (JAN-7201/9201 and JAN-701B/901B) handwritten data created on this equipment.

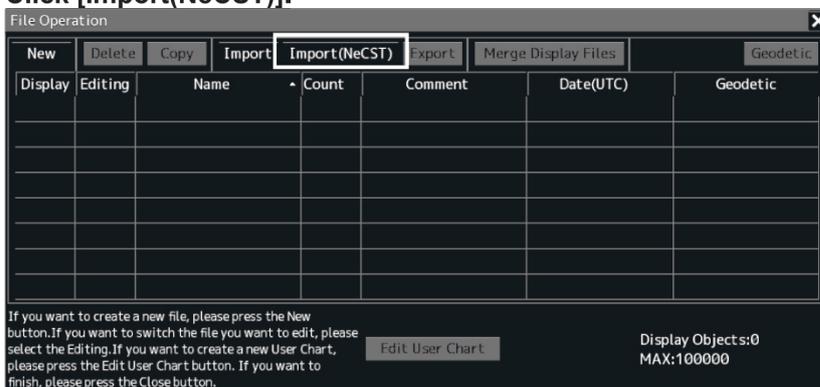
[JAN-7201/9201]

Memo

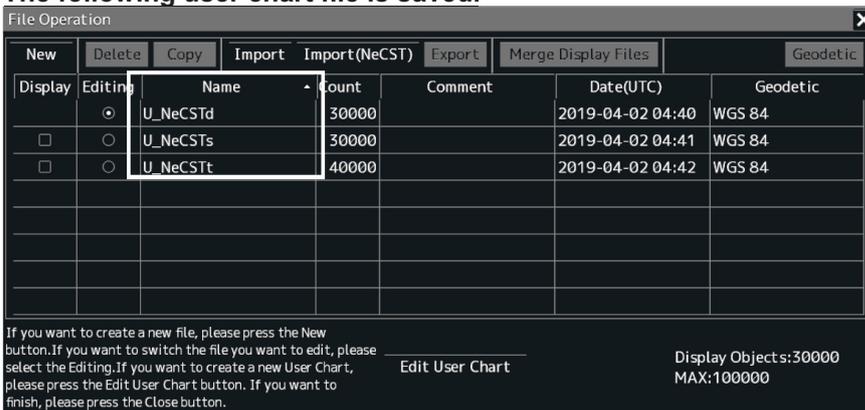
If the JAN-7201/9201 is started before J-Marine NeCST, linking may not work properly. Restart the JAN-7201/9201.

■ If the Soft Version of JAN-7201/9201 is 01.30.110 or later, you can use the following procedure.

1. Click [Menu]-[User Chart]-[File Operation].
The File Operation dialog box of User Chart is displayed.
2. Click [Import(NeCST)].



3. The following user chart file is saved.



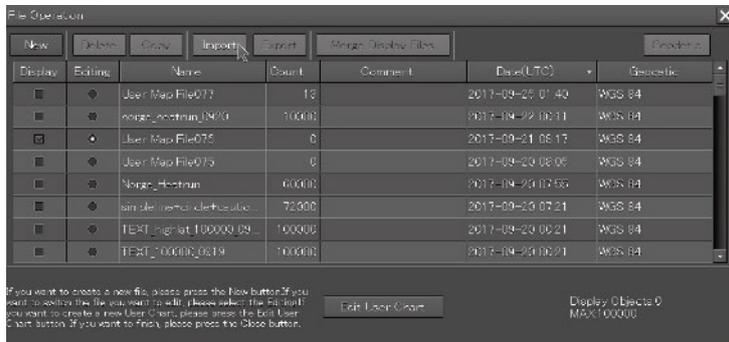
Memo

The name of the file exported from J-Marine NeCST is fixed.
 If a file with the same name is already stored, it will be overwritten.
 If you do not want to overwrite, change the name of the imported file with ECDIS.

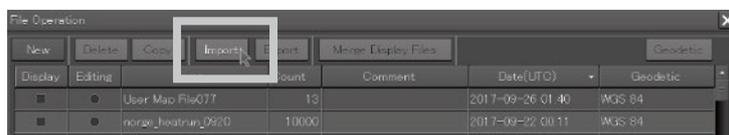
■ If the Soft Version of JAN-7201/9201 is earlier than 01.30.110, you can use the following procedure.

1. Click [Menu]-[User Chart]-[File Operation].

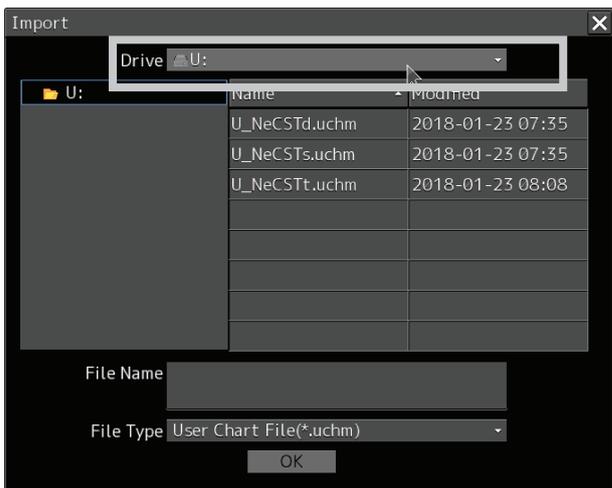
The File Operation dialog box of User Chart is displayed.



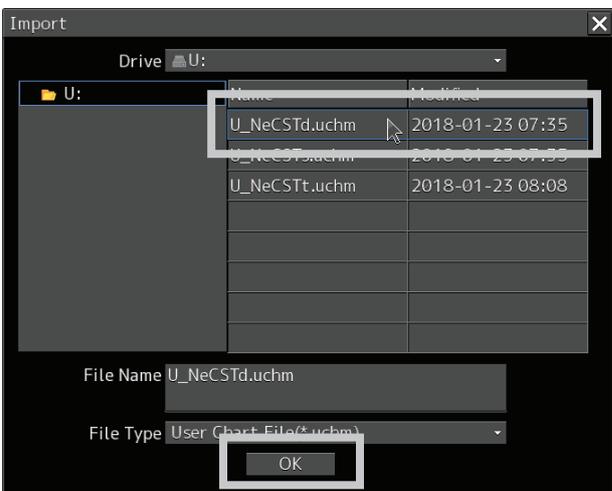
2. Click [Import] button.



3. Select [U:] on [Drive].

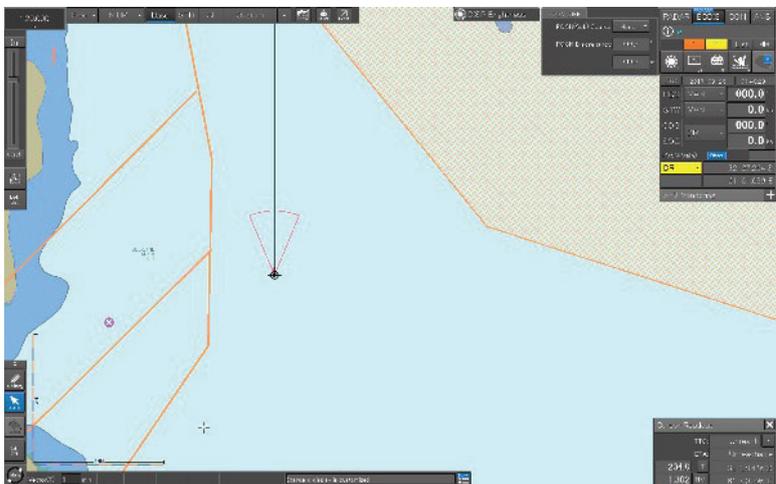


4. Select [U_NeCSTd.uchm] and click [OK].



Memo
 The name of the file exported from J-Marine NeCST is fixed.
 If the exported file from NeCST have imported with ECDIS before, overwrite confirmation may be displayed.
 If overwriting is not desired, change the name of the imported file with ECDIS.

The handwritten data created on this equipment can be displayed on ECDIS.

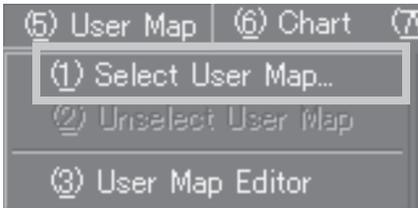


Memo

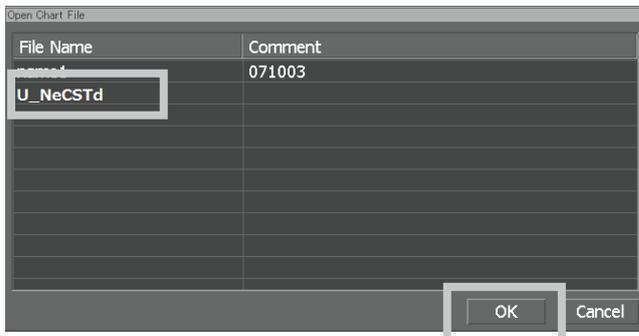
If handwritten data imported into ECDIS is not displayed on the screen, it may be out of scale to be displayed.
After importing, adjust display scale setting on ECDIS.

[JAN-701B/901B]

1. In the Normal menu, select [(5)User Map] – [(1)Select User Map] in that order.



2. Select [U_NeCSTd], and click [OK] button. Import will be started.
The Handwritten data which is created is displayed.



Memo

If handwritten data imported into ECDIS is not displayed on the screen, it may be out of scale to be displayed.
After importing, adjust display scale setting on ECDIS.

3.7 Tool Function

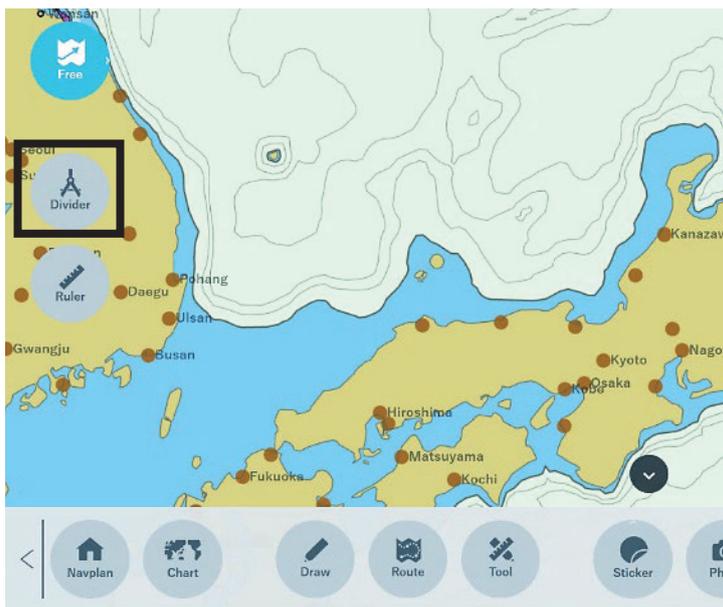
The Tool function enables measurement of distance and bearing between points. Use measured values as a guide for creating a route or handwritten data. The tool function has the following sub functions:

Function name	Description	Related section
Divider	To measure the distance and bearing of two points	3.7.1 Divider Function
Measure	To measure the distance between any points	3.7.2 Measure Function
Circle	To place a distance ring at any point	3.7.3 Circle Function
Loupe	To display the latitude and longitude of any point	3.7.4 Loupe Function
Ruler	To place the ruler on the screen	3.7.5 Ruler Function
Undo/Redo	Redoing the last operation	3.7.6 Undo/Redo Function

3.7.1 Divider Function

Use this function to measure the distance and bearing of two points.

1. Tap the [Divider] icon.



2. Touch between two points you want to measure.

The distance and bearing between the two points are displayed while the [Divider] icon is kept touched.



3.7.2 Measure Function

This function enables measurement of the route distance and planned sailing time for each route. Use this function to compare multiple measurement results to make the comparison result useful for route creation.

3.7.2.1 Adding Route

1. Tap the [Measure] icon.



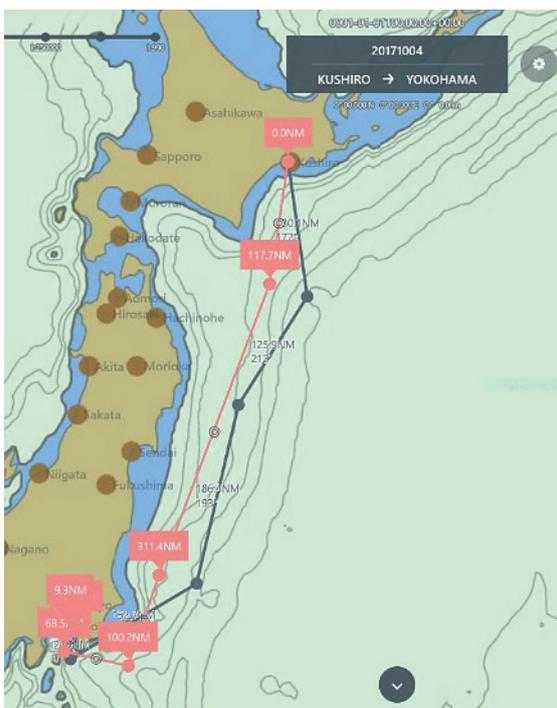
2. Tap the [+] button.



A route is added.



3. Tap on the chart to set a new route.



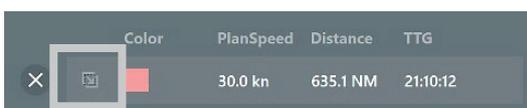
Memo

Use the PlanSpeed slider to change the planned speed for the route.
The distance and planned sailing time are recalculated every time a change is made.

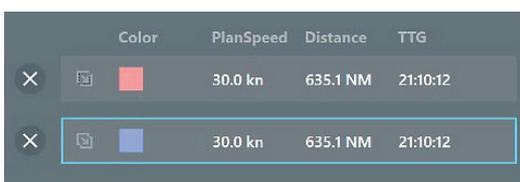
Up to 32 routes can be created.

3.7.2.2 Copying Route

1. Tap the [Copy and modify] icon of the course.

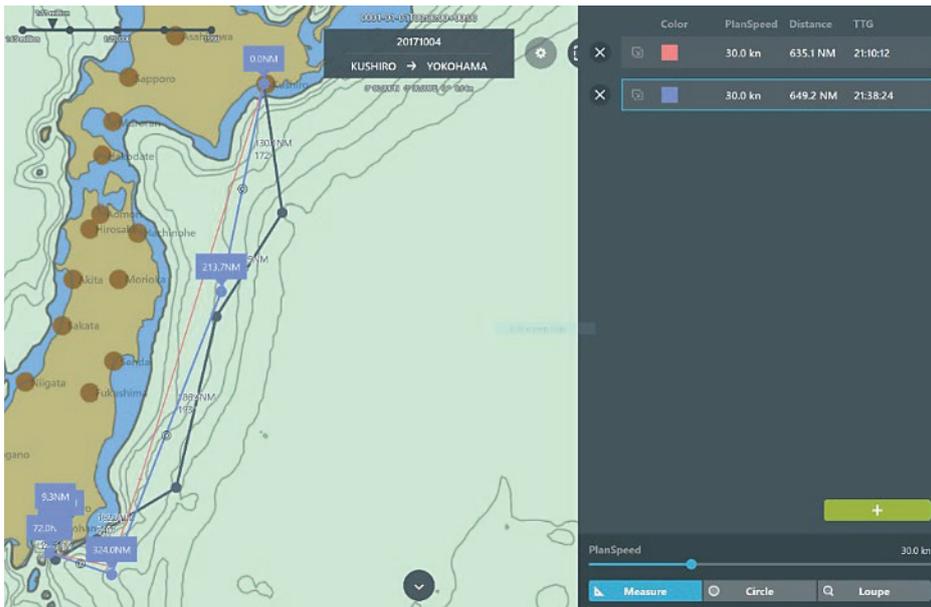


The route is copied.



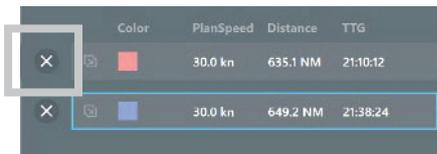
2. Edit the copied route.

The route and planned sailing time can be adjusted while seeing the old route.

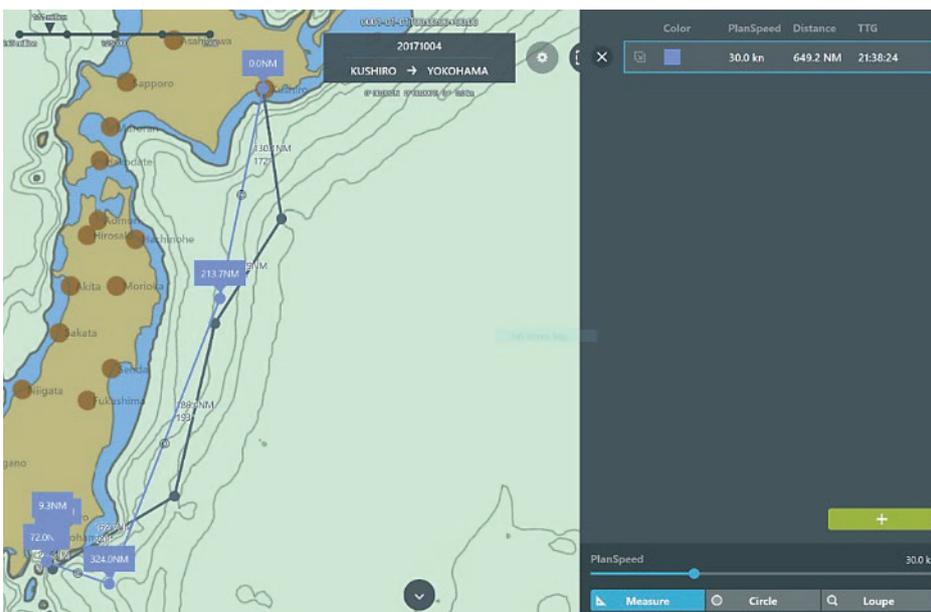


3.7.2.3 Deleting Route

1. Tap the [X] icon of the route you want to delete.



The selected route is deleted.

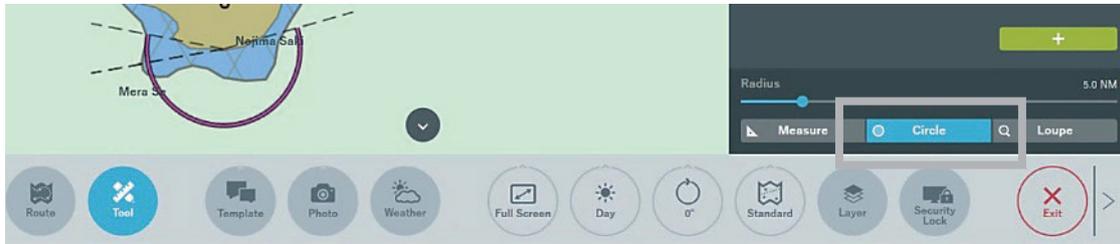


3.7.3 Circle Function

This function displays a distance ring at any point and is used to check the distance from a specific point.

3.7.3.1 Adding Circle

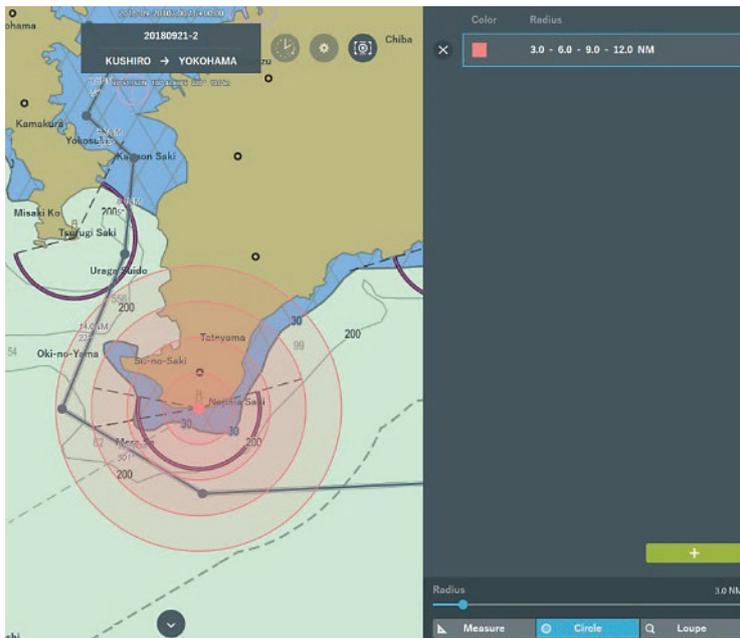
1. Tap the [Circle] icon.



2. Tap the [+] button.



A circle is added on the chart.



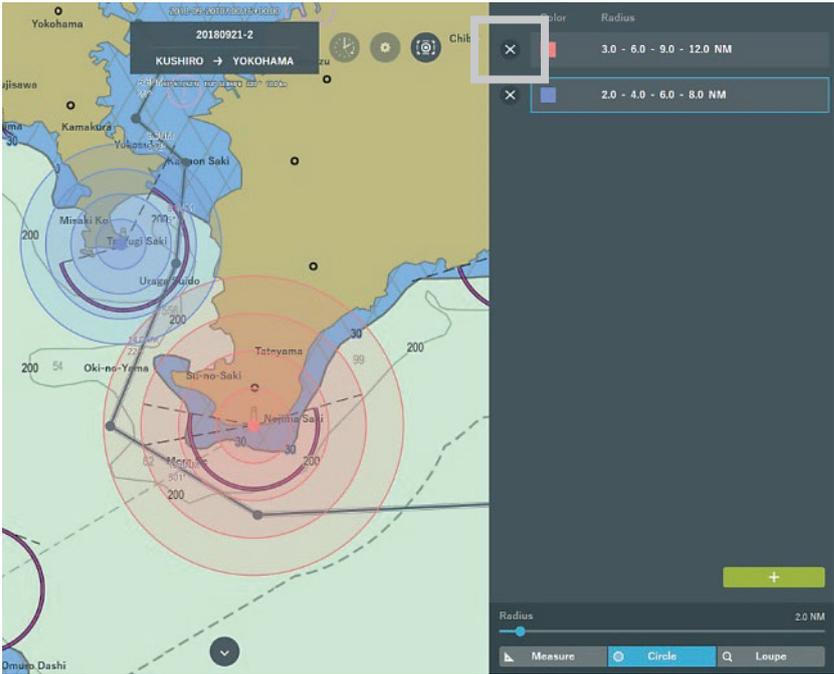
3. Drag and drop the circle to set a specific point as a reference point.
Route can be created while checking the distance from a specific point.

Memo

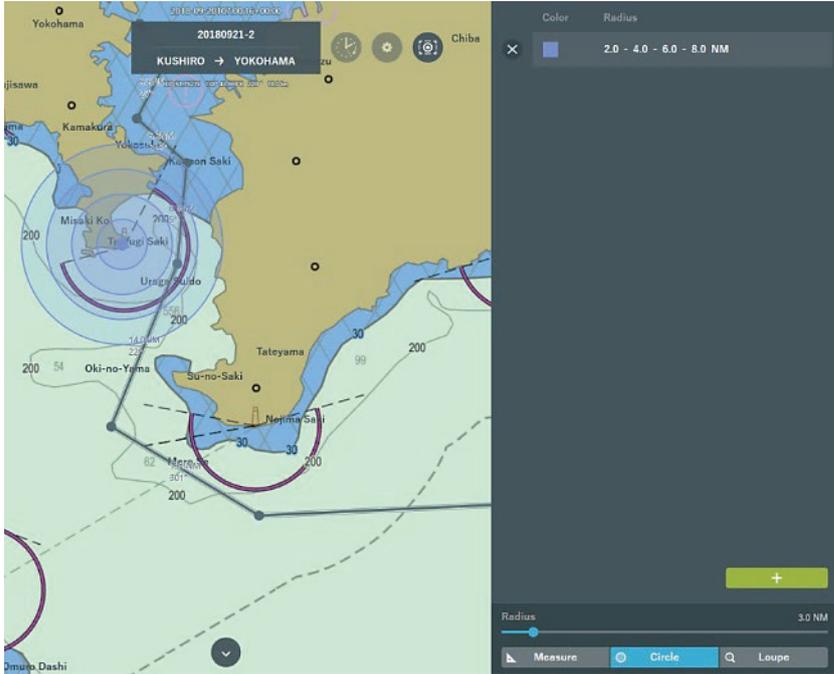
To change the circle radius, use the Radius slider.
Up to 32 circles can be created.

3.7.3.2 Deleting Circle

1. Tap the [X] icon of the circle you want to delete.



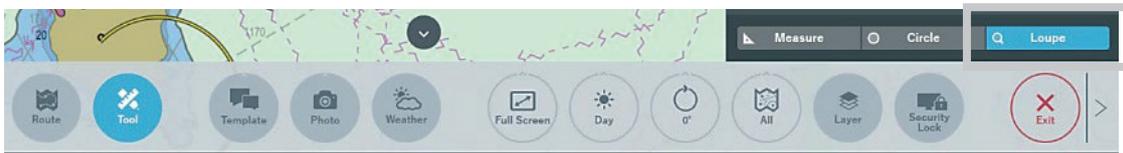
The selected circle is deleted.



3.7.4 Loupe Function

This function is used to check the latitude and longitude information and object information of the chart.

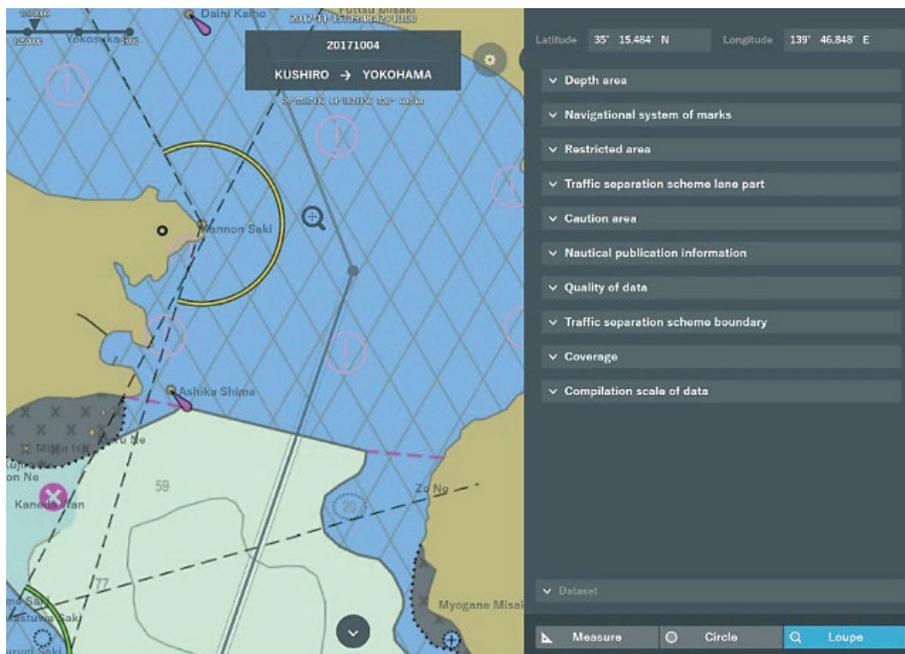
1. Tap the [Loupe] icon.



A loupe is displayed on the chart.



2. Drag and drop the Loupe icon and move it to the point that you want to check. The latitude and longitude information and chart information of the point are displayed.



3.7.5 Ruler Function

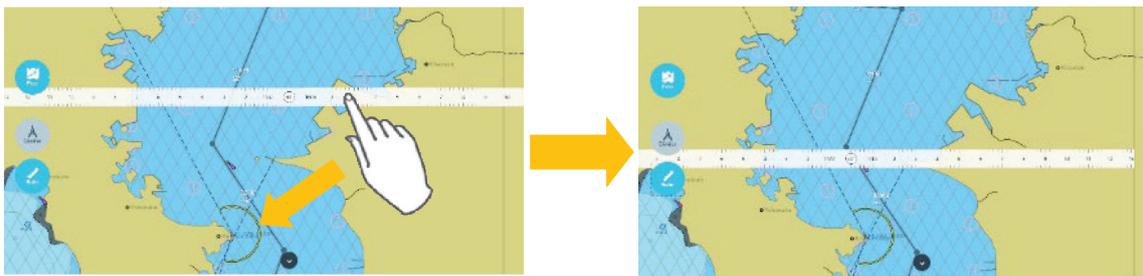
This function enables the user to place a ruler on the screen and create a route while measuring distance and bearing.

1. Tap the [Ruler] icon.

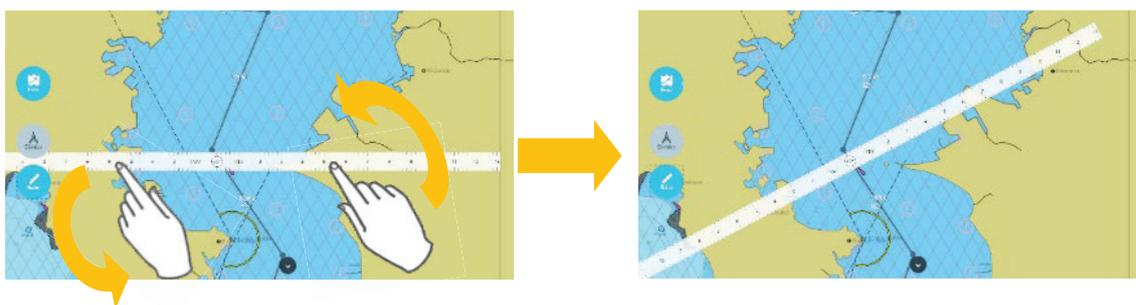
A ruler is displayed on the screen.



2. Adjust the position and angle of the ruler to check the distance and bearing you want to measure.



Adjusting a position



Adjusting an angle

Memo

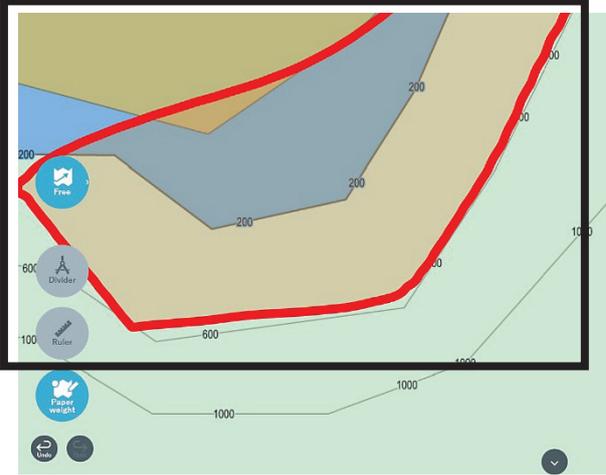
Touching the center circle of the ruler enables switching of the distance unit between [NM] and [m].

3.7.6 Undo/Redo Function

It is possible to operate the following

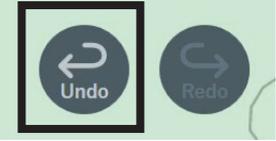
- Undo: Canceling the operate that route making and handwriting
- Redo: Redoing the operate of canceling

1. Carry out route making or handwriting

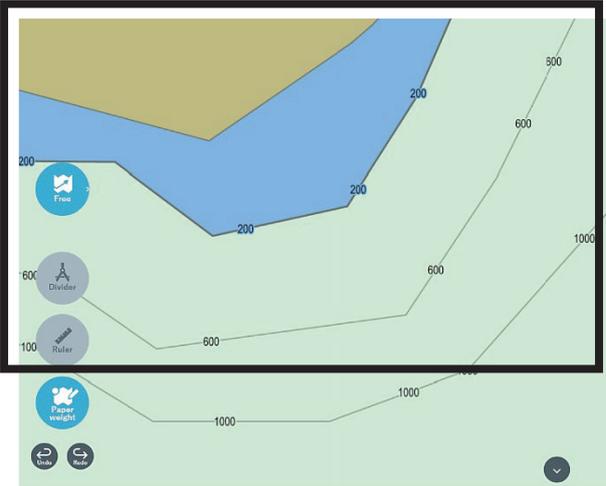


e.g. Add Area

2. Tap [Undo] icon



The last operating is canceled



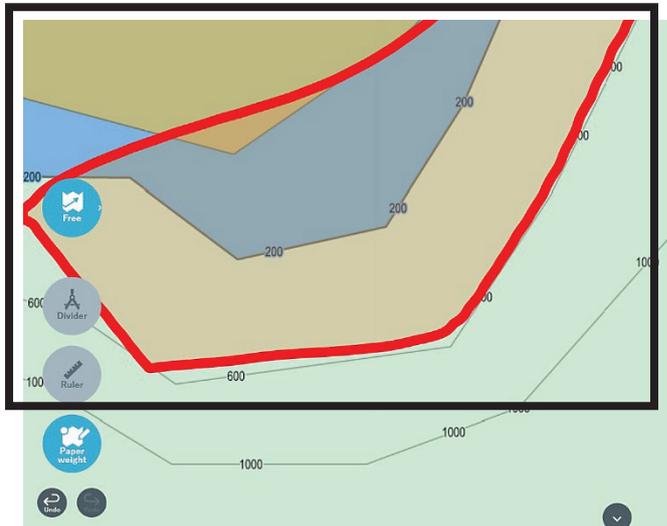
Memo
The maximum operations of recordable is 50.
By selecting navigation data, the recorded operation is deleted.

3. Tap [Redo] icon

In case of redoing canceled operating, tap [Redo] icon



Canceled operating is redone.



Memo

The usable functions of Undo / Redo are as follow

- Draw
- Route
- Memo
- Photo

3.8 Template Function

Pieces of work to be done on every port departure/entry are provided as templates. Use them by placing them on the route.

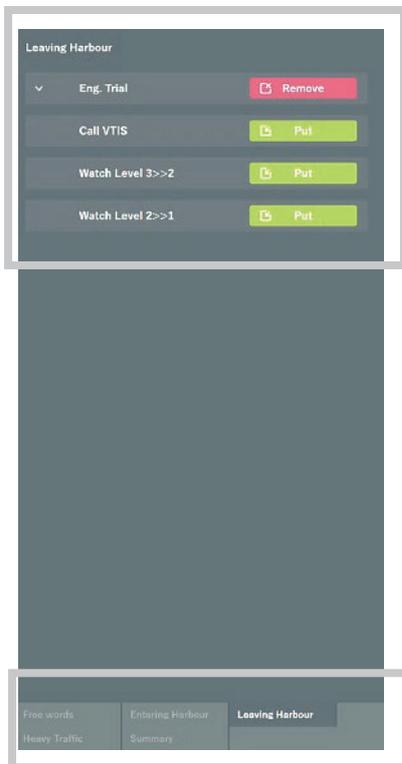
3.8.1 Placing Template

1. Tap the [Template] icon.
A template list is displayed.



Pieces of work to be done on port departure/entry or during voyage in congested sea are already registered. Alternatively, any character string can be registered as a template.

2. Tap the [Put] icon of any template.



Template List

Put: Places the template on the chart.
Remove: The template is already placed on the chart.
Tapping the [Remove] icon removes the placed template.

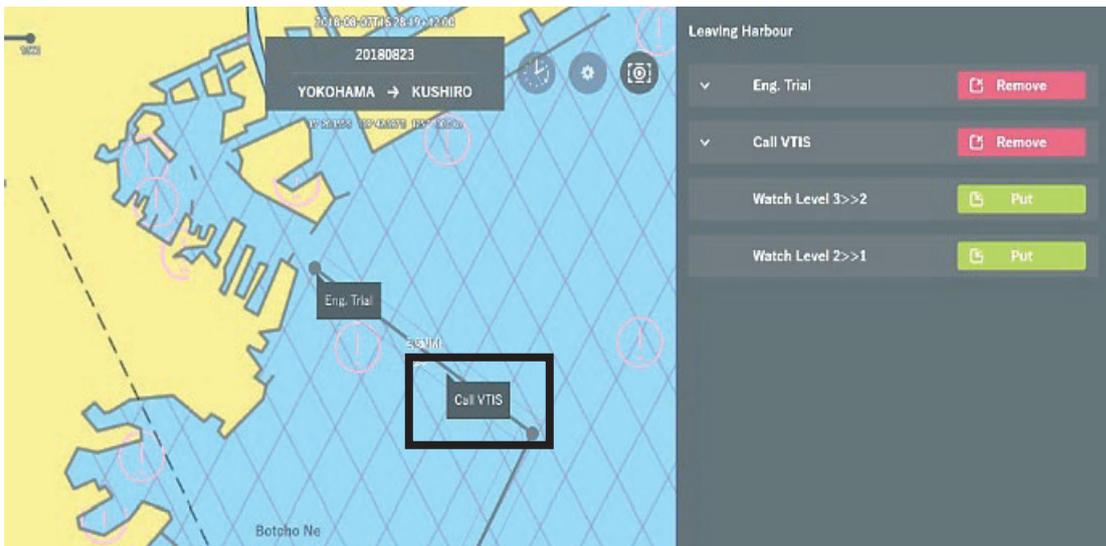
Template scene

Free words: Any character string can be placed as a template.
Leaving Harbour: Used for Leaving Harbour.
Entering Harbour: Used for Entering Harbour.
Heavy Traffic: Used for Heavy Traffic.
Summary: The history of Check/Uncheck/Update in Template is displayed

Memo

Up to 100 templates can be created.

The template is displayed on the chart.

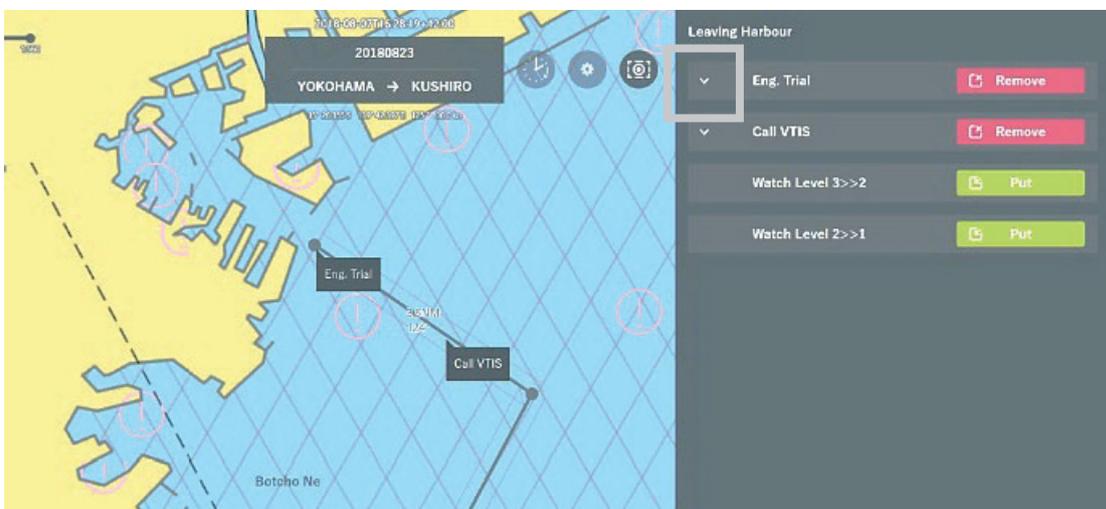


- 3. **Place the template on the route.**
Move the template at the position where it is needed for work.

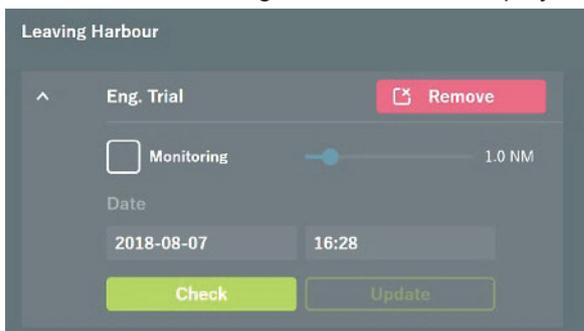
3.8.2 Checking Template

The date when work or work check was performed can be recorded in a template placed on the chart.

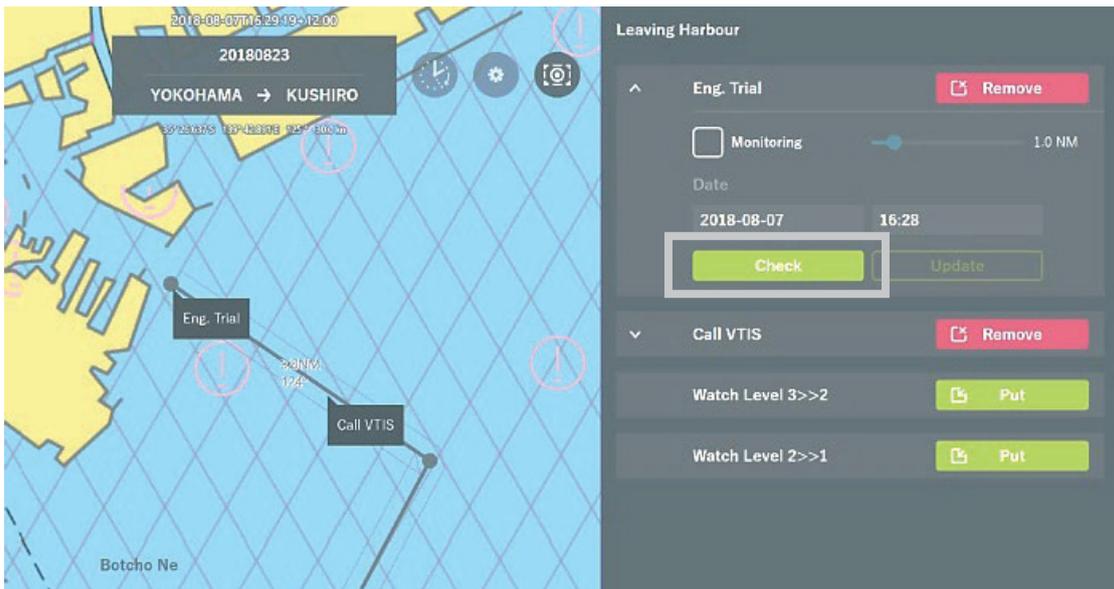
- 1. **Tap the [v] button of the placed template.**



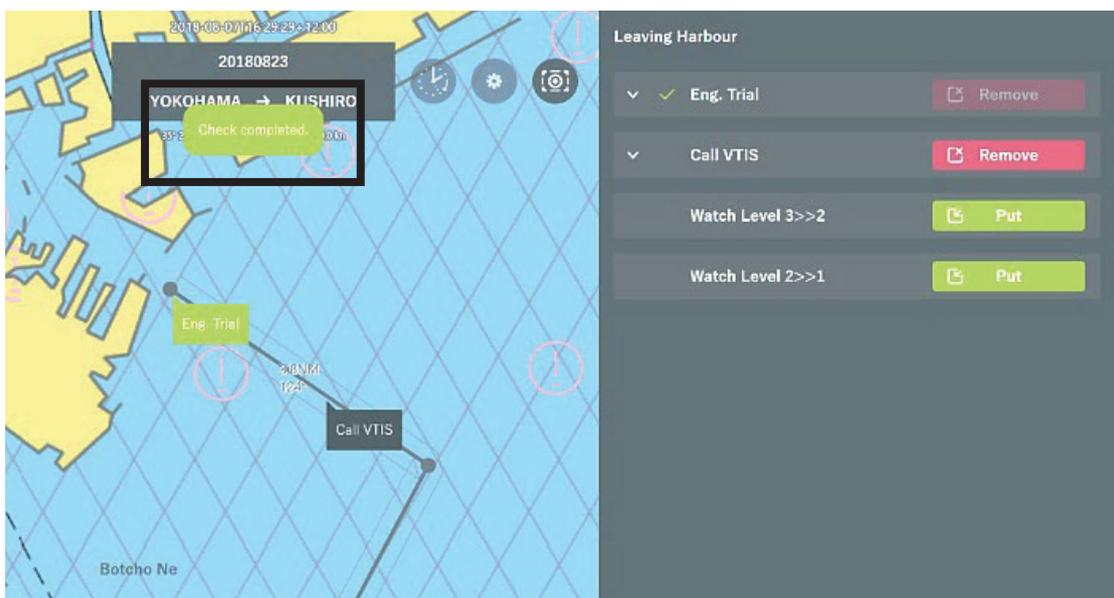
The check date management screen is displayed.



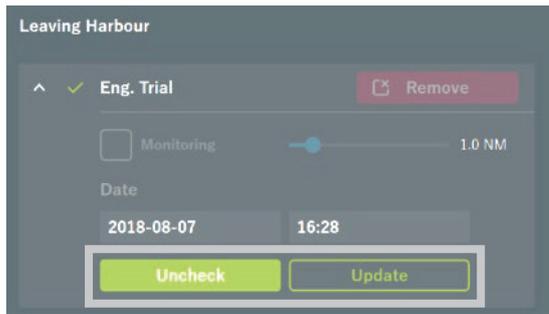
2. Tap the [Check] button.



“Check completed.” is displayed and the time when check was performed is automatically recorded.



Memo

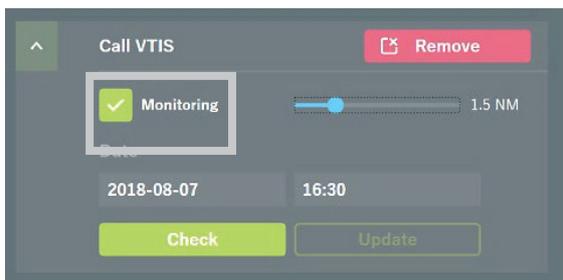


- **Uncheck:** Used to uncheck the checked template.
- **Update:** Used to update the check date.
Enter a date manually and tap the [Update] button.
Then, the check date is updated.

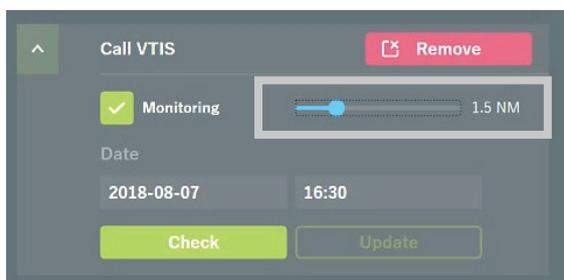
3.8.3 Monitoring Template

Notice is displayed when the ship approaches a certain distance centering on the placed Template.

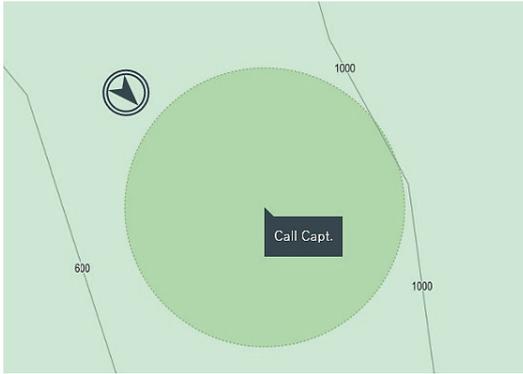
1. Place the Template
2. Check on the [Monitoring] of the placed Template.



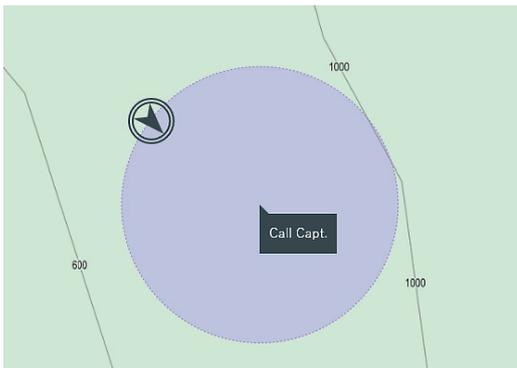
3. For the work indicated by Template, set the distance that need to prepare as the radius (0.5NM–5.0NM)



Memo



The setting monitoring circle is displayed in green on the chart.
Refer it for deciding the distance.



When own ship is already in contact with the monitoring circle, there is the notification and, it is displayed in purple.

When the ship contacts the monitoring circle of Template, the notification is displayed on the NeCST screen.



After tapping the notification, Template screen is displayed.
If checking Template or Monitoring off, the notification disappears.
The notification can also be deleted by tapping the × button in the notification.

3.8.4 Confirming the History of Template

It is possible to list the history of Template Check/Uncheck/Update with the selected voyage data.

1. Select [Summary] tab on the Template screen.



The history of Check/Uncheck/Update is displayed

Summary

Reload

Heavy Traffic Leaving Harbour Entering Harbour
 Free words

Category	Item	Event	Time
Entering Harbour	S/B Eng.	Check	2018-08-27T14:35:44+12:00
Entering Harbour	Watch Level 2->3	Check	2018-08-27T14:35:37+12:00
Entering Harbour	Watch Level 1->2	Check	2018-08-27T14:35:26+12:00
Entering Harbour	Start Reducing RPM to 100	Check	2018-08-27T14:34:09+12:00
Entering Harbour	Abort Point	Check	2018-08-27T14:34:13+12:00
Entering Harbour	Astern Test	Check	2018-08-27T14:34:17+12:00
Entering Harbour	Watch Level 2->3	Check	2018-08-27T14:35:28+12:00
Entering Harbour	Watch Level 2->3	Uncheck	2018-08-27T14:35:32+12:00
Entering Harbour	1hr notice to E/R	Check	2018-08-27T14:33:39+12:00
Entering Harbour	S/B Eng.	Update	2018-08-27T14:35:46+12:00
Free words	Call CH123	Check	2018-08-27T14:35:10+12:00
Heavy Traffic	Astern Test	Check	2018-08-27T14:36:34+12:00
Heavy Traffic	Call VTIS	Check	2018-08-27T14:36:31+12:00
Heavy Traffic	Watch Level 1->2	Check	2018-08-27T14:36:37+12:00
Heavy Traffic	Watch Level 2->3	Check	2018-08-27T14:36:39+12:00
Leaving Harbour	Call VTIS	Check	2018-08-27T14:36:21+12:00
Leaving Harbour	Eng. Trial	Check	2018-08-27T14:36:19+12:00
Leaving Harbour	Watch Level 3->2	Check	2018-08-27T14:36:23+12:00
Leaving Harbour	Watch Level 2->1	Check	2018-08-27T14:36:26+12:00

Reload: Reading latest information

It is possible to filter by Category.

Check: Display

Not check: Do not display

By tapping [Category], [Item], [Time], it is possible to sort the list in ascending / descending order of each item.

3.8.5 Exporting Template

Templates created are automatically saved every five seconds; no operation is needed. Compatible ECDIS devices are shown below.

No.	ECDIS device	Output format
1	JAN-701B/901B (JRC)	U_NeCSTt.uch
2	JAN-7201/9201 (JRC)	U_NeCSTt.uchm
3	FMD-3100/3200/3300 (FURUNO)	U_NeCSTt.xml

Note

There are cases where an exported template cannot be used on an ECDIS.

In the case, check the instruction manual of the ECDIS and correct the parameter value of template data to a value less than the upper limit.

3.8.5.1 Using Exported Template on ECDIS

The following is an example of using on ECDIS (JAN-7201/9201 and JAN-701B/901B) handwritten data created.

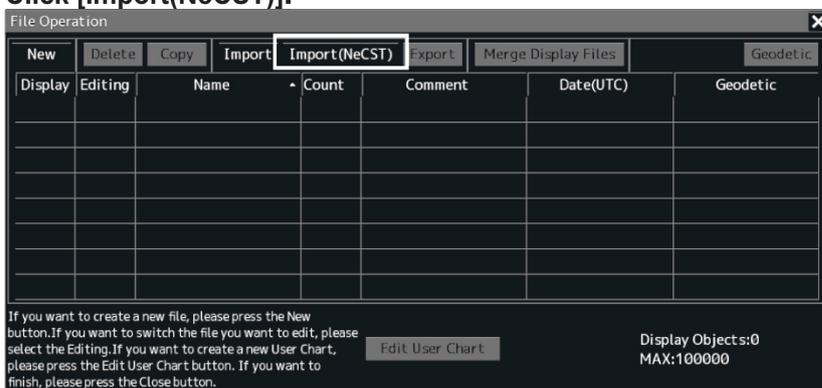
[JAN-7201/9201]

Memo

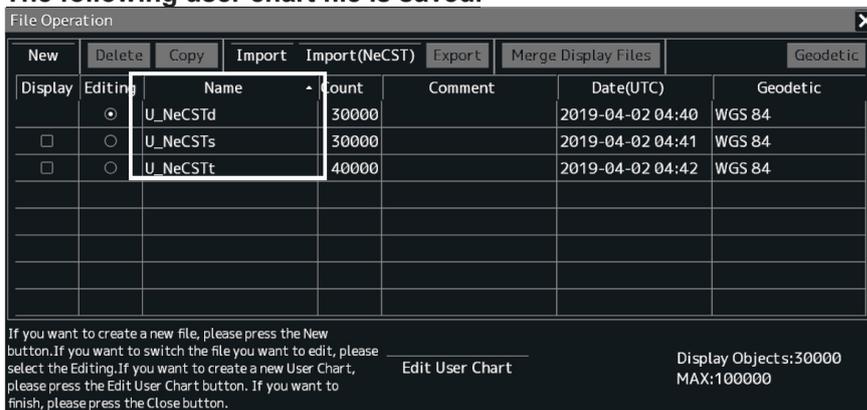
If the JAN-7201/9201 is started before J-Marine NeCST, linking may not work properly. Restart the JAN-7201/9201.

■ If the Soft Version of JAN-7201/9201 is 01.30.110 or later, you can use the following procedure.

1. Click [Menu]-[User Chart]-[File Operation].
The File Operation dialog box of User Chart is displayed.
2. Click [Import(NeCST)].



3. The following user chart file is saved.

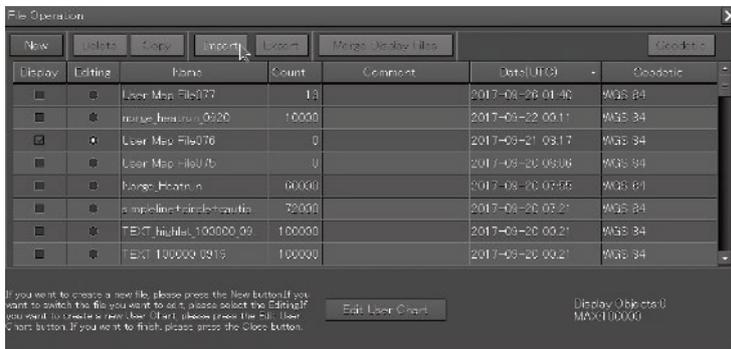


Memo

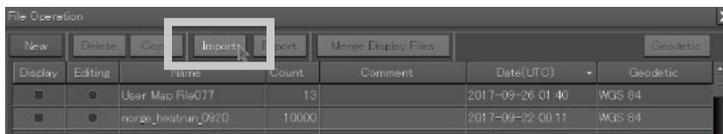
The name of the file exported from J-Marine NeCST is fixed. If a file with the same name is already stored, it will be overwritten. If you do not want to overwrite, change the name of the imported file with ECDIS.

■ If the Soft Version of JAN-7201/9201 is earlier than 01.30.110, you can use the following procedure.

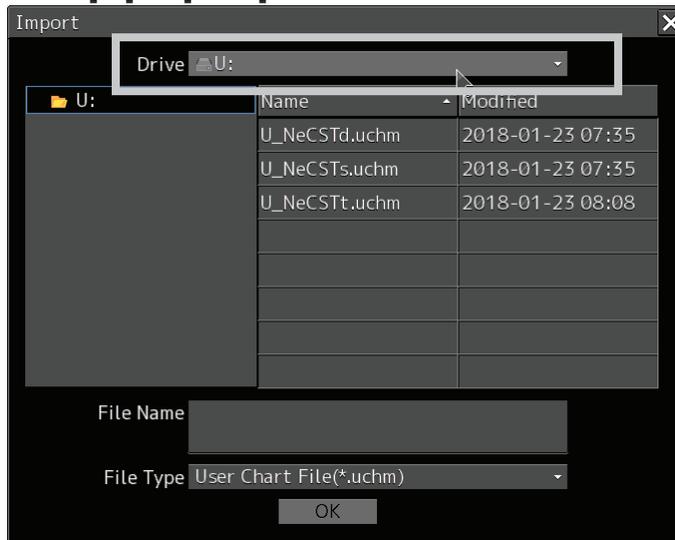
1. Click [Menu]-[User Chart]-[File Operation].
The File Operation dialog box of User Chart is displayed.



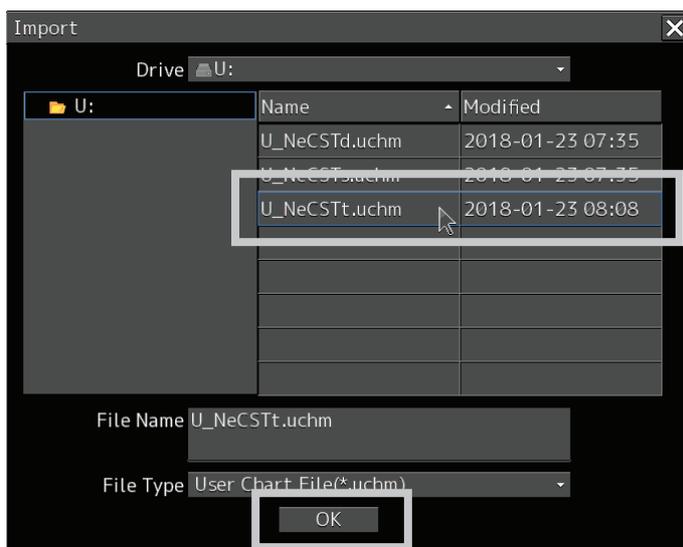
2. Click [Import] button.



3. Select [U:] on [Drive].



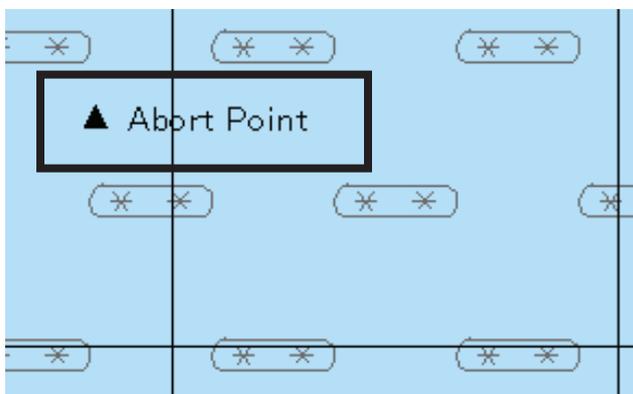
4. Select [U_NeCSTt.uchm] and click [OK] button.



Memo

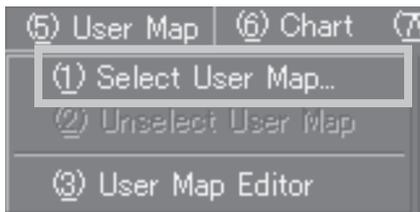
The name of the file exported from J-Marine NeCST is fixed.
If the exported file from NeCST have imported with ECDIS before, overwrite confirmation may be displayed.
If overwriting is not desired, change the name of the imported file with ECDIS.

The templates created can be used on ECDIS.

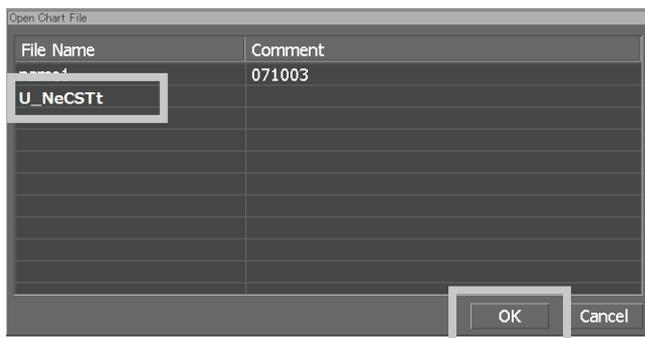


[JAN-701B/901B]

1. In the Normal menu, select [(5)User Map] – [(1)Select User Map] in that order.



2. Select [U_NeCSTt], and click [OK] button. Import will be started.
The Handwritten data is displayed on ECDIS.

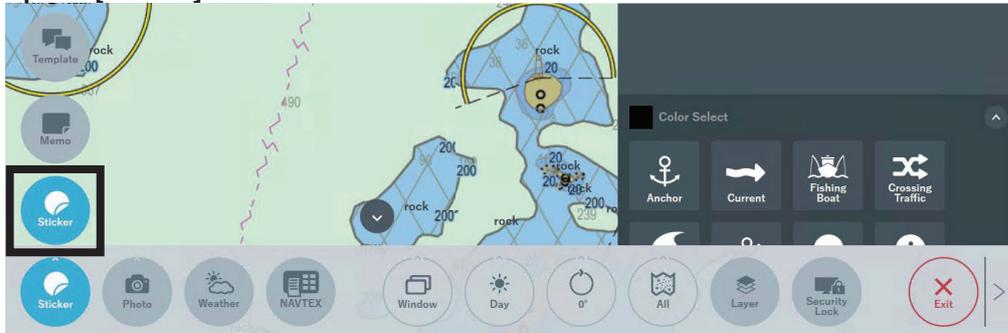


3.9 Sticker Function

This function enables placing a sticker on the chart. (For example, anchor point and current point.)

3.9.1 Placing Sticker

1. Tap the [Sticker] icon.



The sticker list is displayed.



Tap to see all stickers.
Tap it again to return.

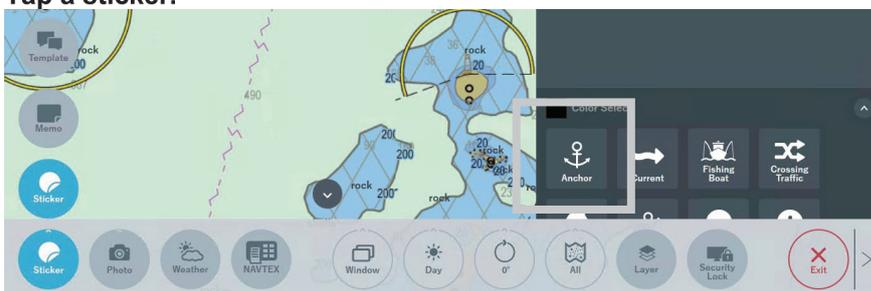
Examples of the use of a sticker are shown in the table below.

Name	Sticker	Example of use
Anchor		Place the sticker at a safe anchor area.
Current		Place the sticker at a tidal current area to be noted.
Fishing Boat		Place the sticker at an area full of fishing boats.
Crossing Traffic		Place the sticker where there are crossed routes or many routes running by.
Typhoon		Place the sticker where a typhoon has been formed.

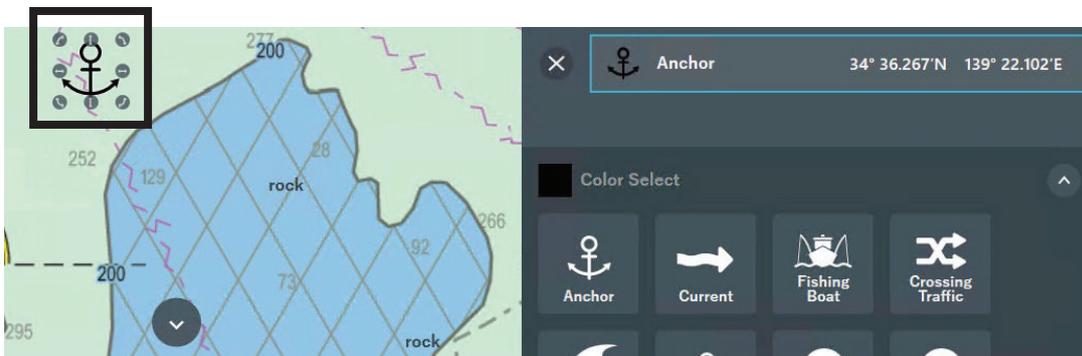
The stickers added since NeCST Package Ver. 1.2.3.41 are listed in the table below.

Name	Sticker	Example of use	Name	Sticker	Example of use
No Anchoring		Place the sticker in the no-anchor area.	Dangerous object		Place the sticker in the area where the dangerous object exists.
Prohibited		Place the stickers in prohibited areas.	Spoil area		Place the sticker in the spoil area.
Restricted		Place the stickers in restricted areas.	Submarine zone		Place the sticker in the submarine navigation area.
Shipwreck		Place the sticker in the shipwreck area.	Wind motor		Place the sticker on the wind turbine area.
Traffic caution		Place the stickers in traffic caution areas.	PSSA		Place the sticker in the Particularly Sensitive Sea Areas.
Fishing reef		Place the sticker on the reef area.			

2. Tap a sticker.



The sticker is placed on the chart. Move it to the position where it is needed for work.



Memo
Up to 100 stickers can be placed.

3.9.2 Editing Sticker

The following kinds of editing can be made to a placed sticker.

- To change the sticker color
- To change the transparency of the sticker
- To change the direction and size of the sticker.

3.9.2.1 Changing Sticker Color

The color of the sticker to place can be changed.

1. Tap the [Color Select] icon.



The color pallet is displayed.



2. Choose a new color and tap the [OK] button.

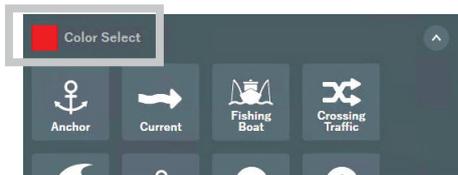
To cancel the change of the color, tap the [Cancel] button.



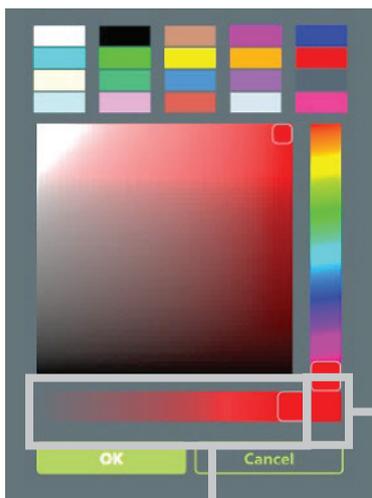
3.9.2.2 Changing Sticker's Transparency

The transparency of a sticker can be changed.

1. Tap the [Color Select] icon.



The transparency is displayed.



The currently set transparency is displayed.

Displays the transparency bar and the range of transparency.

2. Adjust the transparency bar and tap the [OK] button.

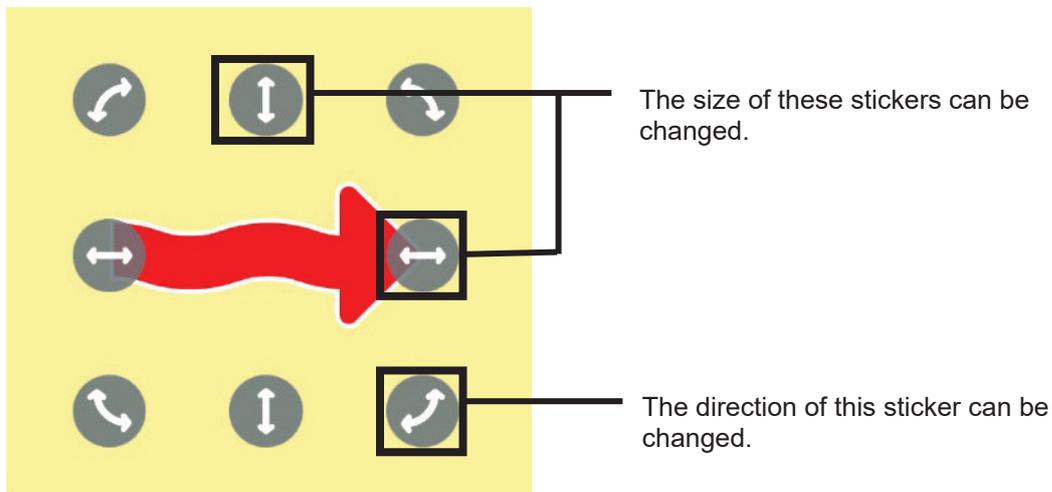
To cancel the change of the transparency, tap the [Cancel] button.



3.9.2.3 Changing Sticker Size and Direction

The size and direction of a placed sticker can be changed.

1. Adjust the ⇄ icon of the placed sticker.



3.9.3 Exporting Sticker

Handwritten data created is automatically saved every five seconds; no operation is needed. Compatible ECDIS devices are shown below.

No.	ECDIS device		Output format
1	JAN-701B/901B	(JRC)	U_NeCSTs.uch
2	JAN-7201/9201	(JRC)	U_NeCSTs.uchm
3	FMD-3100/3200/3300	(FURUNO)	U_NeCSTs.xml

Note

There are cases where an exported sticker cannot be used on an ECDIS.

In the case, check the instruction manual of the ECDIS and correct the parameter value of sticker to a value less than the upper limit.

3.9.3.1 Using Exported Sticker on ECDIS

The following is an example of using on ECDIS (JAN-7201/9201 and JAN-701B/901B) handwritten data.

[JAN-7201/9201]

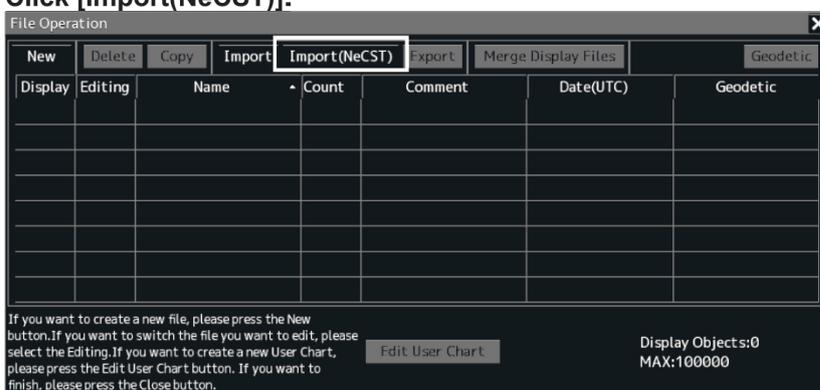
Memo

If the JAN-7201/9201 is started before J-Marine NeCST, linking may not work properly. Restart the JAN-7201/9201.

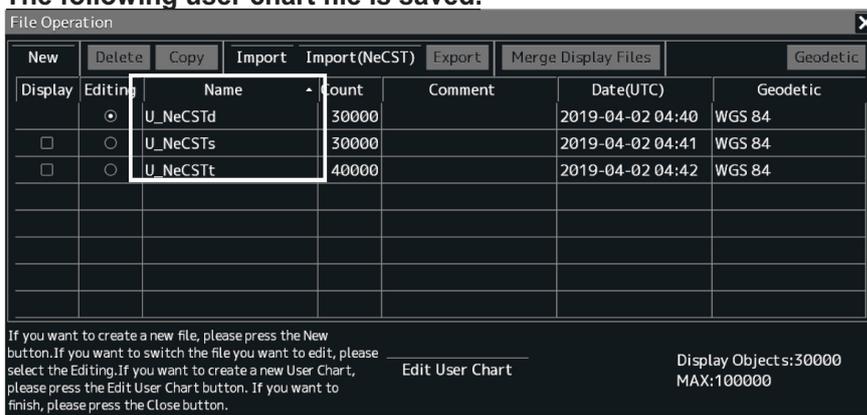
■ If the Soft Version of JAN-7201/9201 is 01.30.110 or later, you can use the following procedure.

1. Click [Menu]-[User Chart]-[File Operation].
The File Operation dialog box of User Chart is displayed.

2. Click [Import(NeCST)].



3. The following user chart file is saved.



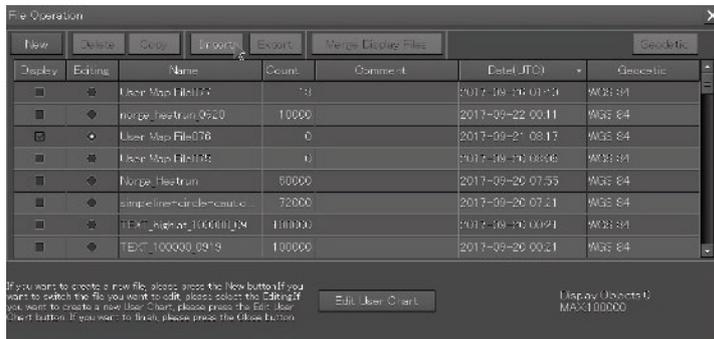
Memo

The name of the file exported from J-Marine NeCST is fixed.
If a file with the same name is already stored, it will be overwritten.
If you do not want to overwrite, change the name of the imported file with ECDIS.

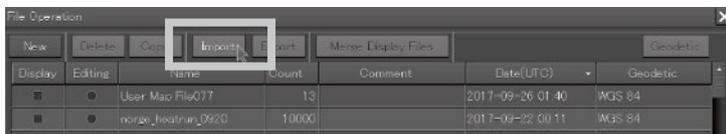
■ If the Soft Version of JAN-7201/9201 is earlier than 01.30.110, you can use the following procedure.

1. Click [Menu]-[User Chart]-[File Operation].

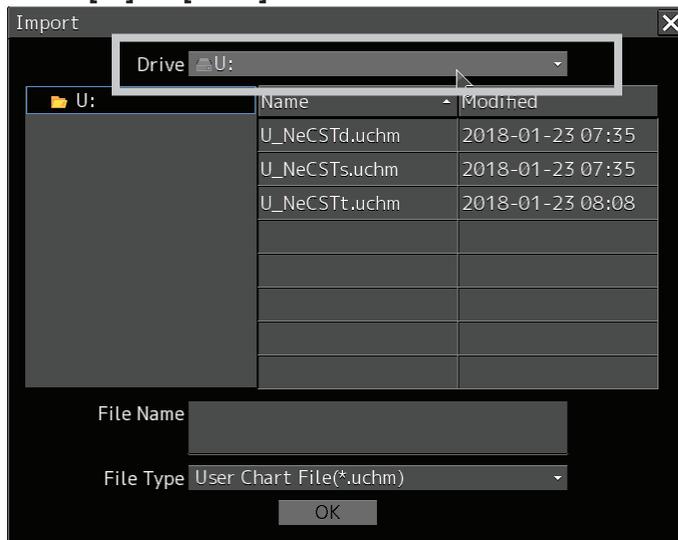
The File Operation dialog box of User Chart is displayed.



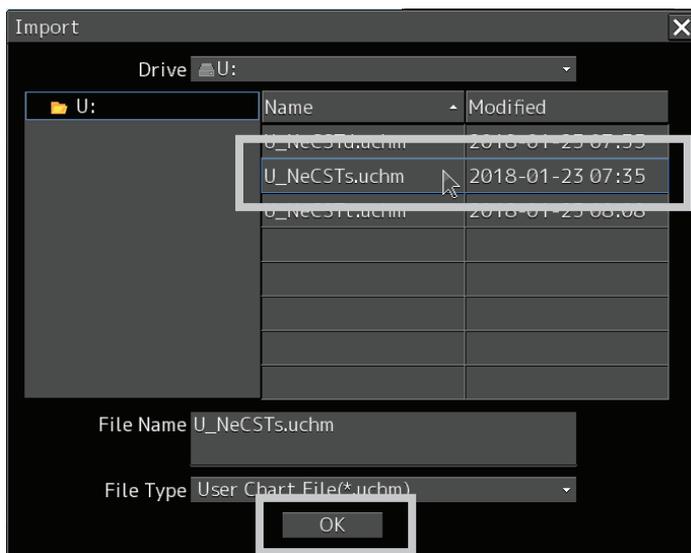
2. Click [Import] button.



3. Select [U:] on [Drive].

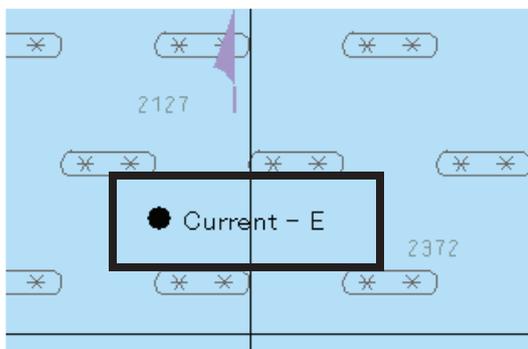


4. Select [U_NeCSTs.uchm], click [OK] button.



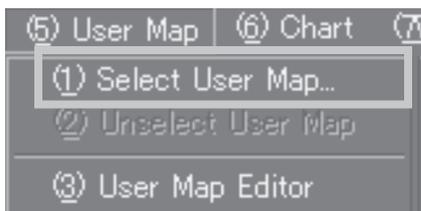
Memo
The name of the file exported from J-Marine NeCST is fixed.
If the exported file from NeCST have imported with ECDIS before, overwrite confirmation may be displayed.
If overwriting is not desired, change the name of the imported file with ECDIS.

Stickers can be used on ECDIS.

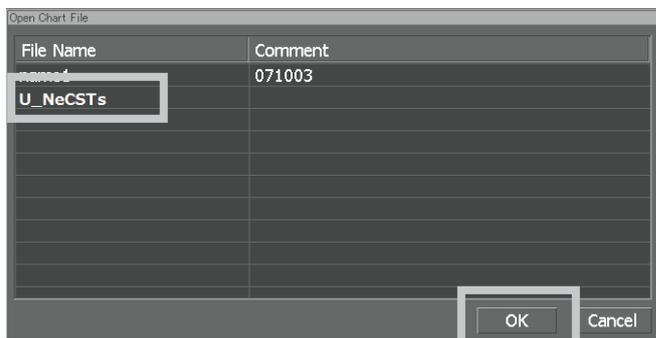


[JAN-701B/901B]

1. In the Normal menu, select [(5)User Map] – [(1)Select User Map] in that order.



2. Select [U_NeCSTs], and click [OK] button. Import will be started.
The Handwritten data is displayed on ECDIS.

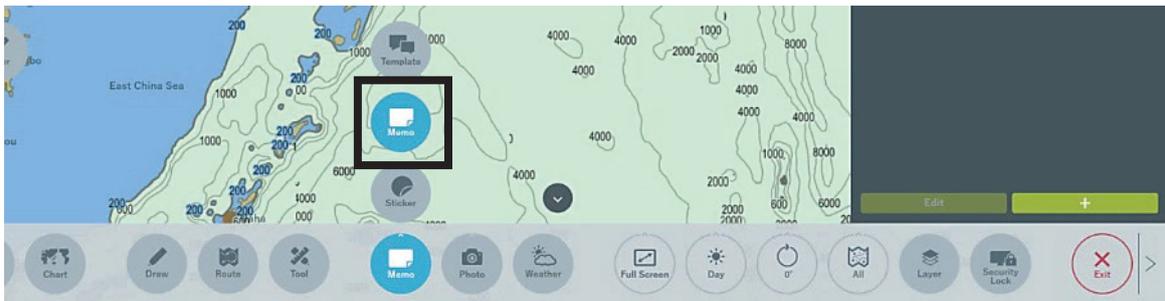


3.10 Memo Function

This function enables recording of information to be shared among crew members as memos. Unlike handwritten data, voyage data can be displayed even if it is changed.

3.10.1 Creating New Memo

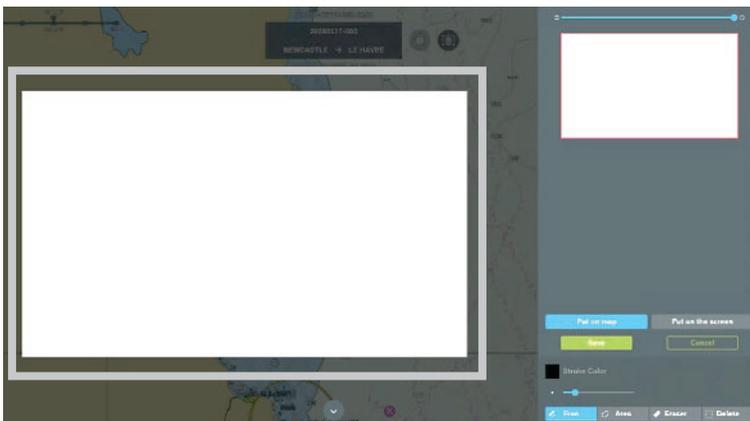
1. Tap the [Memo] icon.



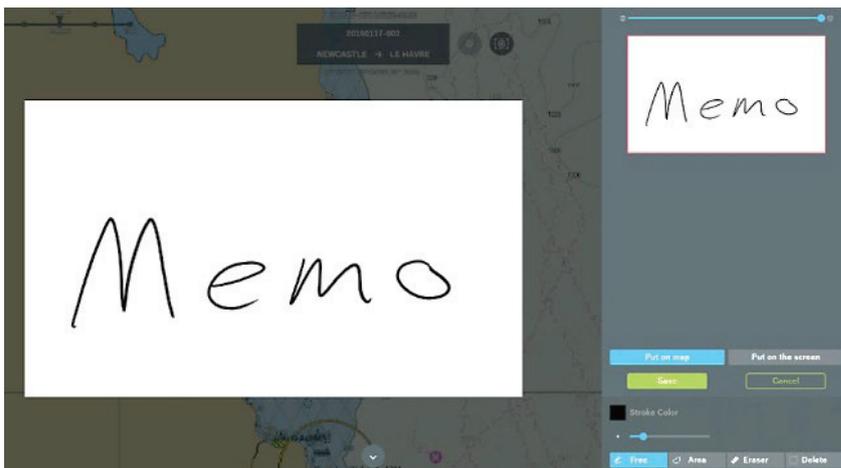
2. Tap the [+] button.



A sheet for memo is displayed.



3. **Handwrite a memo.**
Refer to “3.10.2 Editing Memo” for details.



4. **After Handwriting, tap the Save button.**
To cancel the save, tap the [Cancel] button.



Memo

Memo is set in the center of the screen. Move the memo to the required position.



When selecting [Put on map] and saving it, Memo is fixed on the chart. And when scrolling the chart, the display position of Memo also moves.

When selecting [Put on the screen] and saving it, Memo is fixed on the screen. And even if scrolling the chart, it keeps displaying Memo on the screen.

Select according to the purpose of Memo to be created.

The handwritten data of the memo can be edited. Refer to “3.10.2 Editing Memo” for the procedure of editing.

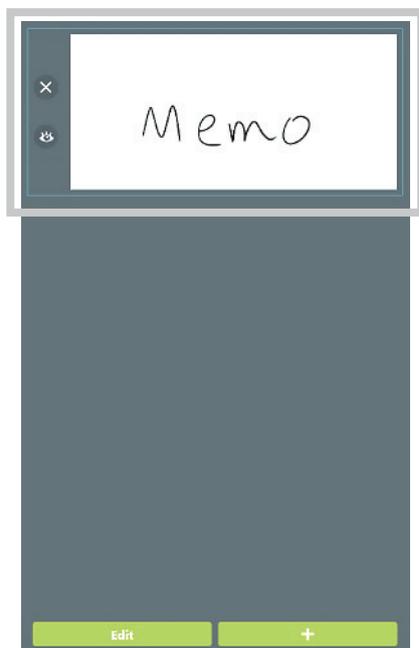
Memo

Up to 10 memos can be created.

3.10.2 Editing Memo

An addition to a created memo can be made.

1. Select the memo to edit.



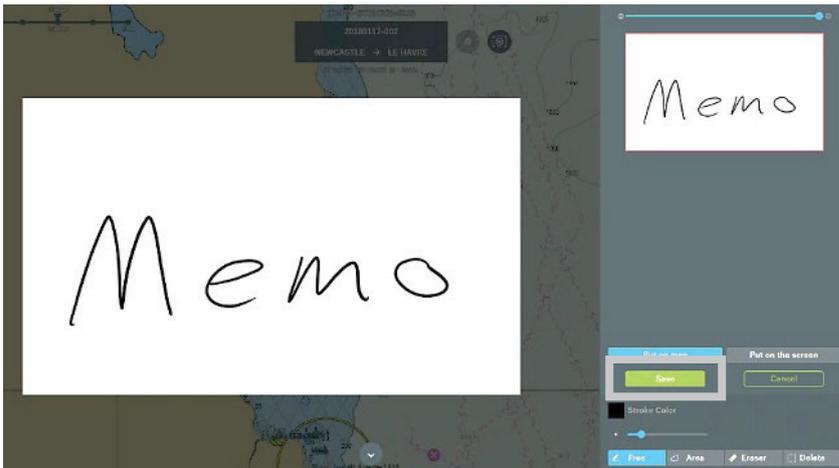
2. Tap the [Edit] button.



The mode switches to the Edit mode.

3. Edit the memo.

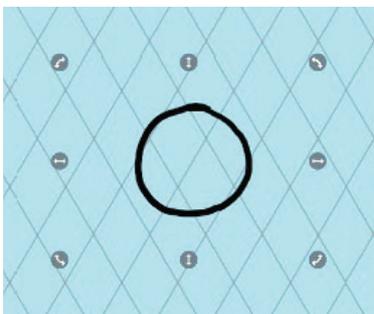
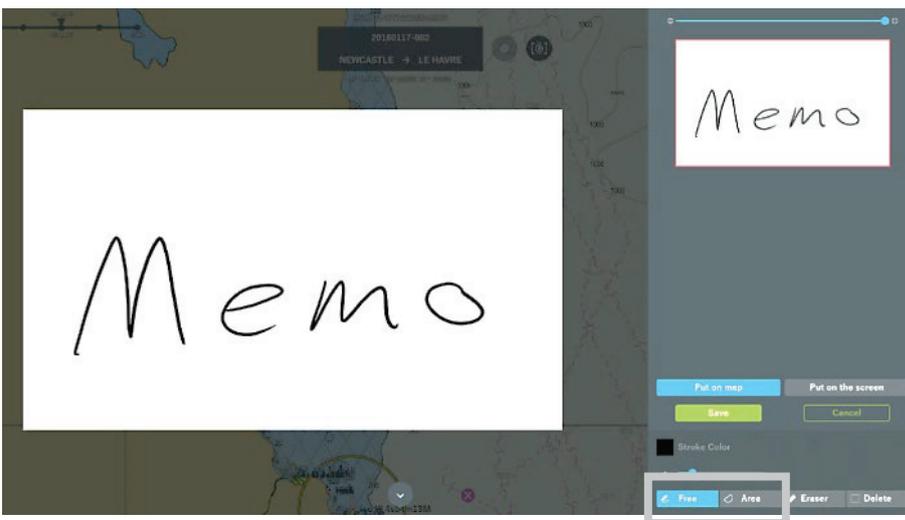
To save the edited memo, tap the [Save] button.
To cancel the save, tap the [Cancel] button.



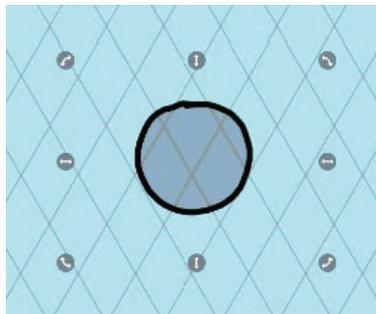
3.10.2.1 Changing the Type of Memo

After selecting the [Free] or [Area] icon, Memo can be edited using the selected type.

1. Select the [Free] icon or [Area] icon.



Free selected

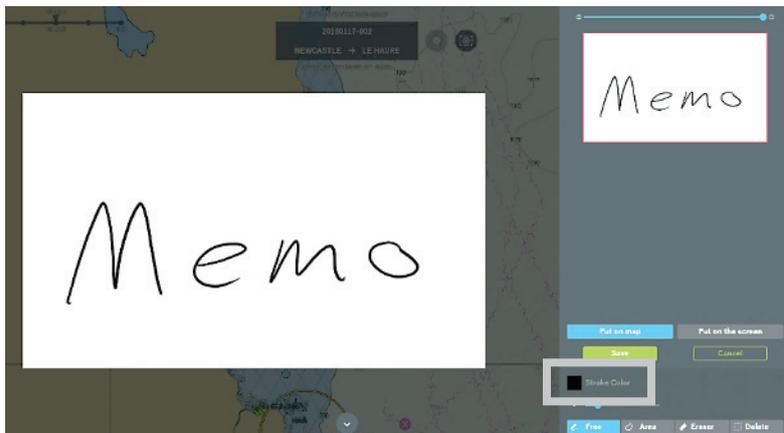


Area selected

3.10.2.2 Changing the Color of Memo

The line color of a memo can be changed.

1. Tap the [Stroke Color] icon.



The color pallet is displayed.



2. Select a new color and tap the [OK] button.
To cancel the change of the color, tap the [Cancel] button.

Memo

Neither the color nor the transparency can be changed for an already-written memo.

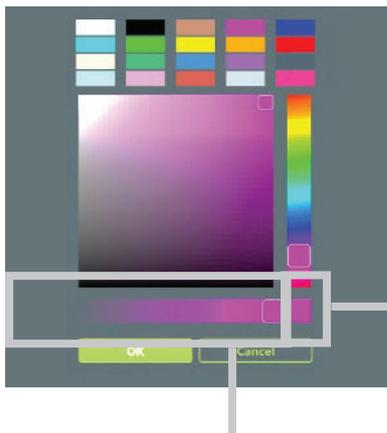
3.10.2.3 Changing the Transparency of Memo

The transparency of a memo can be changed.

1. Tap the [Stroke Color] icon.



The transparency is displayed.



The currently set transparency is displayed.

Displays the transparency bar and the range of transparency.

2. Adjust the transparency bar and tap the [OK] button.

To cancel the change of the transparency, tap the [Cancel] button.

Memo

When the line type is set to [Area],
Fill Color can be set in addition to Stroke Color.



Similarly, to Stroke Color, the color and transparency can be changed for Fill Color.
Refer to “3.10.2.2 Changing the Color of Memo” and “3.10.2.3 Changing the Transparency of Memo” for details.

3.10.2.4 Changing the Line Width of Memo

The line width of a memo can be changed.

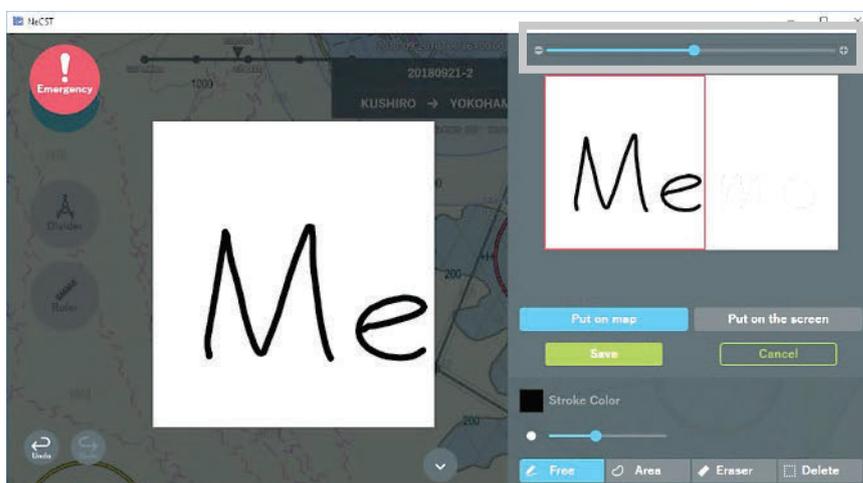
1. Use the line width slider.
Change the line width to any value.



3.10.2.5 Focus display of Memo

It is able to edit Memo writing sheet with enlarge when it is not able to original size at display or rotation.

1. Adjust Focus bar.



Display Memo in Focus.



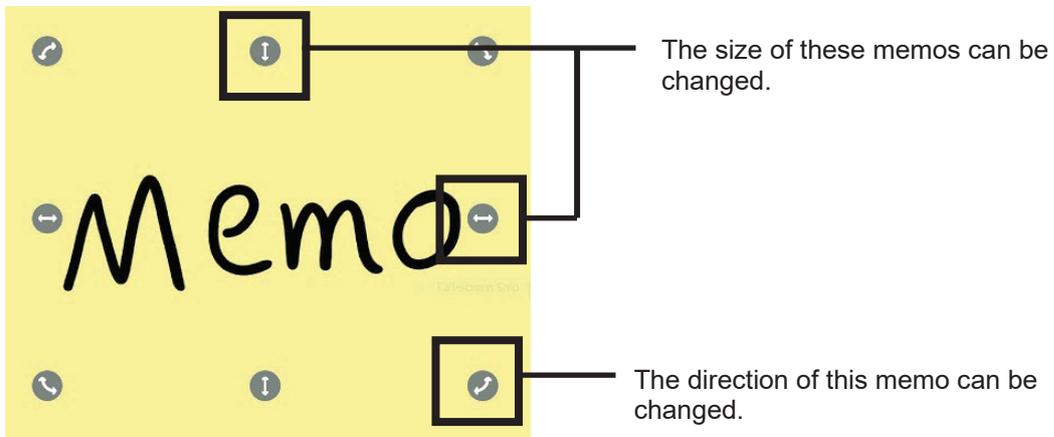
Memo is enlarged display.
Adjust the position of red frame, move the required point to enlarge.



3.10.2.6 Changing the Size and Direction of Memo

The size and direction of a memo can be changed.

1. Adjust the ⇄ icon of a memo.



3.10.3 Deleting Memo

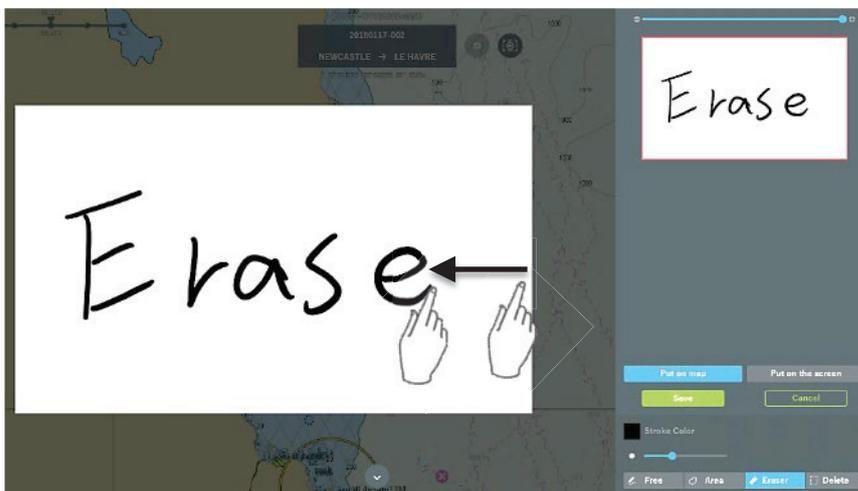
Recorded memos can be deleted.

3.10.3.1 Deleting Stroked Part of Memo

1. Tap the [Eraser] icon.



2. Stroke the part of the memo you want to delete.
The stroked part of the memo is deleted.



3.10.3.2 Deleting the Encircled Part of Memo

1. Tap the [Delete] icon.



2. Encircle the area you want to delete.

The entire encircled area can be deleted at one time.



3.10.3.3 Deleting the Memo of the Selected Sheet

1. Tap the [X] icon.

The memo of the selected sheet is deleted.



Note

Pressing the [X] icon deletes the memo of the selected sheet.
Confirm that it is okay to delete the memo before deleting.

3.10.4 Setting Show/Hide of Memo

The Show/Hide setting of a memo can be switched.

1. Tap the [Show/Hide] icon to put the display into the Shown state  .
During the Show state, the Memo is shown.



2. Tap the [Show/Hide] icon to put the display into the Hidden state  .
During the Hide state, the Memo is hidden.



Memo

Selected Memo is displayed even if putting Hide state.

3.11 Display Layer Switching Function

Multiple layers are displayed concurrently.
This function enables switching Show/Hide of a route or other objects on the chart.

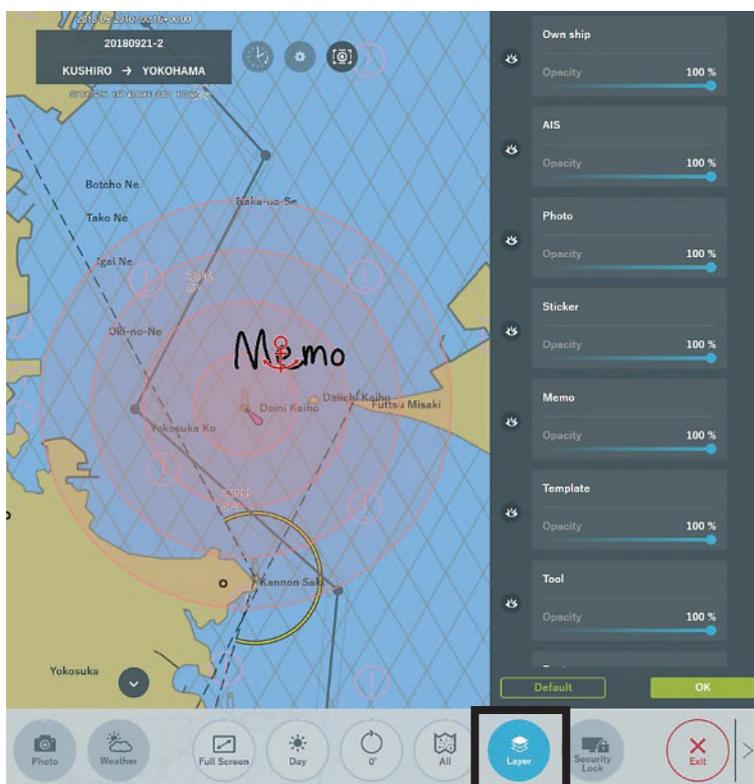
⚠ CAUTION

 Depending on the display order of objects, objects other than routes may not be displayed. Be careful to set the displaying order.

 The priority of the Chart layer is recommended to be lowest.
If the Chart layer is set as a higher priority than other layers, lower-priority layers will not be displayed. If the layers setting was failed, tap the Default button.

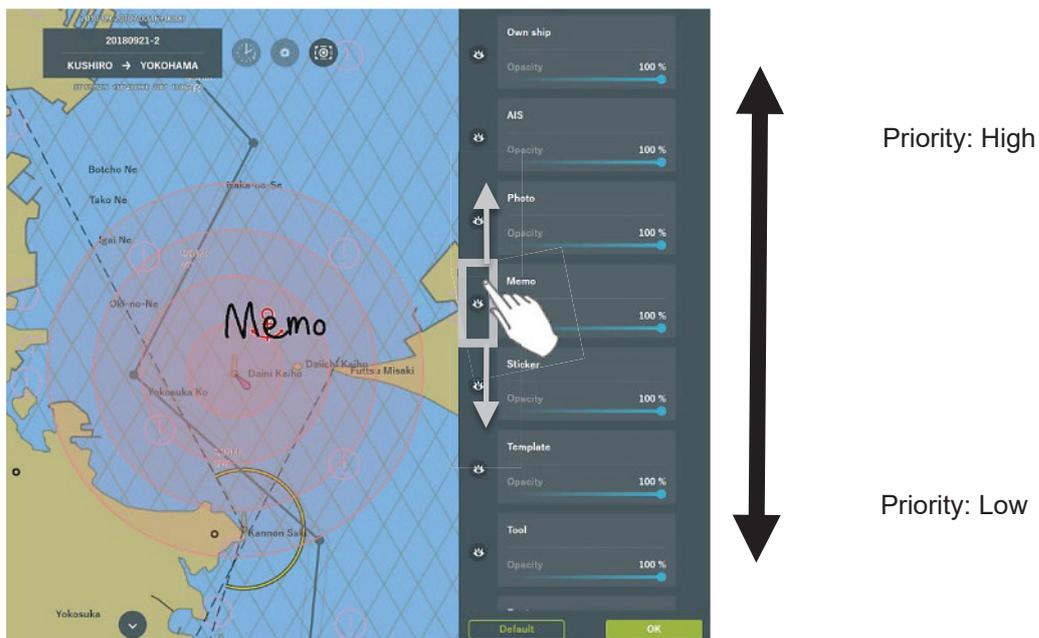
3.11.1 Setting the Displaying Order of Display Layer

1. Tap the [Layer] icon.
The layer list is displayed.

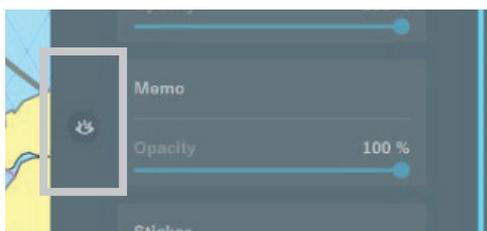


2. The displaying order of layers can be changed.

Set the ordering so that high-priority layers are placed in the upper part.



Memo



When re-arranging, drag the part surrounded by the frame of each layer as shown above.

3. Tap the [OK] button.

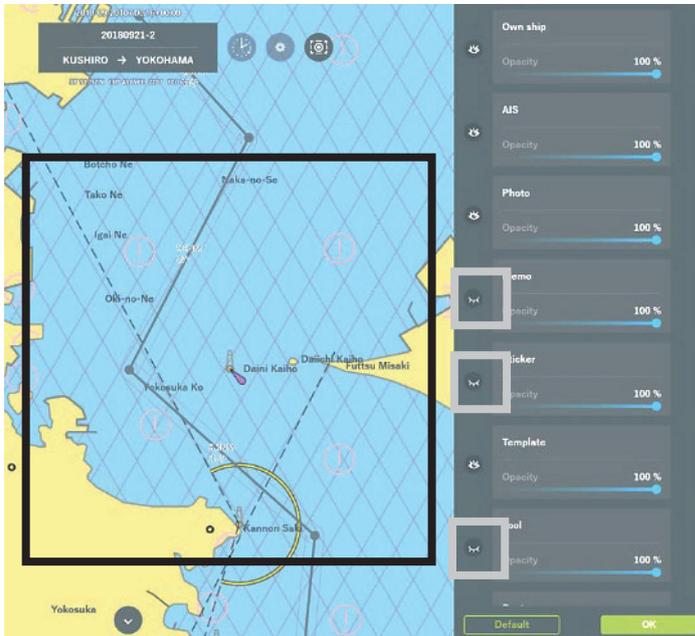


The change of priorities is reflected.

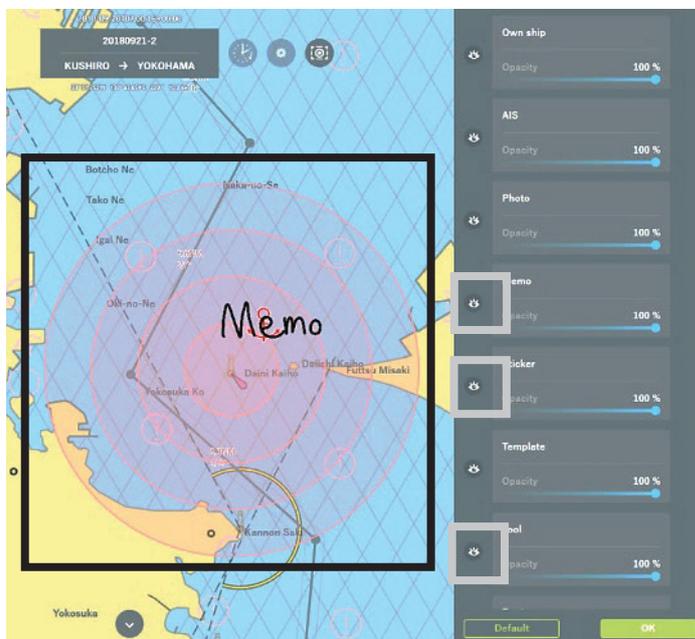
3.11.2 Setting Show/Hide of Display Layer

Show/Hide of display layers can be switched.

1. Tap the [Show/Hide] icon to put the display into the Hide state .
During the Hide state, the display layer is hidden.



2. Tap the [Show/Hide] icon to put the display into the Show state .
During the Show state, the display layer is shown.

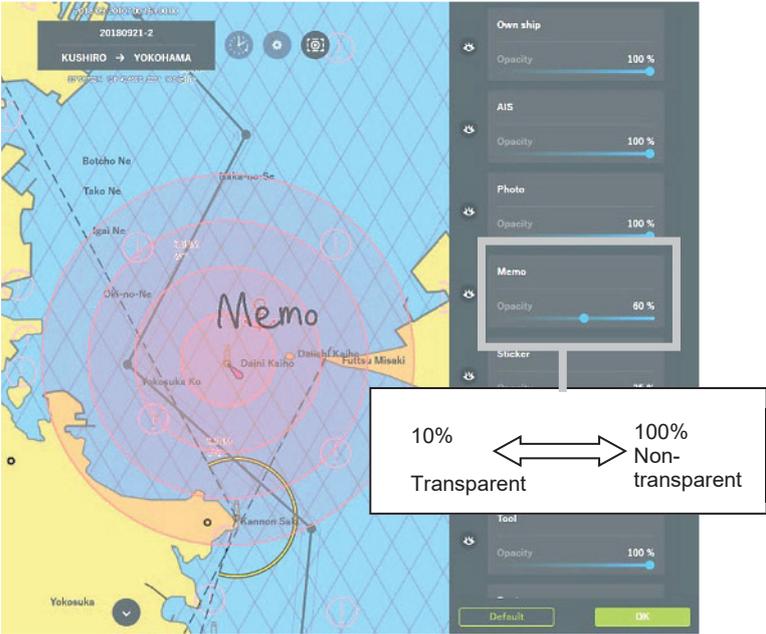


Memo

Even a layer set to Hidden will be forcibly Shown if it is selected in a process of operation.

3.11.3 Changing the Transparency of Display Layer

- 1. **Set the transparency of each layer.**
Set the transparency so that you can easily check the layer and use it.



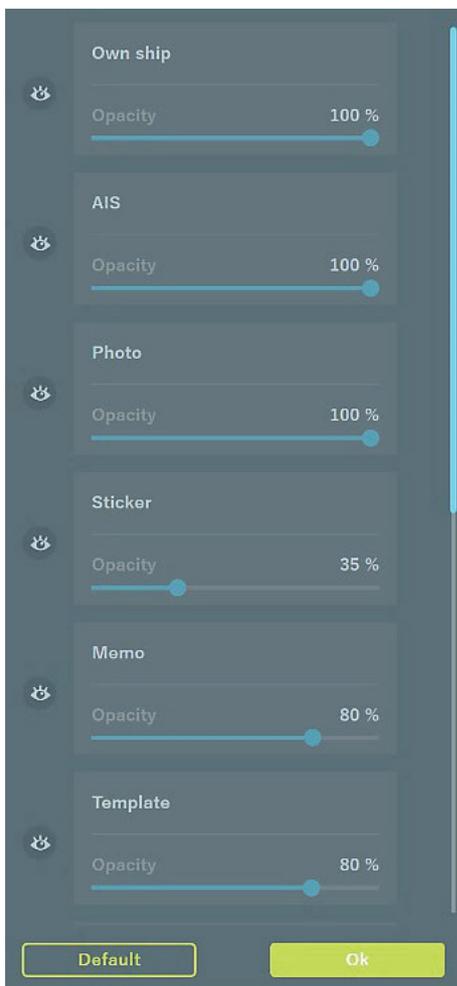
Memo
Opacity can be set from 100% maximum to 10% minimum.

3.11.4 Initializing the Arrangement Order of Display Layers

1. Tap the [Default] button.



The arrangement order of display layers returns to the default setting.



Memo

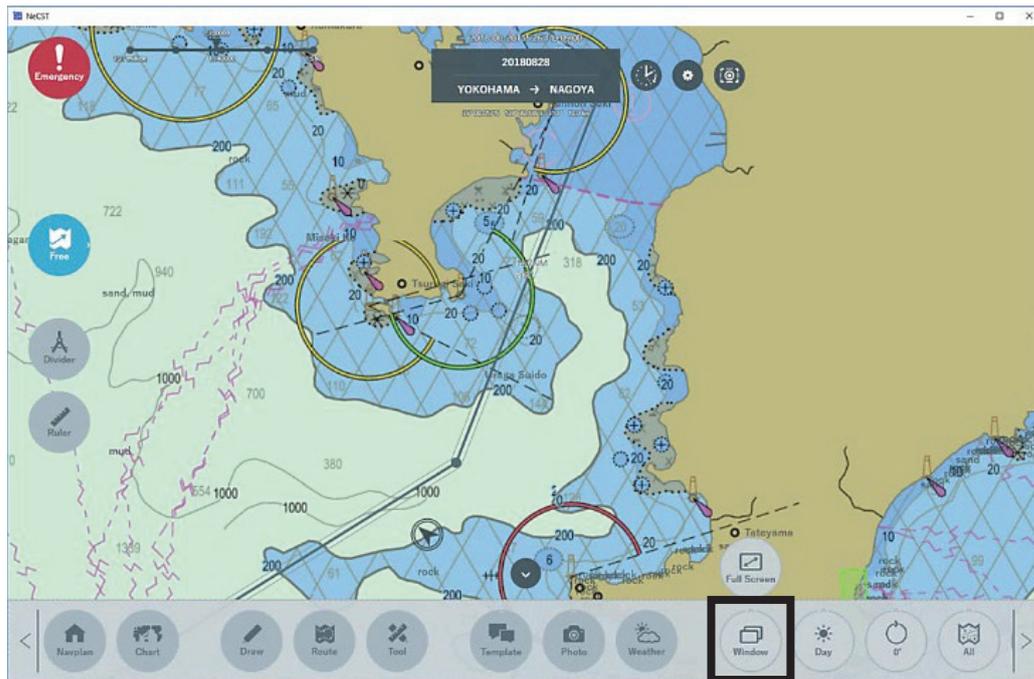
Tapping the [Default] button initializes only the arrangement order of layers. The Show/Hide setting and transparency are not initialized.

3.12 Display Mode Switching Function

This function enables changing window size, changing Day/ Night display and rotating in display position.

3.12.1 Display Size Switching Function

1. Tap the [Window/Full Screen] icon.
Use an easy-to-use display size.



Using the Full Screen mode is recommended.
To display this equipment and another app on the screen side by side, use the Window mode.

3.12.2 Day/Night Switching Display

The display color of the screen can be switched in two stages in accordance with the brightness inside the bridge.

Use the following procedure to make switching.

1. Tap the [Day/Night] icon.

Use the mode suitable to the brightness of the environment.



Selectable settings are shown in the table below.

Mode	Recommended scene
Day	Suitable for the period between morning and evening
Night	Suitable for the nighttime period

Memo

To change the brightness of the screen, use the brightness adjustment button on the side of the touch panel display unit.
Refer to “3.1.1 Touch Panel Display Unit” for details.

3.12.3 Display Position Rotation Function

This function enables rotation of a display position; it is convenient when users operate this equipment while surrounding it during briefing or the like.

1. Tap the display position icon.

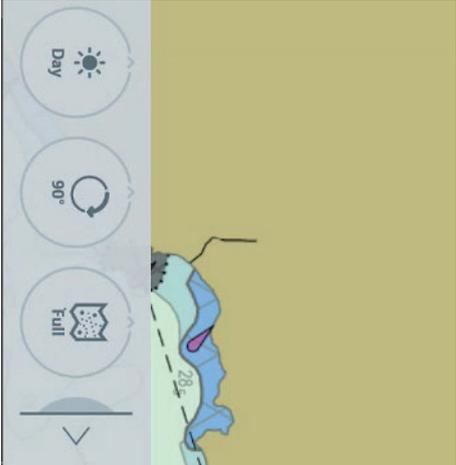
The display position list is displayed. Select and tap the angle to display.



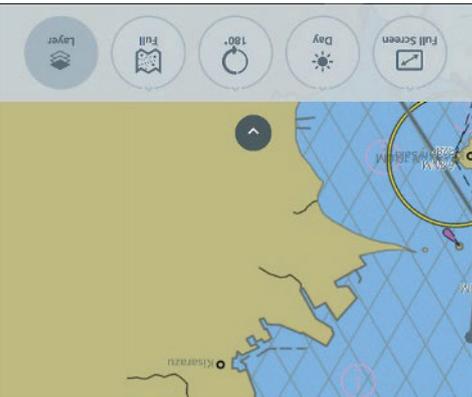
The screen is rotated to the selected angle and displayed, using 0° as a reference.



0°



90°



180°



270°

3.13 Chart Import/Update Function

After Importing chart, it can be displayed.

To import/update a chart, Chart CD and Cell Permit are required.
Contact the distributor or your nearest sales agent.

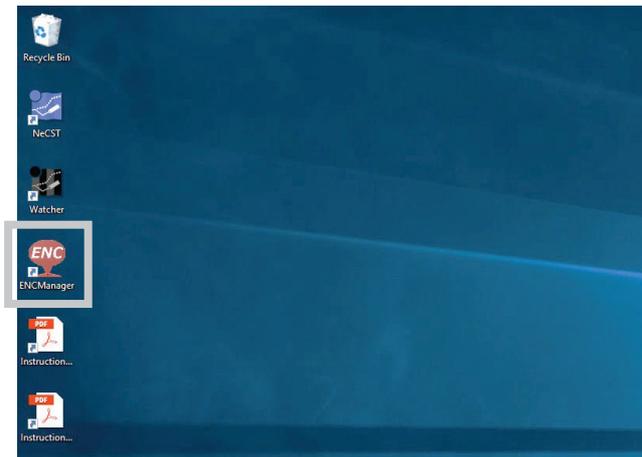
Note

The Import/update cannot be performed normally if Japanese is written in the folder name storing the chart data. If the import/update fails, confirm that the folder name does not contain Japanese.

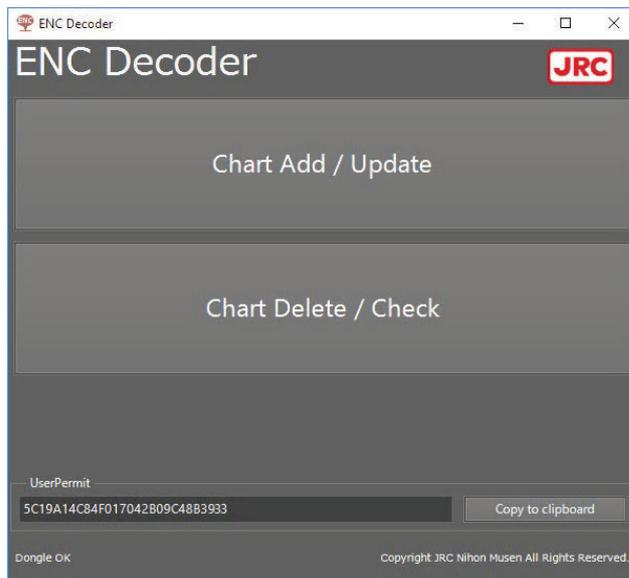
3.13.1 Importing Chart

3.13.1.1 Starting the Chart Import Software

1. Run ENC Manager on the display processing unit.



The chart import software starts.



3.13.1.2 Specifying Cell Permit

Whether or not Cell Permit is required depends on ENC charts.

- In case of S-57 Chart, Cell Permit is not required.
- In case of S-63 Chart, Cell Permit is required.

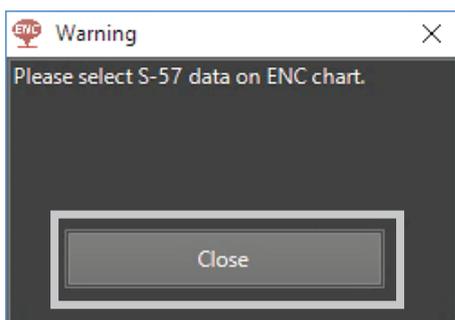
The following subsections describe the details.

When S-57 Chart Is Specified

1. Insert the Chart CD into the DVD drive of the display processing unit.
2. Tap [Chart Add / Update] button from top screen of ENC Decoder.
3. Select the [Without file selection(S-57)] radio button on the Cell Permit specification screen.



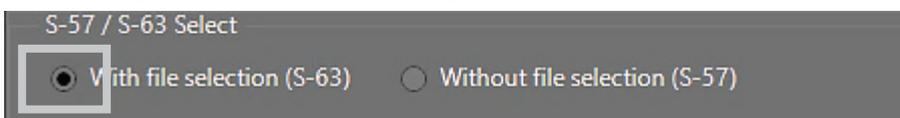
Following popup screen is displayed, tap [Close] button.



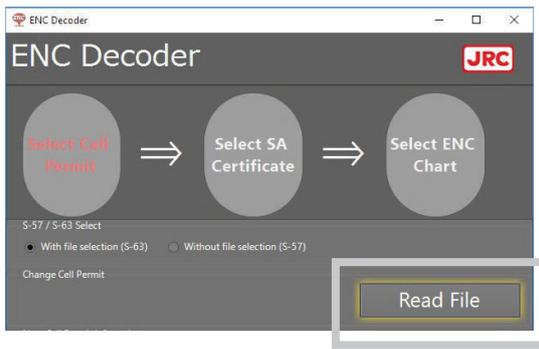
4. Tap the [=>] button.
The screen switches to the specifying the SA Certificate File screen.

When S-63 Chart Is Specified

1. Select the [With file selection(S-63)] radio button on the Cell Permit specification screen.



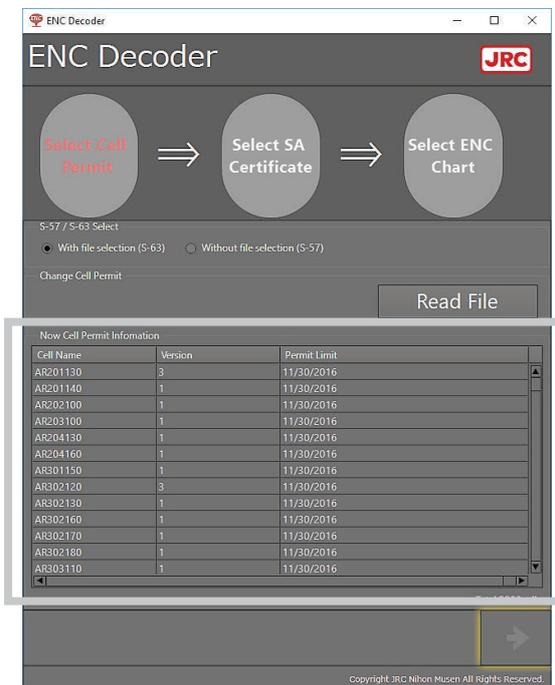
2. Tap the [Read File] button.



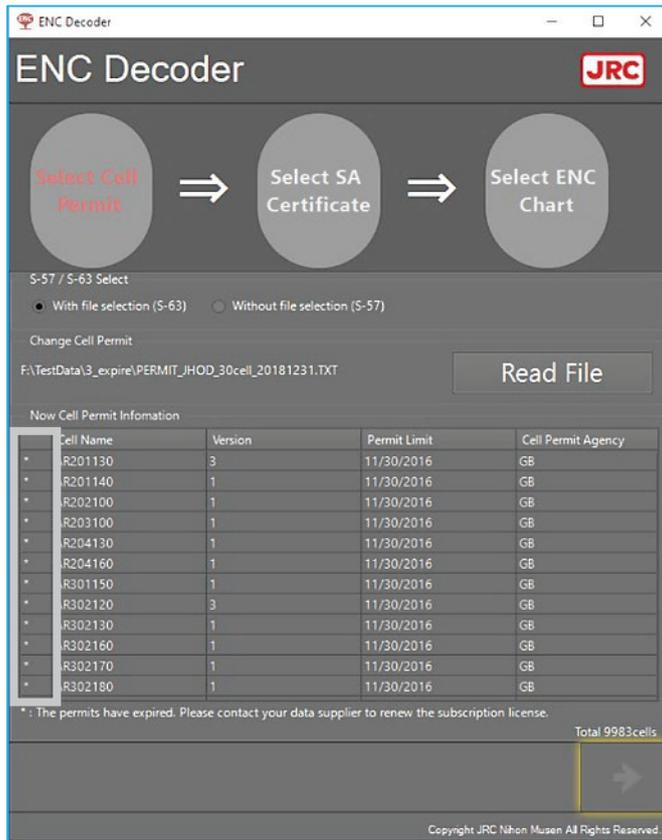
The file selection screen is displayed.
Select supplied permit.txt.

3. Specify Cell Permit.

Information of the used Cell Permit is displayed.



Memo

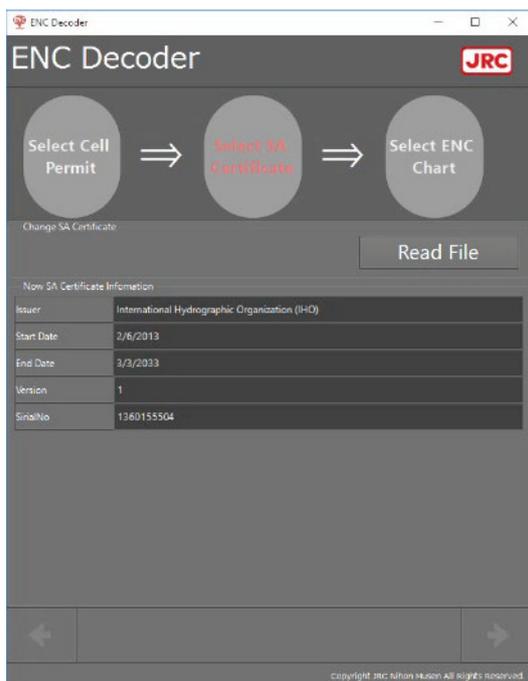


If "*" is attached to Cell Name, the cell permits have expired.
Select a new cell permit file.

4. Tap the [⇒] button.

The screen switches to the specifying the SA Certificate File screen.

3.13.1.3 Specifying the SA Certificate File



1. **Tap the [Read File] button**
The file selection screen is displayed.
2. **Specify the SA Certificate file.**
Select IHO.CRT...etc in chart CD.
3. **Tap the [⇒] button.**
The screen switches to the ENC chart specification screen.

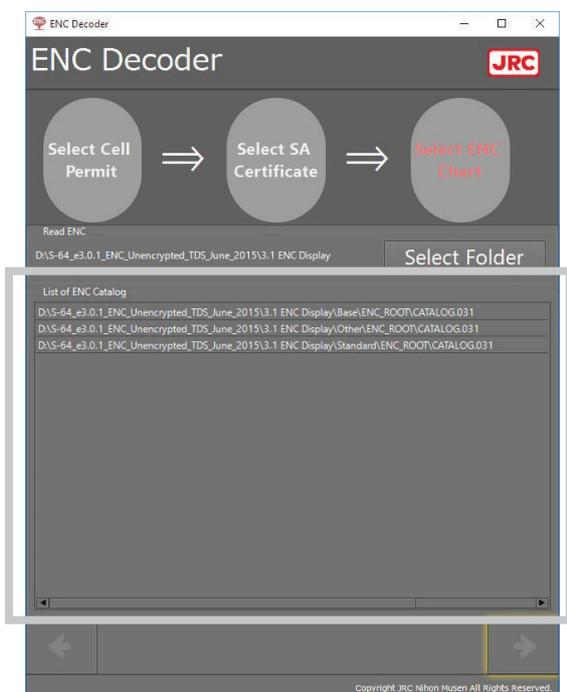
3.13.1.4 Specifying the ENC Chart

1. Tap the [Select Folder] button.



The folder selection screen is displayed.

2. Specify the ENC chart.
A list of the catalog files stored in the selected folder is displayed.



3. Tap the [⇒] button.
The screen switches to the final check screen.

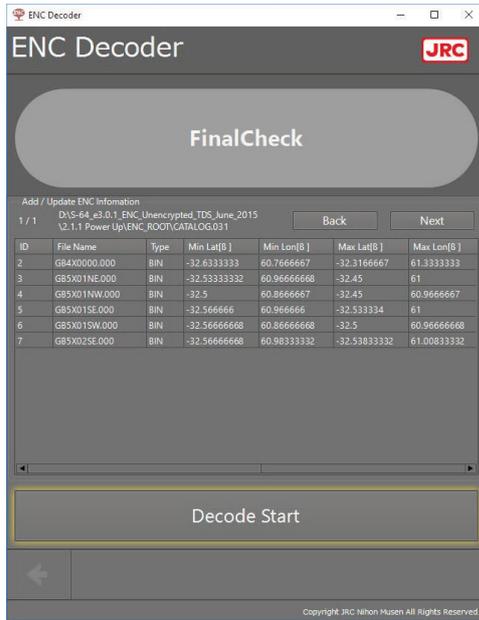
3.13.1.5 Starting Decoding

Note

Changed not to perform ENC cache data deletion processing after SENC conversion from NeCST of Package Ver.1.2.3.26 or later. Therefore, chart data imported by NeCST of Package Ver.1.2.3.26 or earlier may not be available. Please delete the old chart data and import it again.

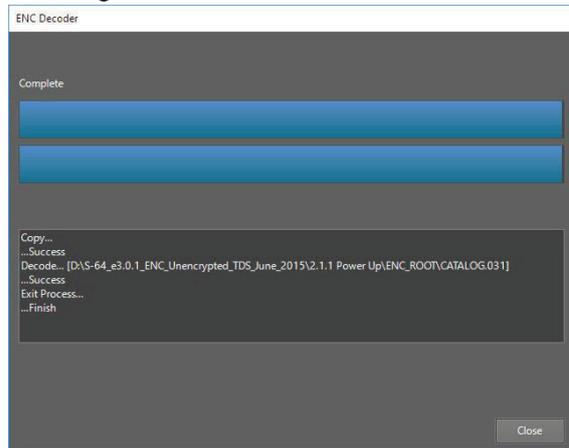
1. Confirm the contents of the final confirmation screen.

Before starting decoding, check over the list of what to import.



2. Tap the [Decode Start] button.

Decoding starts.



3. When decoding is terminated, tap the [Close] button.

This completes decoding.

Note

It takes time until decoding is terminated after it is started. Until decoding is terminated, the chart may not be displayed normally, so make sure you have plenty of time, and then start decoding.

- Update to chart data which is completed decoding.
The import chart is not displayed until update completed.

Note

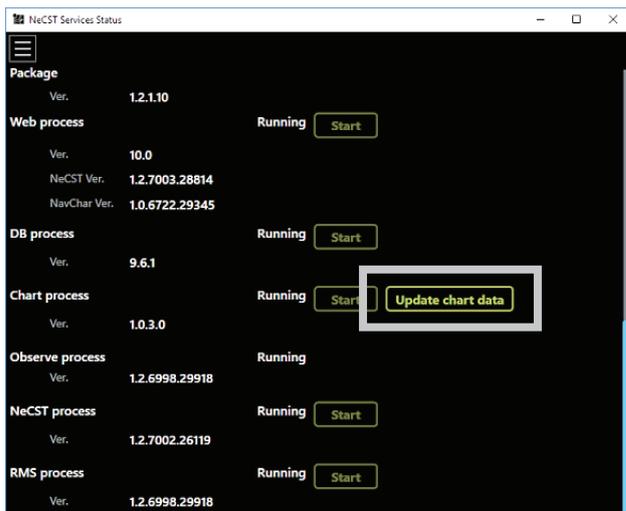
When updating, the chart is not displayed. Update with finished NeCST application.
It takes many times to update the chart. Update with a margin.

- Run Watcher on the display processing unit.



- Scroll down NeCST Services Status screen.

- Tap [Update chart data] button on [Chart process].



- The status of [Chart process] will be displayed [ChartUpdating], wait for a while.

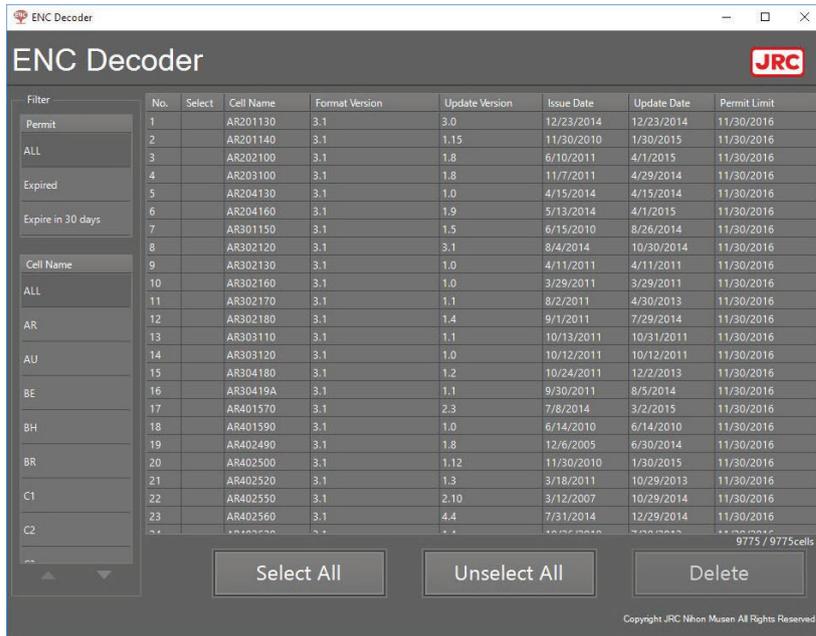


If [Success] is displayed and [Chart process] is displayed [Running], update is completed.



3.13.2 Confirming Imported Chart

1. Tap the [Chart Delete/Check] button on the top screen of ENC Decoder.
The chart list is displayed.



Confirm the imported charts.

No.	Select	Cell Name	Format Version	Update Version	Issue Date	Update Date	Permit Limit
1		AR201130	3.1	3.0	12/23/2014	12/23/2014	11/30/2016
2		AR201140	3.1	1.15	11/30/2010	1/30/2015	11/30/2016
3		AR202100	3.1	1.8	6/10/2011	4/1/2015	11/30/2016

Cell Name :Cell name
 Format Version :Cell format version
 Update Version :Cell update version
 Issue Date :Cell issue date
 Update Date :Cell update date (date of last update)
 Permit Limit : Permit expired date
 (If the Permit Limit is near, update with new chart data.)

3.13.3 Deleting Imported Chart

1. Tap the [Chart Delete/Check] screen on the top screen of ENC Decoder.
The chart list is displayed.
2. Select the chart you want to delete from the chart list.
To delete all the charts, tap the [Select All] button.



3. Tap the [Delete] button.
All the selected charts are deleted.
4. After completed deleting, update chart data which is used in this equipment.
Deleted contents will not be reflected until update is completed.

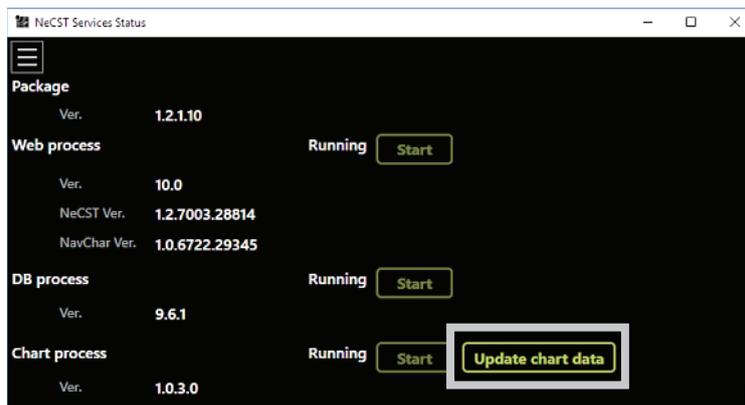
Note

When updating, the chart is not displayed.
It takes many times to update the chart. Update with a margin.

5. Run Watcher on the display processing unit.



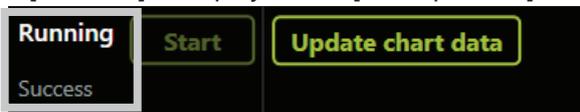
6. Scroll down NeCST Services Status screen.
7. Tap [Update chart data] button on [Chart process].



8. The status of [Chart process] will be displayed [ChartUpdating], wait for a while.



If [Success] is displayed and [Chart process] is displayed [Running], update is completed.



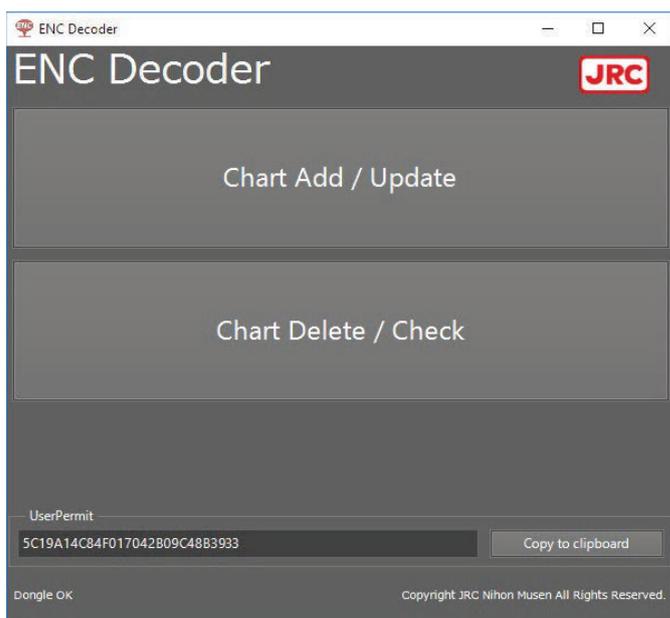
3.13.4 Updating Chart

3.13.4.1 Starting the Chart Import Software

1. Run ENC Manager on the display processing unit.



The chart import software starts.



3.13.4.2 Specifying Cell Permit

Whether or not Cell Permit is required depends on ENC charts.

- In case of S-57 Chart, Cell Permit is not required.
- In case of S-63 Chart, Cell Permit is required.

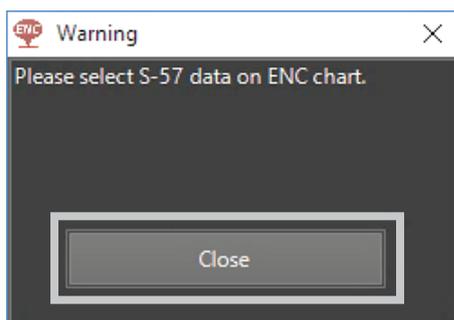
The following subsections describe the details.

When S-57 Chart is specified

1. Insert the Update Chart CD into the DVD drive of the display processing unit.
2. Tap [Chart Add / Update] button from top screen of ENC Decoder.
3. Select the [Without file selection(S-57)] radio button on the Cell Permit specification screen.



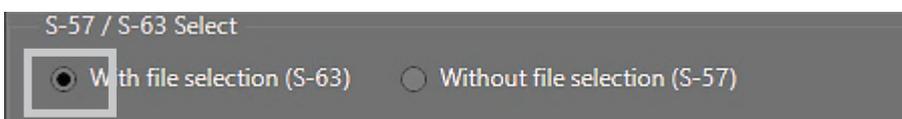
Following popup screen is displayed, tap [Close] button.



4. Tap the [⇒] button.
The screen switches to the specifying the SA Certificate File screen.

When S-63 Chart is specified

1. Select the [With file selection(S-63)] radio button on the Cell Permit specification screen.



2. In case of not updating the cell permits, go to step 5.

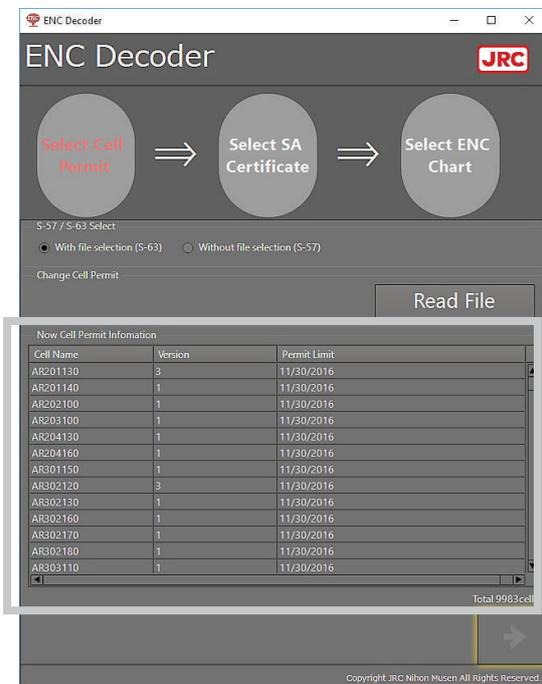
3. Tap the [Read File] button.



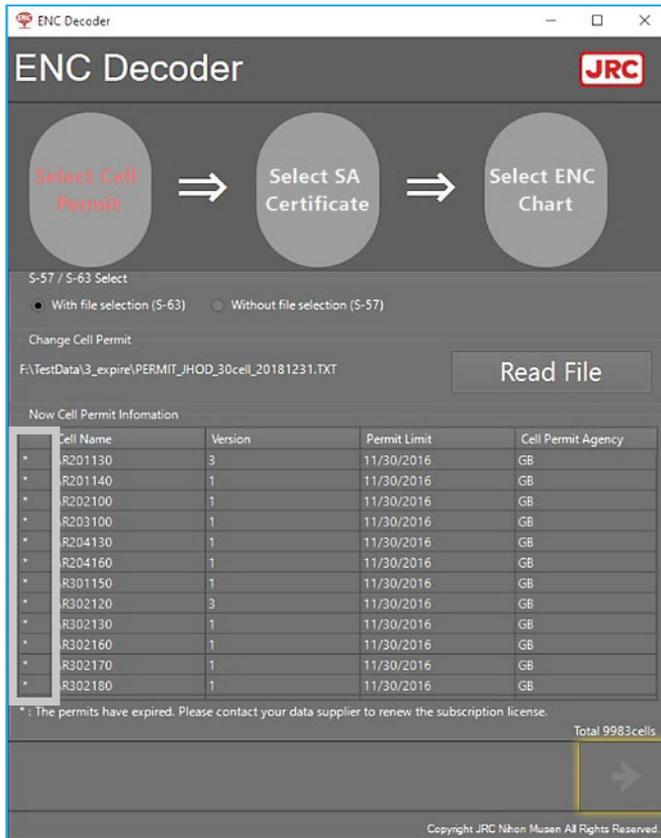
The file selection screen is displayed.
Select supplied permit.txt.

4. Specify Cell Permit.

Information of the used Cell Permit is displayed.



Memo



If "*" is attached to Cell Name, the cell permits have expired.
Select a new cell permit file.

5. Tap the [⇒] button.

The screen switches to the specifying the SA Certificate File screen.

3.13.4.3 Specifying the SA Certificate File



1. In case of not updating the SA Certificate file, go to step 4.
2. Tap the [Read File] button
The file selection screen is displayed.
3. Specify the SA Certificate file.
Select IHO.CRT...etc in chart CD.
4. Tap the [=>] button.
The screen switches to the ENC chart specification screen.

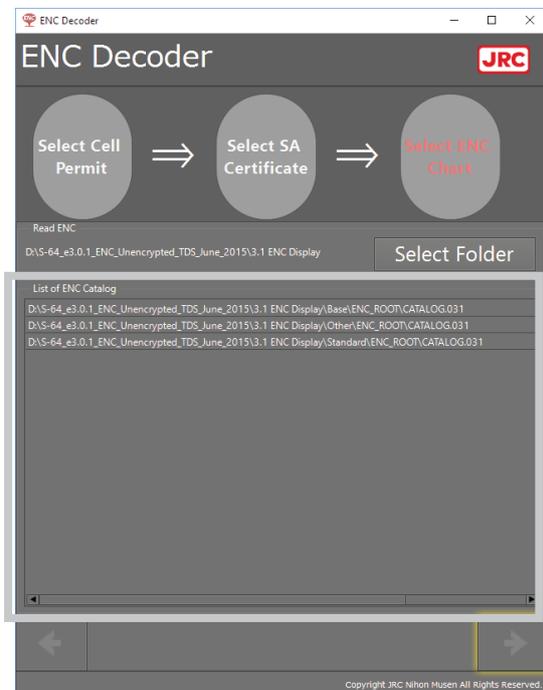
3.13.4.4 Specifying the ENC Chart

1. In case of not updating the ENC Chart, close the ENC Manager app, and go to step 4 of “3.13.4.5 Starting Decoding.”
2. Tap the [Select Folder] button.



The folder selection screen is displayed.

3. Specify the ENC chart.
A list of the catalog files stored in the selected folder is displayed.

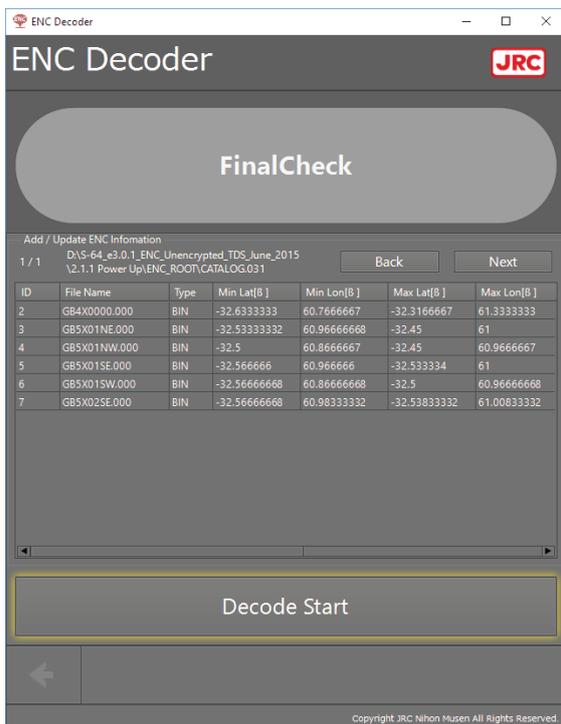


4. Tap the [=>] button.
The screen switches to the final check screen.

3.13.4.5 Starting Decoding

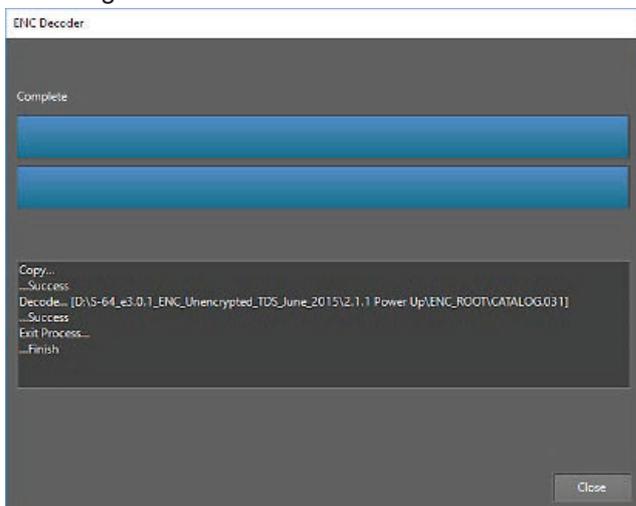
1. Confirm the contents of the final confirmation screen.

Before starting decoding, check over the list of what to import.



2. Tap the [Decode Start] button.

Decoding starts.



3. When decoding is terminated, tap the [Close] button.

This completes decoding.

Note
It takes time until decoding is terminated after it is started.
Until decoding is terminated, the chart may not be displayed normally, so make sure you have plenty of time, and then start decoding.

- Update to chart data which is completed decoding.**
The import chart is not displayed until update completed.

Note

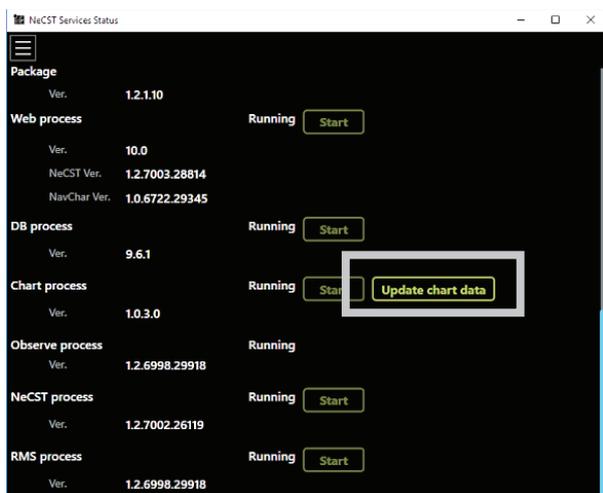
When updating, the chart is not displayed. Update with finished NeCST application. It takes many times to update the chart. Update with a margin.

- Run Watcher on the display processing unit.**



- Scroll down NeCST Services Status screen.**

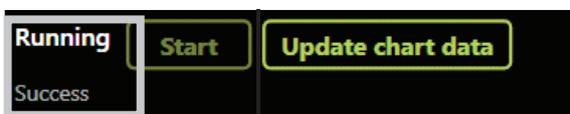
- Tap [Update chart data] button on [Chart process].**



- The status of [Chart process] will be displayed [ChartUpdating], wait for a while.**



If [Success] is displayed and [Chart process] is displayed [Running], update is completed.



3.14 Chart Display Functions

This section describes the functions related to chart display.

3.14.1 Display Object Selection Function

SENC information that can be displayed on the chart is classified into three object groups: Base (Base display), Standard (Standard display), and All (All object). These can be switched according to the purpose of use.

- **Base:** Important object group that cannot be deleted from the chart (such as coastline and safety contour)
- **Standard:** The second important object group after “Base Display (Base)” (such as fixed or floating objects used for monitoring)
- **All:** All objects

1. Tap the [Display Category] icon.



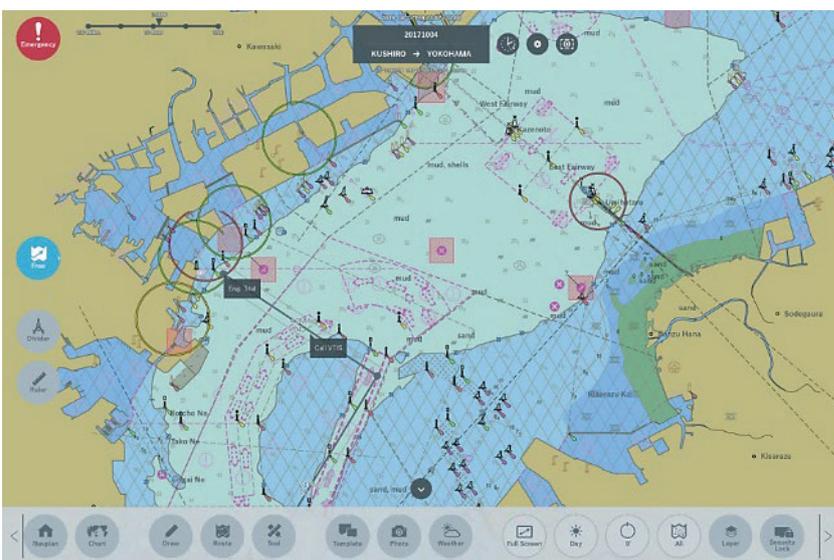
Select the display object group according to the purpose of use.



Display example with “Base (base display)” selected



Display example with “Standard (standard display)” selected



Display example with All (All object) selected

3.14.2 Chart Display Setting

Adjust the settings related to chart display.

- To perform the depth setting, select [Navigation].
- To select the displayed chart text, select [Chart Text].
- In case of setting Own ship wake, select [Track]
- To perform the AIS display setting, select [AIS].

1. Tap the [Gear] icon in the upper part of the screen.
The screen switches to the chart display setting screen.

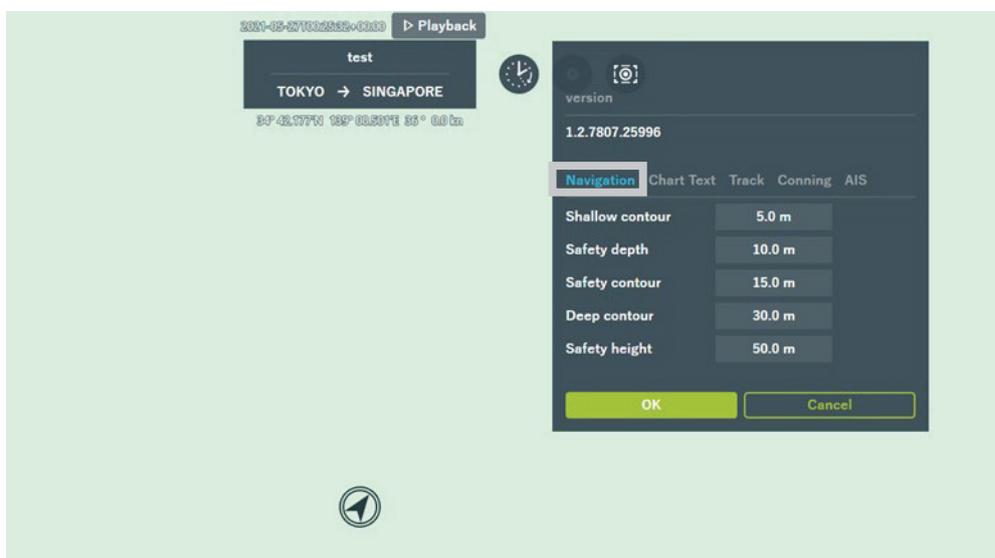


3.14.2.1 Setting Navigation

Set the depth contour etc. that are displayed on the chart.

1. Select the [Navigation] tab.

The items of Navigation are displayed.



2. Set each item of Navigation.

Setting item	Description	Setting value
Shallow contour	Displays the shallow contours to be displayed on the chart at the set depth.	0.0 to 200.0 m
Safety depth	Highlights the spot depth less than or equal to the set value.	0.0 to 200.0 m
Safety contour	Displays the safety contours to be displayed on the chart at the set depth.	0.0 to 200.0 m
Deep contour	Displays the deep contours to be displayed on the chart at the set depth.	0.0 to 200.0 m
Safety height	Sets the ship height above the sea level.	0.0 to 200.0 m

3. Tap the [OK] button to change the setting.

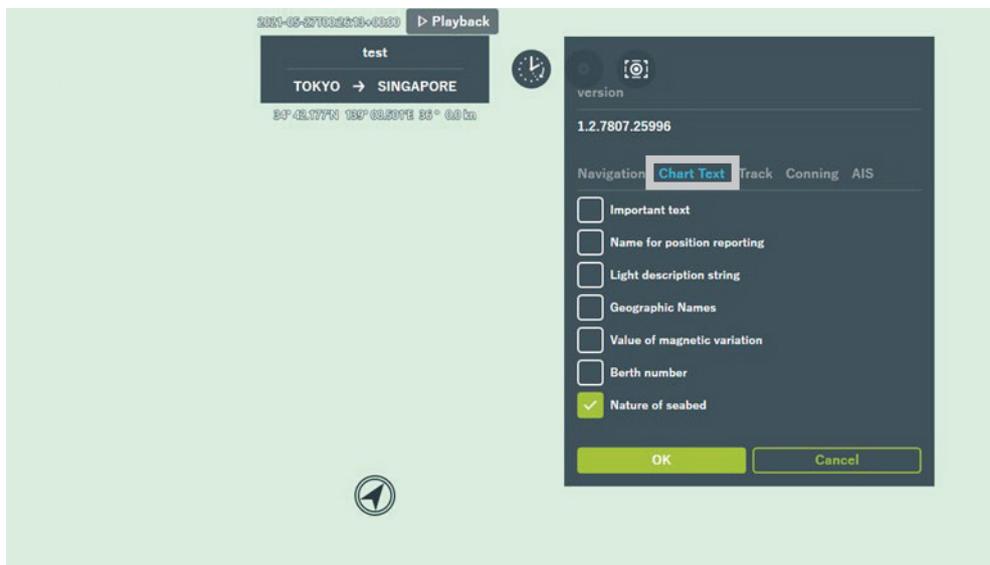
Tapping the [Cancel] button cancels the setting change.

3.14.2.2 Setting Chart Text

Set Show/Hide of text objects to be displayed on the chart.

1. Set Chart Text.

The items of Chart Text are displayed.



2. Set each item of Chart Text.

Checkbox checked: Displays the text object.

Checkbox not checked: Does not display the text object.

Setting item
Important text
Name for position reporting
Light description string
Geographic Names
Value of magnetic variation
Berth number
Nature of seabed

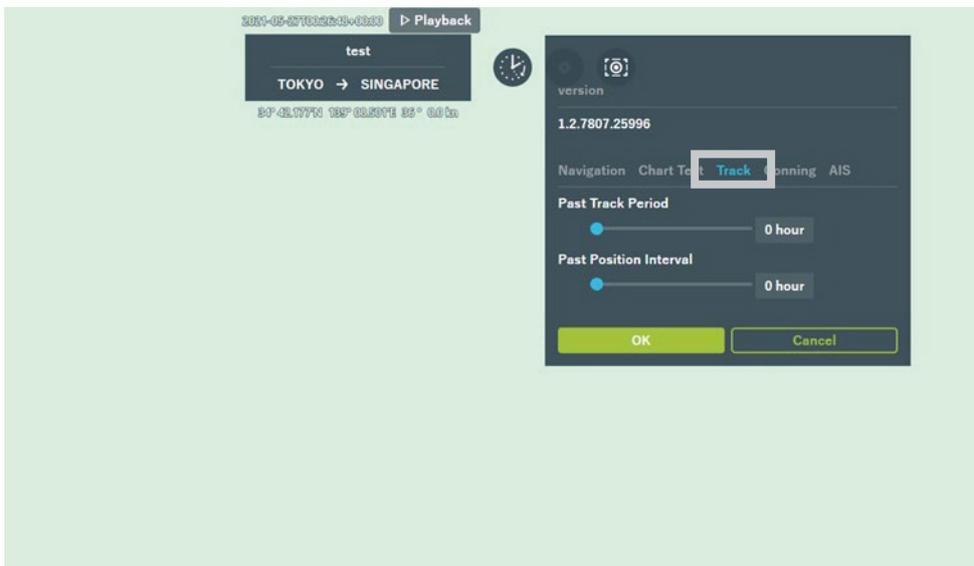
3. Tap the [OK] button to change the setting.

Tapping the [Cancel] button cancels the setting change.

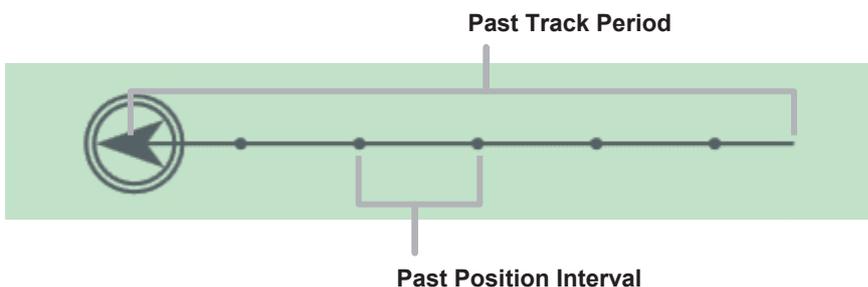
3.14.2.3 Setting Own Ship Track

1. Select [Track] tab

Each item of Own ship track setting is displayed



2. Set each item of Own ship track



Setting item	Setting content	Setting value
Past Track Period	Set the past time of Own ship wake	0–720 hour
Past Position Interval	Set the interval of point on Own ship route	0–24 hour

3. The setting is changed by tapping [OK] button.

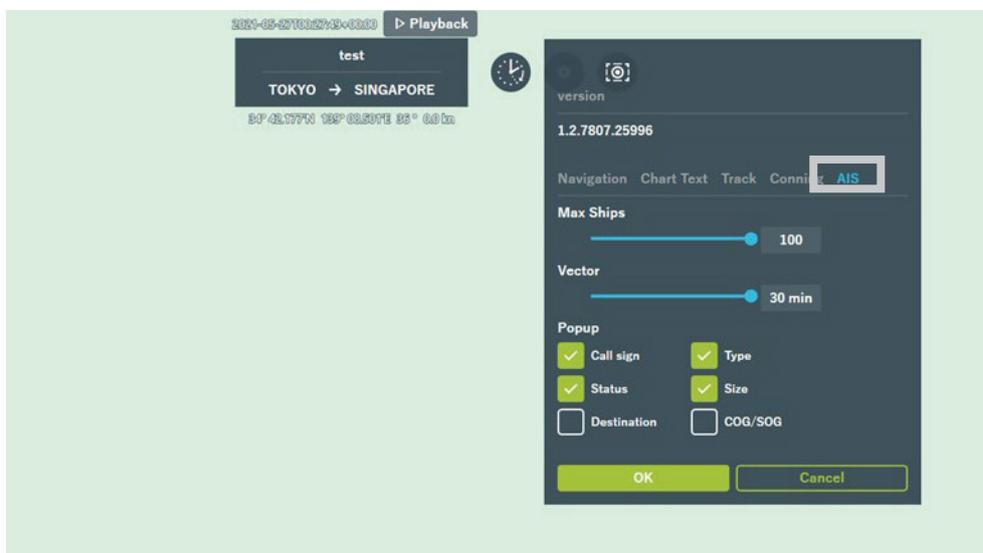
The setting is canceled by tapping [Cancel] button.

3.14.2.4 Setting AIS Display

Set the AIS display to be displayed on the chart.

1. Select the [AIS] tab.

The items of AIS are displayed.



2. Set each item of AIS.

Setting item	Description	Setting value
Max Ships	Set the maximum number of AISs to be displayed.	0 to 100
Vector	Set the vector length of AIS.	0 to 30 min
Call sign	Displaying/Not displaying of Call sign information is changed.	Check ON: Displaying Check OFF: Not displaying
Type	Displaying/Not displaying of Vessel Type information is changed.	Check ON: Displaying Check OFF: Not displaying
Status	Displaying/Not displaying of Navigation Status information is changed.	Check ON: Displaying Check OFF: Not displaying
Size	Displaying/Not displaying of Size information is changed.	Check ON: Displaying Check OFF: Not displaying
Destination	Displaying/Not displaying of Destination information is changed.	Check ON: Displaying Check OFF: Not displaying
COG/SOG	Displaying/Not displaying of COG/SOG information is changed.	Check ON: Displaying Check OFF: Not displaying

3. Tap the [OK] button to change the setting.

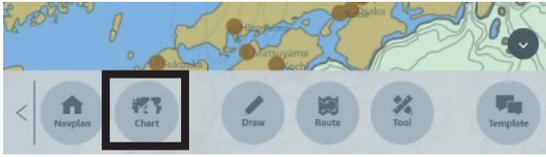
Tapping the [Cancel] button cancels the setting change.

3.14.3 Tracking Function

3.14.3.1 Home Function

This function is used, for example, when own ship is missing on the chart.

1. Tap the [Chart] icon.



Own ship is displayed at the center of the screen.

3.14.3.2 Motion Mode Switching Function

1. Tap the [Motion mode] icon.



2. Select the motion mode according to the purpose of use.

Selectable motion modes are shown in the following table.

Setting item	Function
TM	True Motion Mode <ul style="list-style-type: none">• The display position of own ship moves according to own ship's speed and course.• When own ship moves beyond the specified range, own ship is moved to the center of screen; the chart moves in conjunction with own ship.
RM	Relative Motion Mode <ul style="list-style-type: none">• Own ship is fixed at the center of the screen, and fixed objects such as land move relative to own ship.
Free	Free <ul style="list-style-type: none">• Any coordinate can be displayed regardless of own ship's position.• If the chart is moved manually, the motion mode automatically switches to Free.

3.15 Conning



CAUTION



This equipment displays the Conning information in a simplified manner. Different information than displayed on the Conning product may be displayed. For the detailed information, check the Conning product.

Conning enables check of ship's various information.

3.15.1 Displaying the Conning

Memo

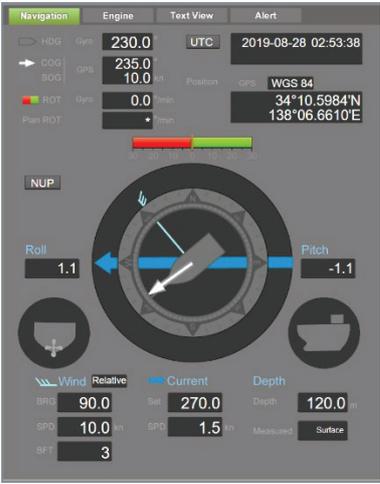
In the case of the new Conning screen, the Conning of the corresponding time can be displayed in NeCST when the Playback is played.

In the case of the old Conning screen, the real-time Conning will continue to be displayed even when the Playback is played.

If you want to change the Conning screen, contact our sales department, branch, branch office, sales office or agency.

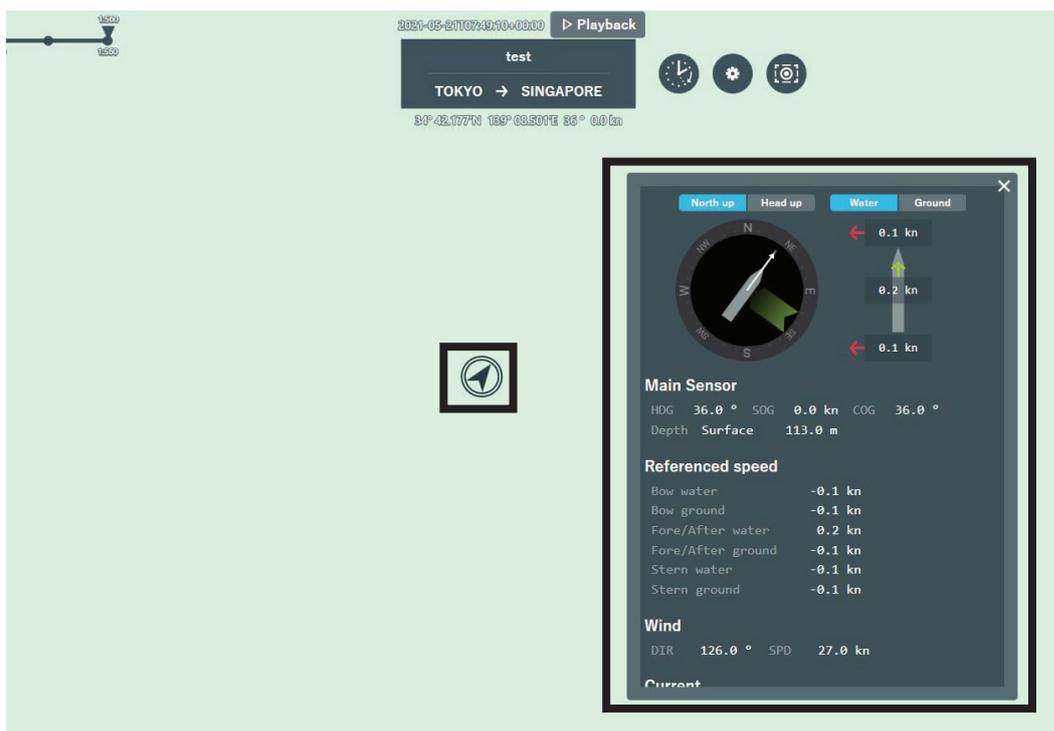


The new Conning screen



The old Conning screen

1. Tap the own ship icon.
The Conning screen is displayed.



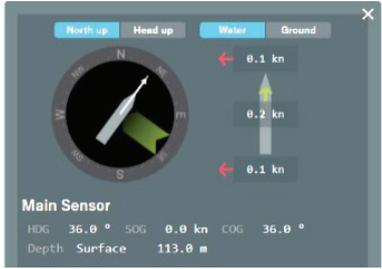
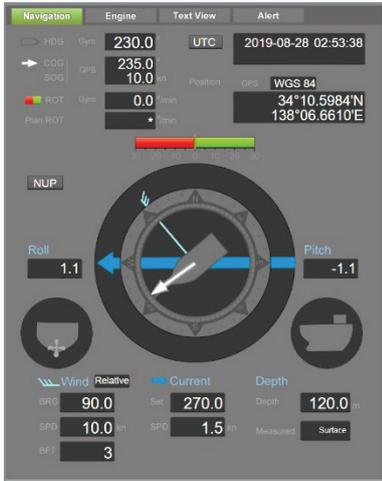
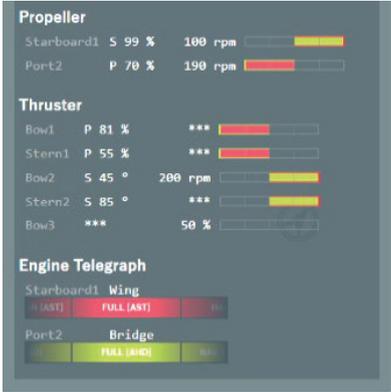
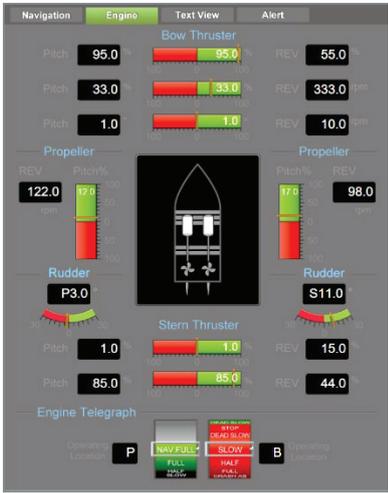
The new Conning screen

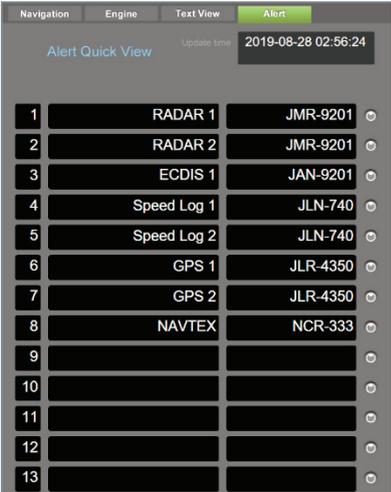
The old Conning screen

Memo

To display the Conning with the ship symbol outlined, tap the GPS positioning position within the ship symbol.
For the display of the own ship symbol, refer to "3.4.6 Own ship's symbol".

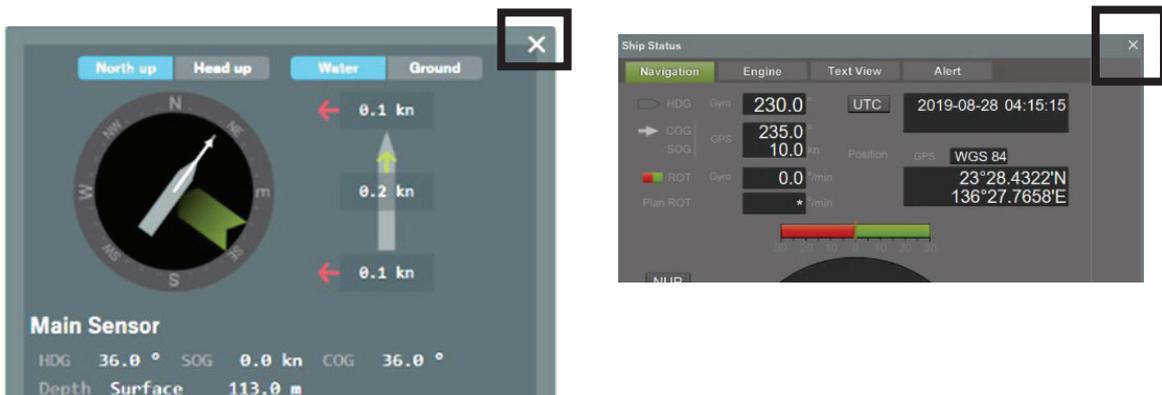
Each item of the Conning is explained in the following table.

Contents	Display example (New Conning screen)	Display example (Old Conning screen)
<p>Navigation</p> <p>Displays the voyage information of own ship.</p>		
<p>Engine</p> <p>Displays the engine/propeller information of own ship.</p>		
<p>Text View</p> <p>The information of each sensor of the own ship is displayed as text.</p>		

Contents	Display example (New Conning screen)	Display example (Old Conning screen)
<p>Alert</p> <p>Displays the status of JRC equipment connected to VDR of own ship.</p>	<p>None</p>	

3.15.2 Closing the Conning

1. Tap the [X] icon in the upper-right part of the window.



The Conning is closed.

Note

When displaying other menus, it may not be possible to close the Conning window. Tap the Chart icon to close it.



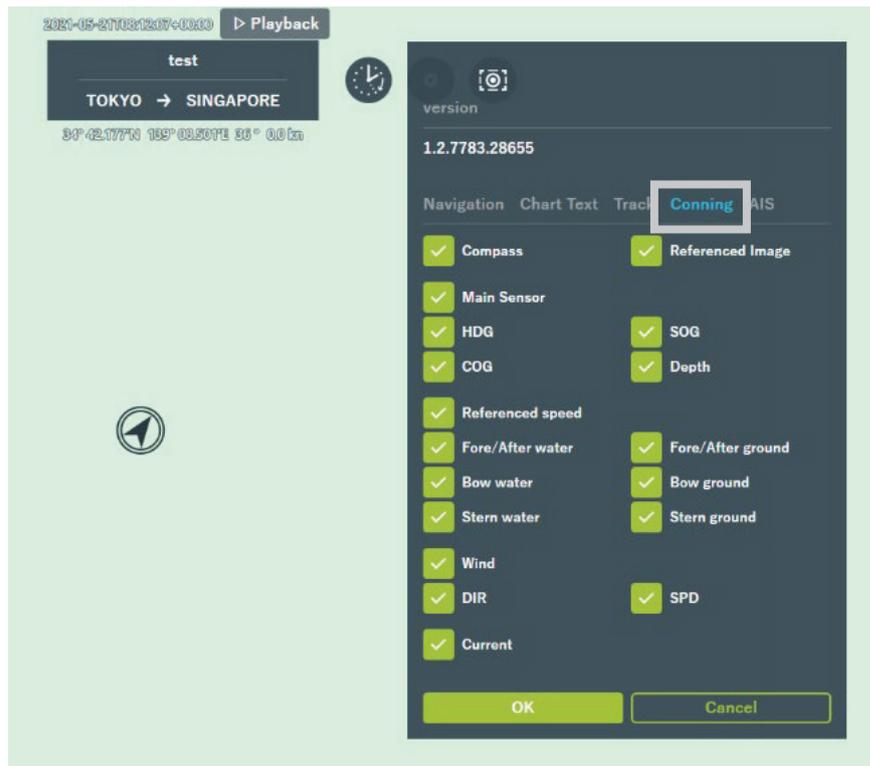
3.15.3 Conning Display Setting

When the new Conning screen is set, you can change the display items of Conning.

1. Tap [Gear] icon.



The Conning settings screen is displayed.



2. Set each item of Conning.

3. Tap the [OK] button to change the settings.

By tapping the [Cancel] button, the setting change will be cancelled.

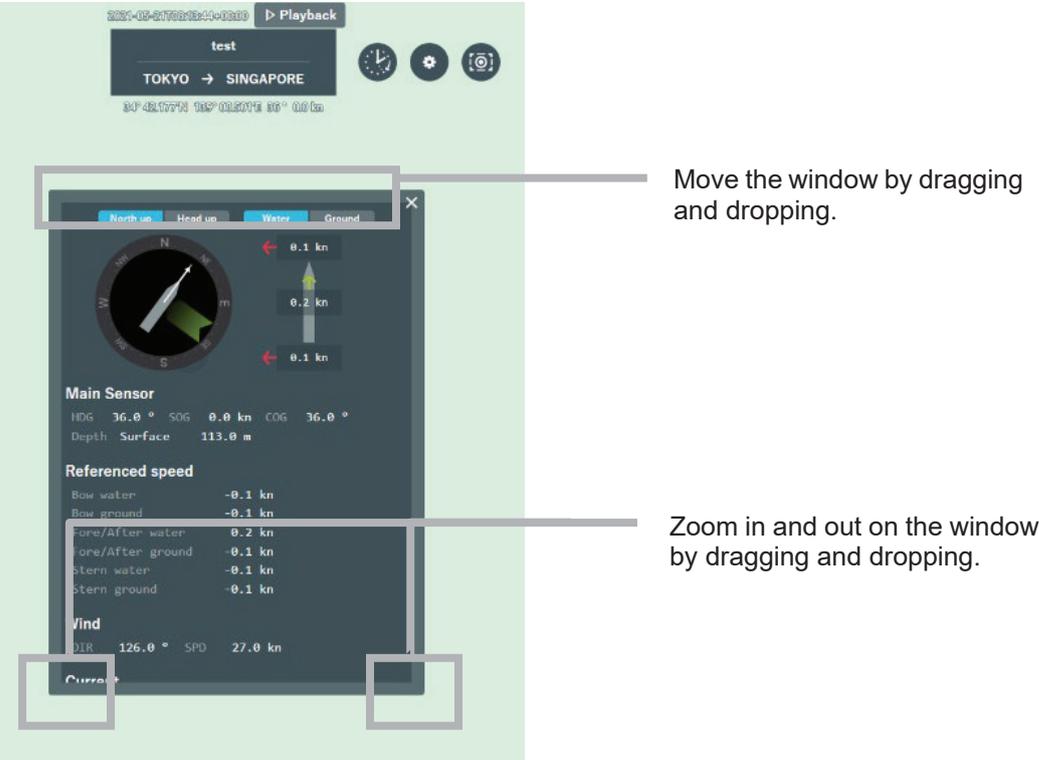
3.15.4 Move the Display Position of Conning

The new Conning screen can be moved to any display position.
 The old Conning screen cannot be moved.

1. Tap "Own Ship Symbol" to display the "New Conning Screen".



2. The "New Conning Screen" window can be moved to any position.
 The window can be enlarged or reduced.



3.16 AIS Display

This function enables display of received AIS information.

3.16.1 Displaying AIS Target Symbols

The AIS target symbols can be displayed on the chart.



3.16.2 AIS Symbol Display

In AIS, display symbols differ depending on AIS information types. The AIS symbols displayed are shown in the following table.

Information type	Detailed information	Display symbol	Remarks
AIS	ClassA/B AIS		Speed \geq 0.5 kn
			Speed < 0.5 kn
	AtoN		
	BS		
	SAR		

Memo

- If a ship name cannot be received from AIS information, the ship name is not displayed.
- The ship's vector is displayed based on the speed and heading direction of AIS data.

3.16.3 AIS Symbol Colors

Symbol colors are classified into two groups: State Color representing the ship’s status and Type Color representing the ship type.

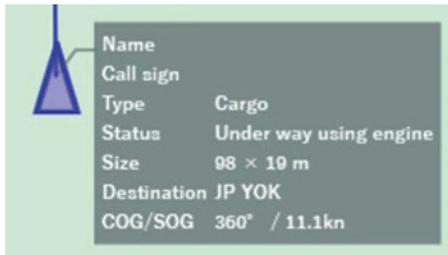
- State Color: Border colors of symbols
- Type Color: Colors that symbols are filled with

Type Color of a symbol is determined based on the “ship code” of AIS information. The following table shows the details.

Item color	Description	Remarks
[State Color]	Normal	
	Lost	
[Type Color]	SAR	
	BS	
	AtoN	
	Passenger ship	
	Cargo	
	Tug or Pilot	
	Search ship/ Rescue ship	
	Fishing boat	
	Tanker	
	Others	

3.16.4 About AIS Information

You can display AIS information by tapping the AIS symbol.



The pieces of information listed below are displayed.

Display information	Description
Name	Displays the ship name of an AIS symbol.
Call sign	Displays Call sign
Type	Displays the ship type of AIS symbol <ul style="list-style-type: none"> • Passenger • Cargo • Tug/Pilot • Search/Rescue • Fishing • Tanker • Other
Status	Displays the navigation status of AIS symbol <ul style="list-style-type: none"> • Under way using engine • At anchor • Not under command • Restricted manoeuvrability • Constrained by her draught • Moored • Aground • Engaged in fishing • Under way sailing • Unknown
Size	Displays the length and width of AIS symbol
Destination	Destination is displayed.
COG/SOG	COG (Course Over Ground) and SOG (Speed Over Ground) are displayed

Memo

If the symbol is BS, SAR or AtoN, the detail information is not displayed even selected.

3.17 Photo Display Function

This function enables management of taken photos. In addition, it enables displaying thumbnail images on the chart in conjunction with the position information added to photos.

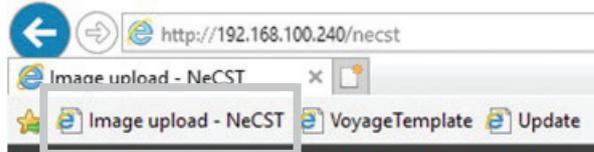
3.17.1 Uploading a Photo

1. Start Internet Explorer in the display processing unit and tap the “Image upload - NeCST” icon.

Access to “<http://192.168.XXX.XXX/necst>”.

In “192.168.XXX.XXX”, the IP address of the data processing unit is set.

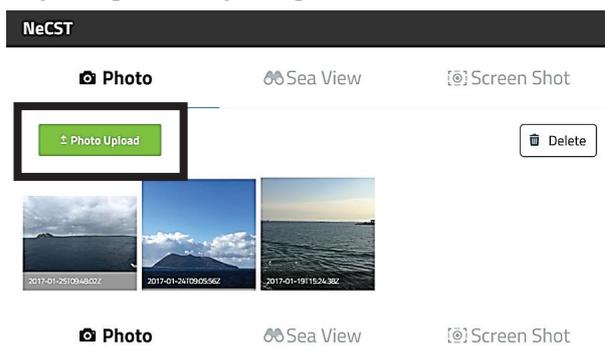
The default IP of data processing unit is 192.168.100.240



The Image-upload screen is displayed.

2. Open the Photo tab.

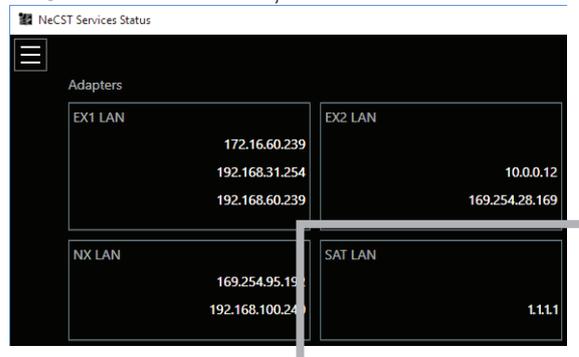
3. Tap the [Photo Upload] icon.



The folder list is displayed.

Memo

Operation is also possible from a PC connected to the same Internet environment as the NeCST. Start Watcher, check the IP address of SAT-LAN and use it.



Example: Open the browser on another PC and enter “<http://1.1.1.1/necst>” in the address bar. Enter the IP address set for SAT-LAN in 1.1.1.1.

4. Select a photo to upload it.

Memo

Take a photo with location information added.
The Map-linked-display function enables displaying on the chart the location information added to a photo.

If a photo without location information is uploaded, the photo is placed at a latitude and longitude of 0° N 0° E.

Memo

Up to 100 photos can be uploaded.

3.17.2 Displaying a Photo

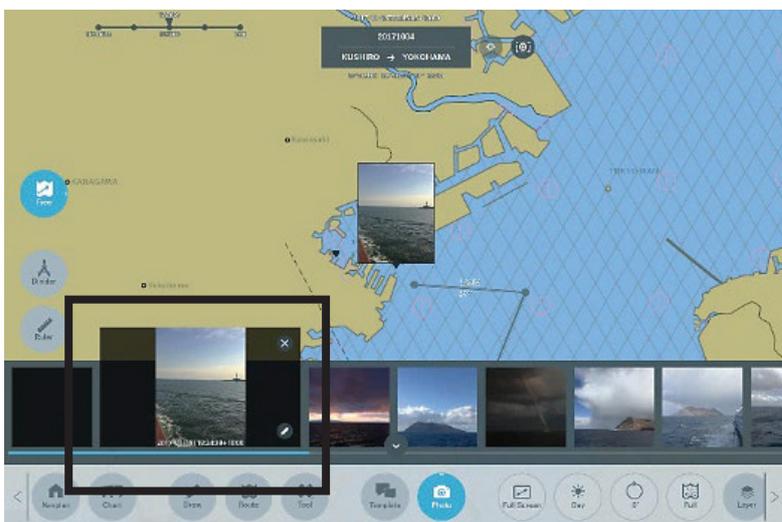
1. Tap the [Photo] icon.

The mode switches to the photo management mode.



2. Select the uploaded photo.

The selected photo is displayed.



3.17.3 Writing to a Photo

Data can be written to photo data.
At that time, the line width or line color can be changed.

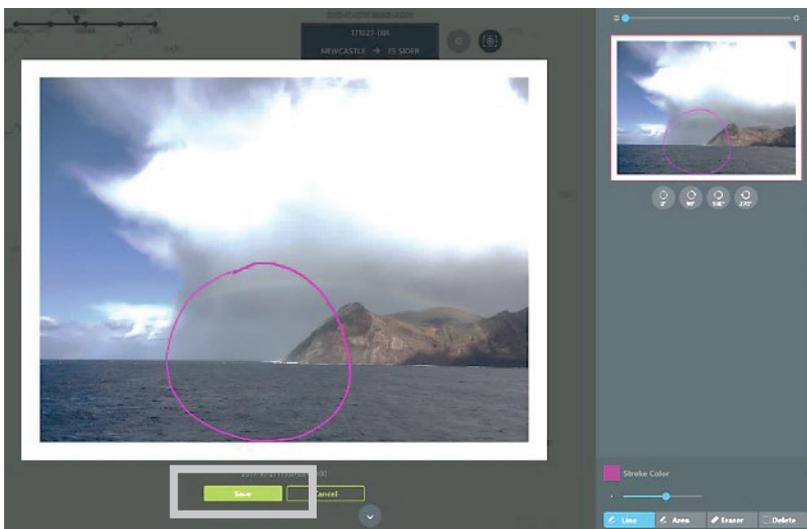
1. Tap the [Pencil] icon.

The selected photo is displayed, and you can write to it.
Refer to “3.17.2 Displaying a Photo” for how to display a photo.



2. Write to the photo.

To save the photo, tap the [Save] button.
To not save the photo, tap the [Cancel] button.



Memo

When writing to the photo, the data will be uploaded automatically to Smart Ship Viewer.
Photos uploaded to Smart Ship Viewer can be checked with NeCST Manager.

3.17.4 Editing Writing to Photo

The following edit functions can be used in writing to photos.

Edit function	Related section
To change the type of writing to a photo	3.17.4.1 Changing the Type of Writing to Photo
To change the color of writing to a photo	3.17.4.2 Changing the Color of Writing to Photo
To change the transparency of writing to a photo	3.17.4.3 Changing the Transparency of Writing to Photo
To change the line width of writing to a photo	3.17.4.4 Changing the Line Width of Writing to Photo
To zoom in on a photo	3.17.4.5 Zooming In on Photo
To switch the display direction of a photo	3.17.4.6 Switching the Photo Display Direction
To delete writing to a photo	3.17.5 Deleting Writing to Photo

3.17.4.1 Changing the Type of Writing to Photo

1. Select the [Line] or [Area] icon.
Select according to the purpose of use.



Line selected



Area selected

3.17.4.2 Changing the Color of Writing to Photo

The color of writing to a photo can be changed.

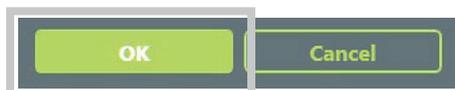
1. Tap the [Stroke Color] icon.



The color pallet is displayed.



2. Select a new color and tap the [OK] button.
To cancel the change, tap the [Cancel] button.



Memo

The color and transparency of already-written data cannot be changed.

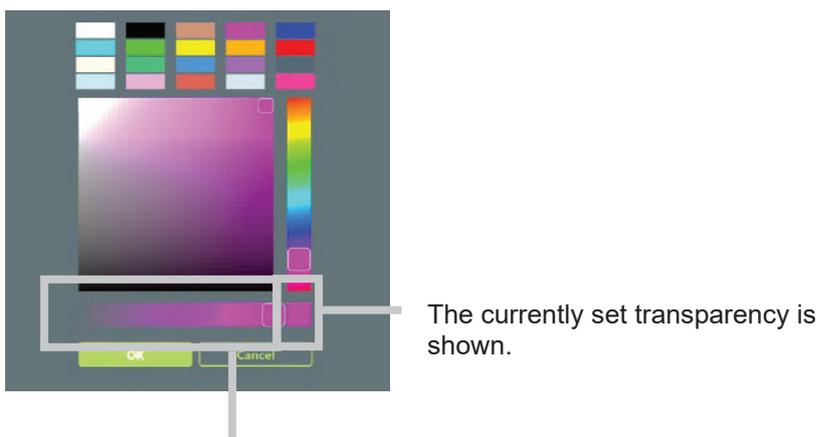
3.17.4.3 Changing the Transparency of Writing to Photo

The transparency of writing to a photo can be changed.

1. Tap the [Stroke Color] icon.



The transparency is shown.



Displays the transparency bar and the range of transparency.

2. Adjust the transparency bar and tap the [OK] button.
To cancel the change of transparency, tap the [Cancel] button.

Memo

When the line type is set to [Area], Fill Color can be set in addition to Stroke Color.

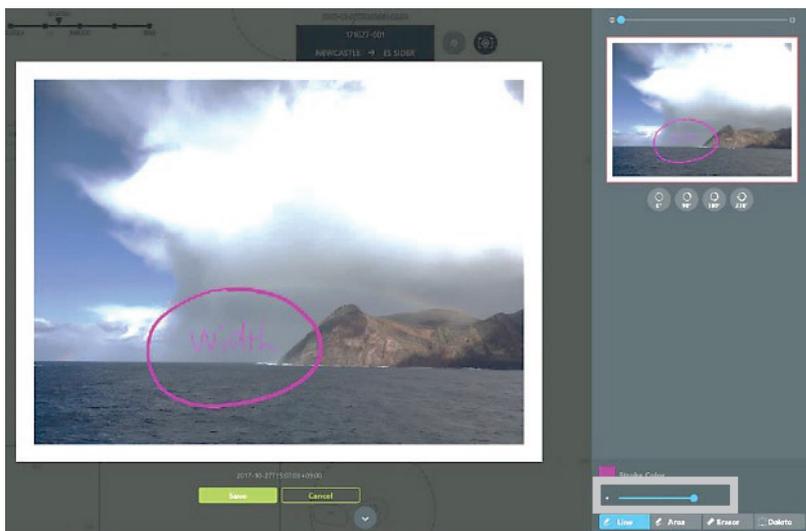


The color and transparency can be changed for Fill Color similarly to Stroke Color. Refer to “3.17.4.2 Changing the Color of Writing to Photo” and “3.17.4.3 Changing the Transparency of Writing to Photo” for details.

3.17.4.4 Changing the Line Width of Writing to Photo

1. Change the line width.

Change to any line width and write to a photo.

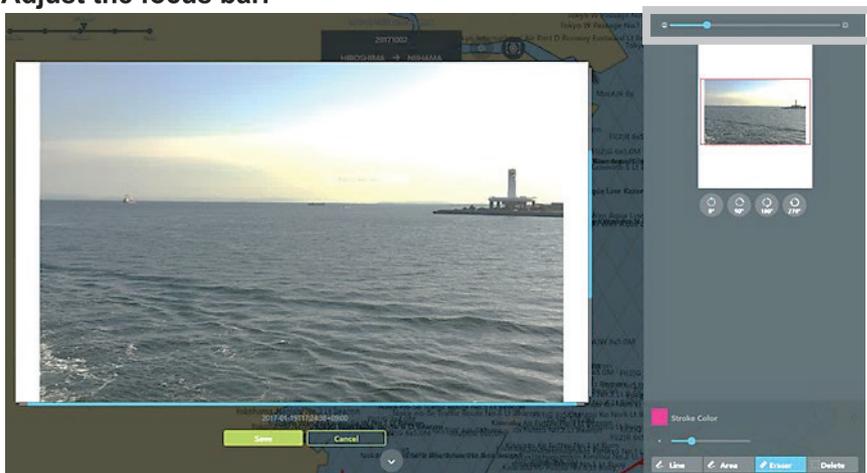


3.17.4.5 Zooming In on Photo

Photos can be zoomed in for checking.

This operation is explained below, taking an operation of zooming in on a photo as an example.

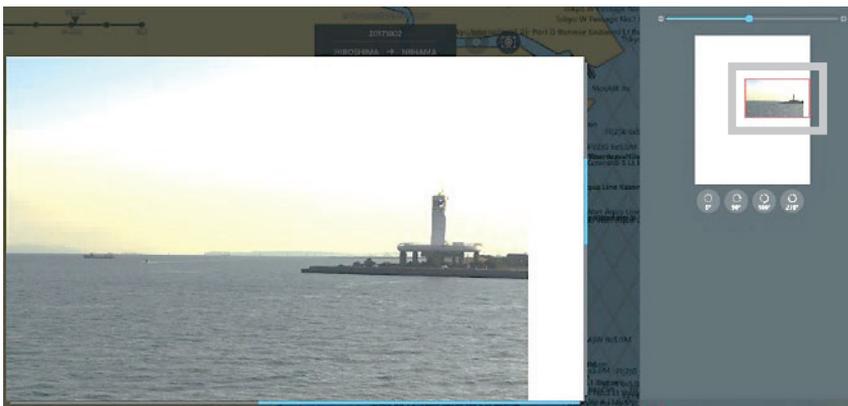
1. Adjust the focus bar.



Zoom in on the photo



The photo is zoomed in.
Adjust the position of the red border to the place on which you want to zoom in.



3.17.4.6 Switching the Photo Display Direction

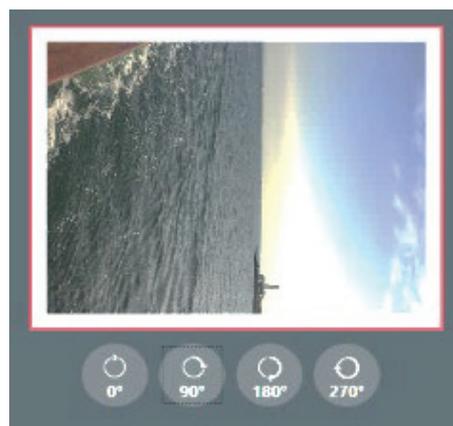
The display direction of a photo can be switched to check the photo.

1. Set the direction of the photo to be displayed.

The photo is displayed using 0° as a reference.



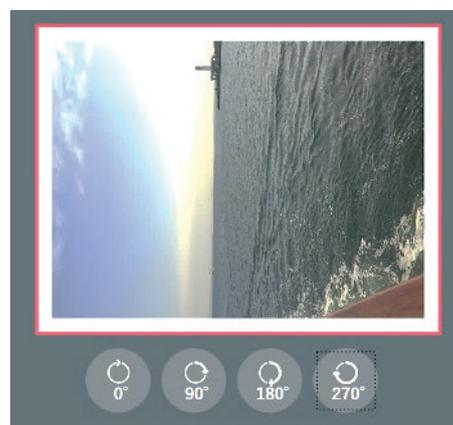
0°



90°



180°



270°

3.17.5 Deleting Writing to Photo

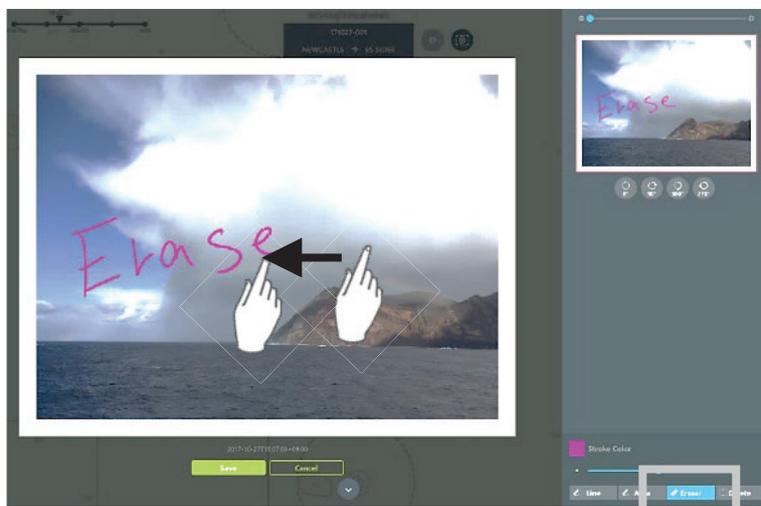
Writing on the photo can be deleted.

3.17.5.1 Deleting Using Eraser Function

1. Tap the [Eraser] icon.

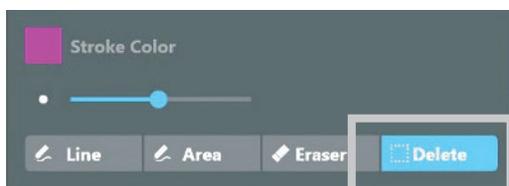


2. Stroke the writing you want to delete.
The stroked part of the writing is deleted.



3.17.5.2 Deleting Encircled Area at One Time

1. Tap the [Delete] icon.



2. Encircle the area you want to delete.

The handwritten data of encircled area is deleted at one time.



3.17.6 Deleting Photo

The imported photo can be deleted.

1. Tap the [Photo] icon.

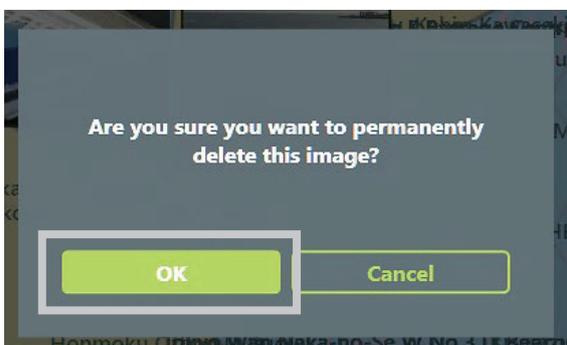
The mode switches to the photo management mode.

2. Select the image you want to delete.

3. Tap the [X] icon.



The delete confirmation pop-up is displayed.



4. To delete the image, tap the [OK] button.

To cancel the delete, tap the [Cancel] button.

3.18 Sea View Function

This function enables display of icons on the chart in conjunction with the position and bearing information of a photo.

3.18.1 Uploading Photo to Sea View

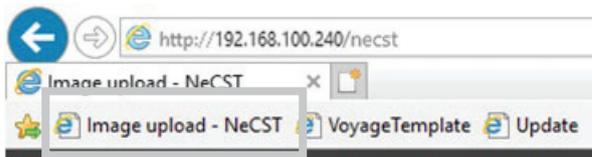
1. Start Internet Explorer in the display processing unit and tap the “Image upload - NeCST” icon.

Access to <http://192.168.XXX.XXX/necst>.

In “192.168.XXX.XXX”, the IP address of the data processing unit is set.

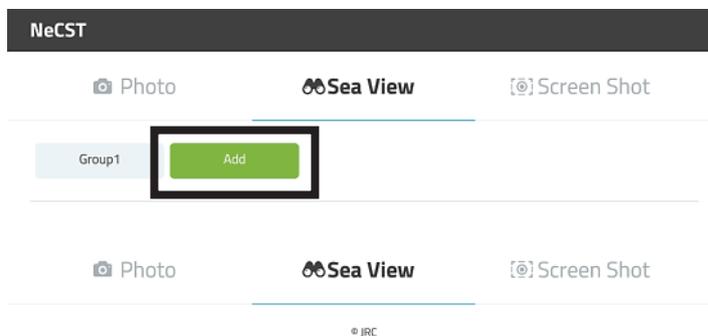
The default IP of data processing unit is 192.168.100.240

Uploading is possible from a PC connected to the same Internet environment as NeCST. Refer to " 3.17.1 Uploading a Photo" for details.

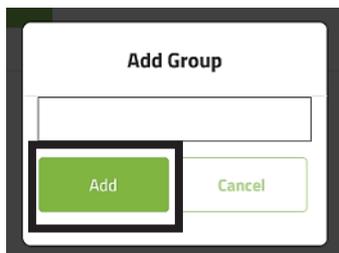


The Image-upload screen is displayed.

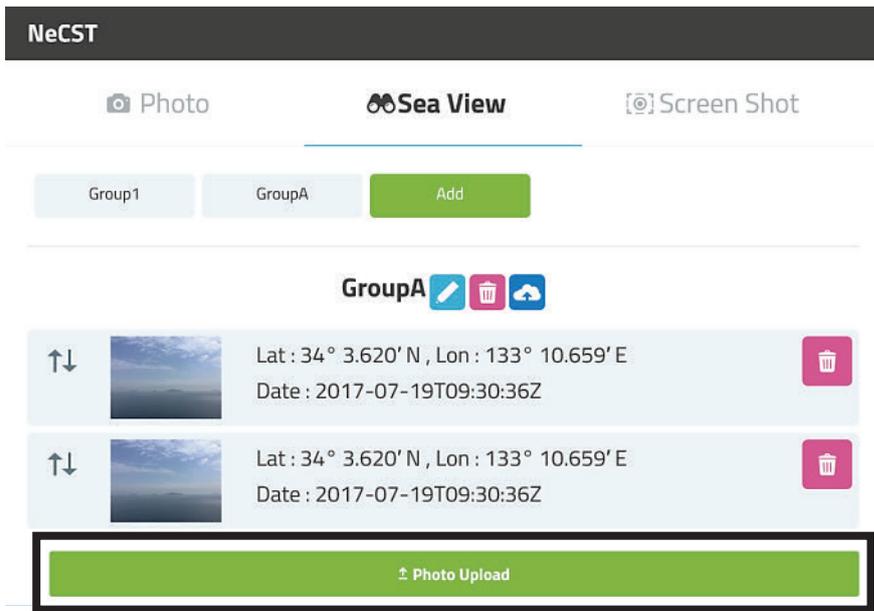
2. Open the Sea View tab.
3. Tap the [Add] button to create a new group.



4. Enter a group name and tap the [Add] button.



5. Tap the [Photo Upload] icon.



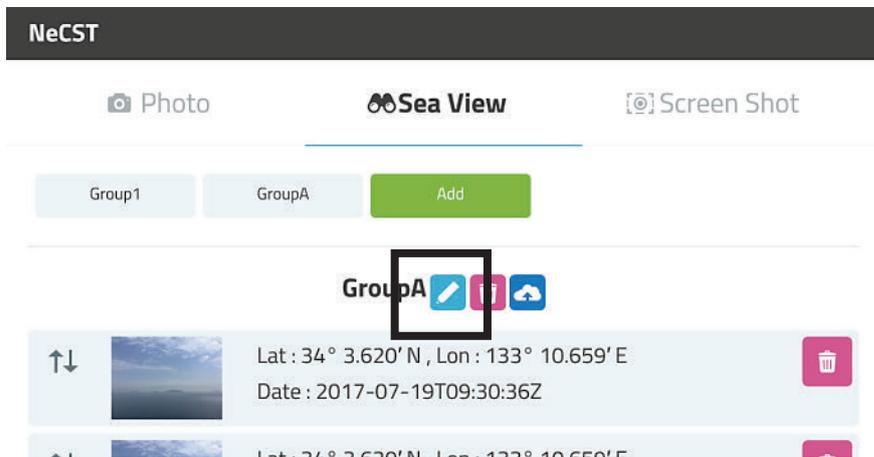
The folder list is displayed.

6. Select a photo and upload it.

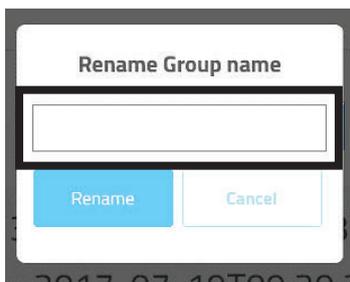
Memo
The group of Sea View can be created up to 25.
And Up to 100 photos can be updated in each group.
It is possible to select multiple photos at once and upload them.
If trying to upload more than 100 photos, uploading will be carried out to 100th piece,
Not done more than 100 images. Upload them to another group.

3.18.2 Renaming the Group Name

1. Tap the Edit icon.



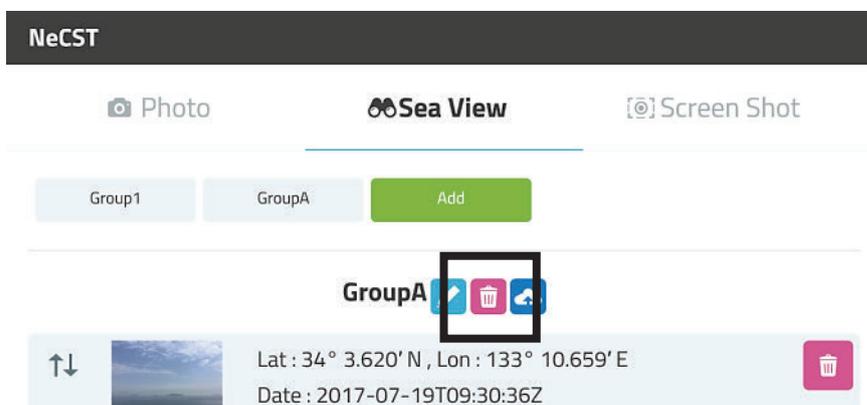
2. Enter new group name.



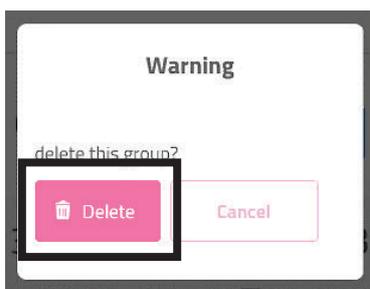
3. To complete the change, tap [Rename] button.
To cancel the change, tap [Cancel] button.

3.18.3 Deleting the Sea View group

1. Tap the delete icon.



2. To delete the group, tap [Delete] button.
To cancel the delete, tap the [Cancel] button.



Note

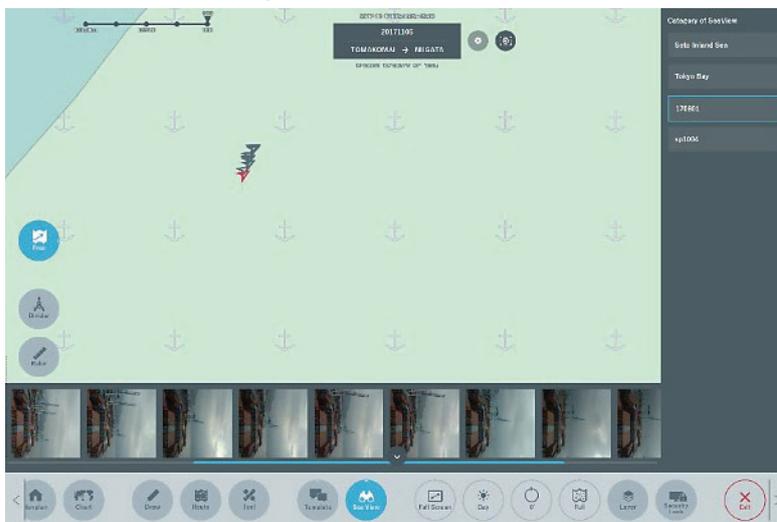
When deleting a group, all the photos included in the group will also be deleted.
Delete it after thoroughly checking.

3.18.4 Displaying Sea View

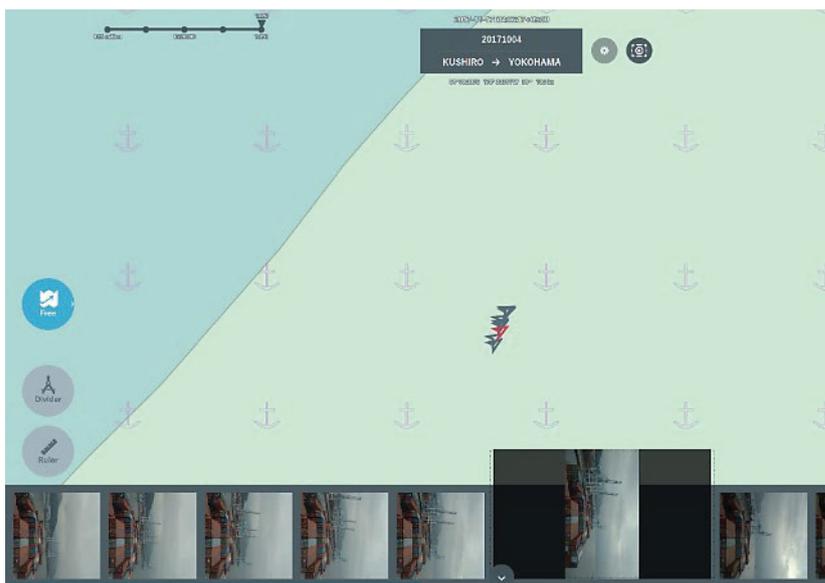
1. Tap the [Sea View] icon.



The photo list is displayed.



2. Select a photo from the photo list.
The selected photo and icon are displayed.



3.19 Screen Lock Function

This function enables locking the display screen.
Use this function when you do not want others to use this equipment.

1. Tap the [Security Lock] icon.



The lock screen is displayed.



Memo

Tapping the J, R, and C icons at the same time unlocks the screen.
The lock screen may be displayed in the background. In that case, close the NeCST app and unlock the lock screen.

3.20 NeCST Emergency Function

NeCST Emergency information can be shared in real time between ships and land.
NeCST Emergency also has a drill function. For more information on the NeCST Emergency Drill Function, refer to "3.20.7 NeCST Emergency Drill Function".

Memo

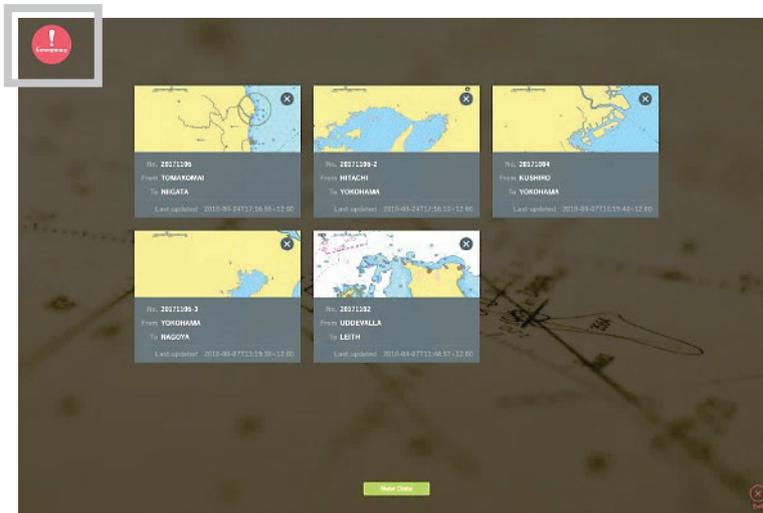
For using NeCST Emergency function, it is necessary to contract and connect Smart Ship Viewer.

For using all the functions of NeCST Emergency, it is necessary to equip NeCST Manager.

If there is the question about contracting to Smart Ship Viewer, contact sales department, branch or branch office.

3.20.1 Starting NeCST Emergency

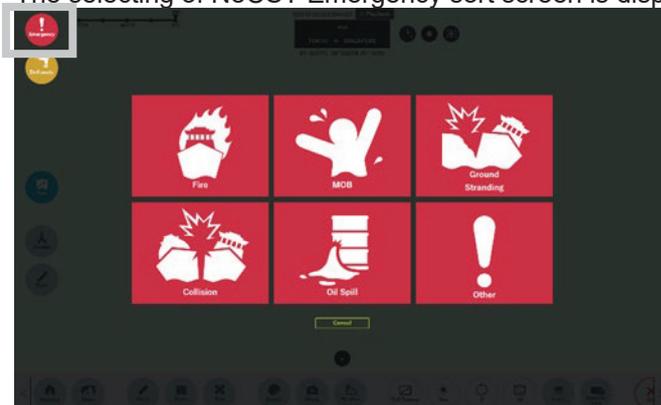
1. Tap [Emergency] icon in upper left of screen



Memo

It is possible to tap Emergency icon in the chart displaying screen after selecting each navigation data

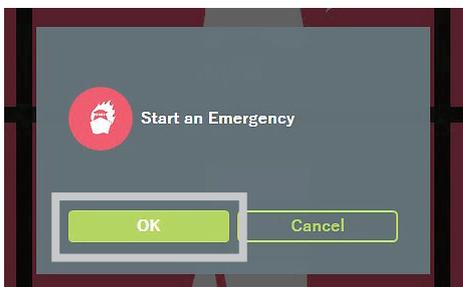
The selecting of NeCST Emergency sort screen is displayed.



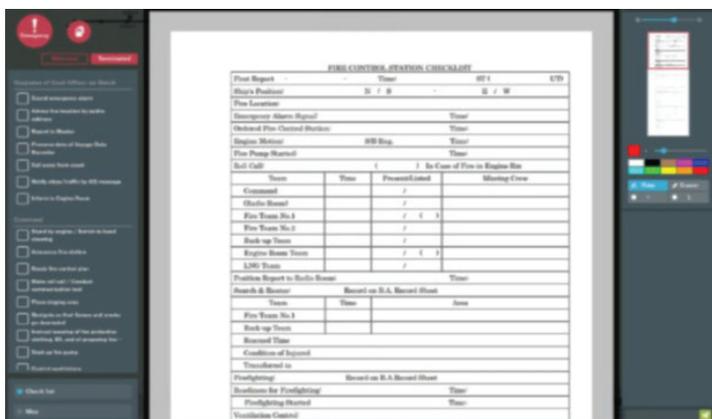
There are 6 items in NeCST Emergency menu as follows.

- Fire
- MOB
- Ground Stranding
- Collision
- Oil Spill
- Other

After selecting item and taping [OK] button in confirmation pop-up, NeCST Emergency is started.



After starting, each NeCST Emergency item screen is displayed.

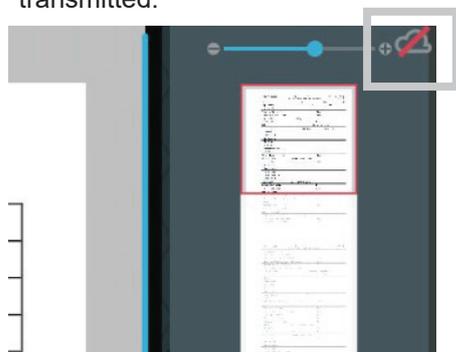


Memo

Check list and screen are example of referring
 It is possible to select and change check list which is used each ship and screen in Smart Ship Viewer

Memo

When an NeCST Emergency is started, notified to Smart Ship Viewer.
 Also, information of own ship and AIS information at the NeCST Emergency occurred is transmitted.



If the icon on the left is displayed at the upper right of NeCST Emergency screen, communication with Smart Ship Viewer has not been established.
 Check the communication environment to share NeCST Emergency information with the shore side.
 NeCST Emergency information that occurred while not communicating with Smart Ship Viewer be communicated to shore side after restoration of communication.

It is possible to operate in each NeCST Emergency screen

Function	Refer
Using check list	3.20.2 Using Check List
Write handwriting	3.20.3.1 Write Handwriting
Changing the color of handwriting and pin	3.20.3.2 Changing the Color of Handwriting and Pin
Changing the width of handwriting line	3.20.3.3 Changing the Width of Handwriting Line
Deleting handwriting	3.20.3.4 Deleting Handwriting
Placing Pin	3.20.3.5 Placing Pin
Deleting Pin	3.20.3.6 Deleting Pin
Focusing screen	3.20.3.7 Focusing Screen
Changing screen	3.20.3.8 Changing Screen
Chatting	3.20.4 Chatting

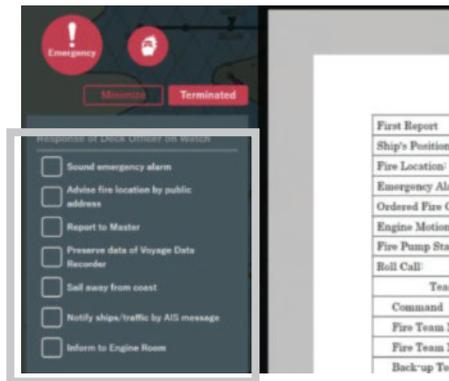
3.20.2 Using Check List

The checklist which should be carried out is displayed in NeCST Emergency screen. After confirmation, carry out which should be done. With NeCST Manager, the status of checklist can be checked from the shore side. Operate the NeCST Emergency Drill Function in the same way.

Memo

Checklists and images used for each ship can be specified and changed with Smart Ship Viewer.

1. Confirm checklist



2. Check the item which had been done.

It is changed checked status



Memo

After tapping the group title, it is possible to collapse the checklist for each group. In case of checking all the items in the group, use it by collapse etc.



3.20.3 Sharing Handwriting Data

Enables to write handwriting and pins on pre-registered images. With NeCST Manager, it is possible to share the handwriting information between ship and shore in real time.

Operate the NeCST Emergency Drill Function in the same way.

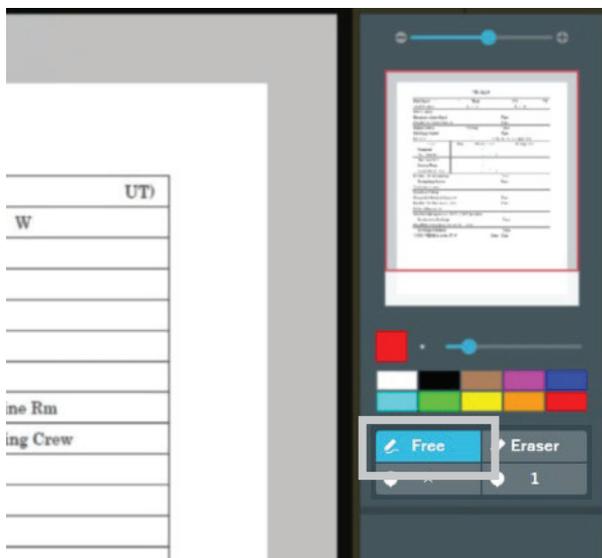
Note

If the application is forcibly terminated while NeCST Emergency is processing, the image being edited may not be displayed.
If the image is not displayed, restart the application.

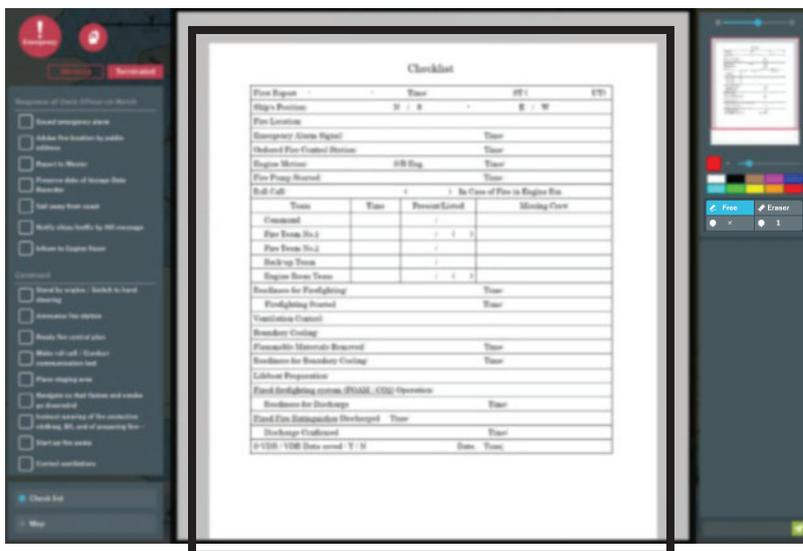
3.20.3.1 Write Handwriting

1. Tap [Free] button

It is possible to hand-write in the screen



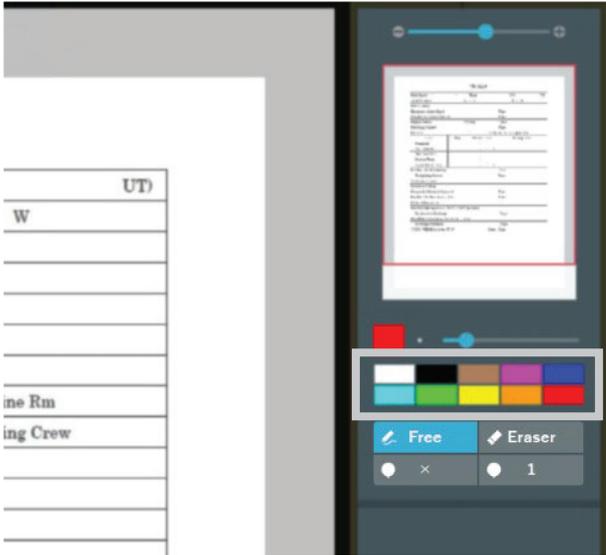
2. Fill in any handwriting.



3.20.3.2 Changing the Color of Handwriting and Pin

1. Tap any color.

It is possible to change handwriting and pin color



The changed color is displayed.



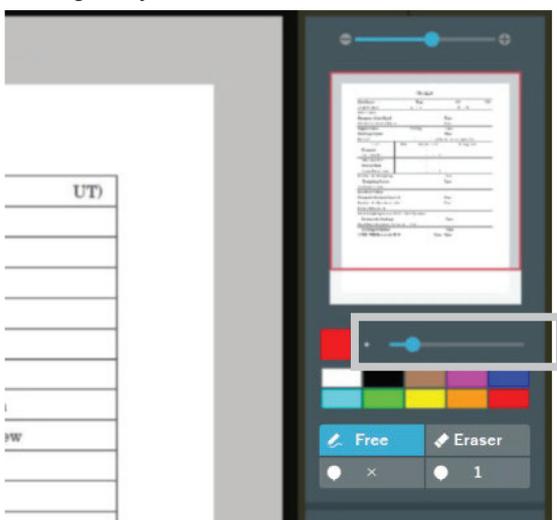
Memo
It is impossible to change the handwriting and pin color which was finished writing.

3.20.3.3 Changing the Width of Handwriting Line

It is possible to change the line width of handwriting data.

1. Operate line width slider

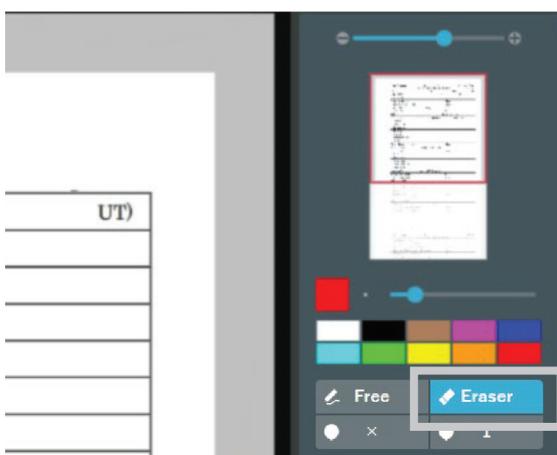
Change any line width



3.20.3.4 Deleting Handwriting

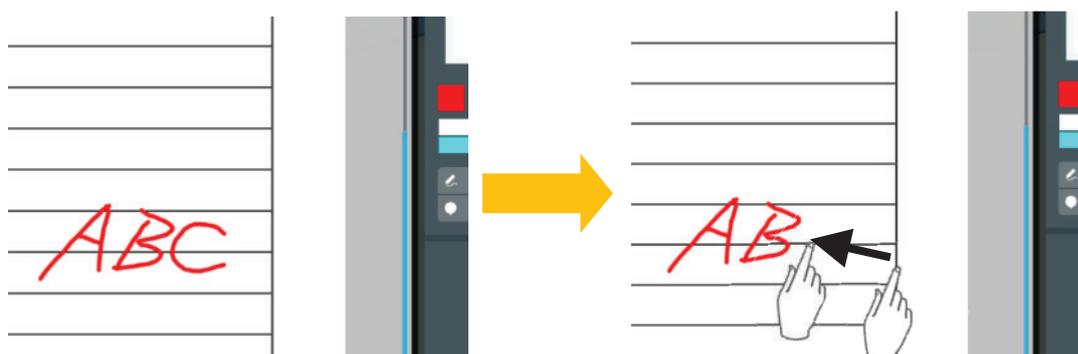
It is possible to delete the recorded handwriting data.

1. Tap [Eraser] icon



2. Stroke on the hand writing data which would like to be deleted.

The data which was stroked is deleted.



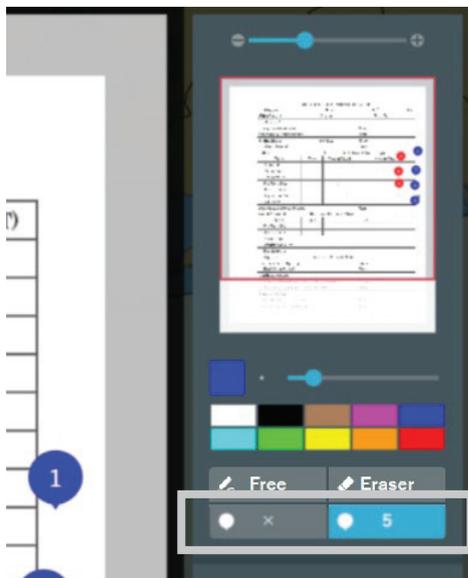
3.20.3.5 Placing Pin

It is possible to place the pin in the screen.

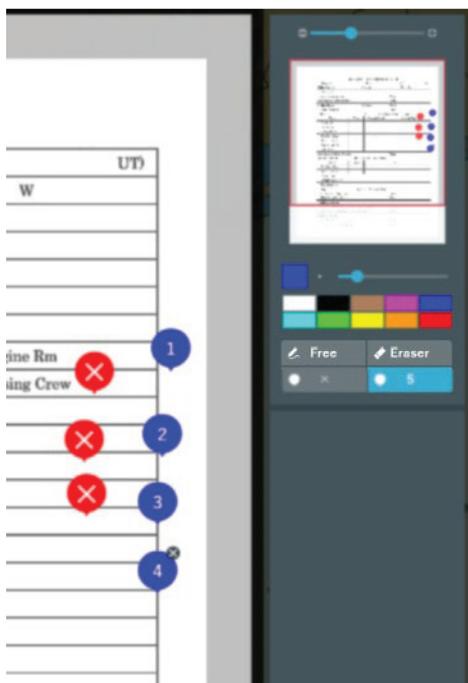
It is possible to place and use where should be taken care of and in order.

- × pin : It is possible to place in areas to be noticed.
- Number pin : It is possible to place the pin in order. After placing, if not necessary, delete it.

1. Tap any pin



2. Place the pin in the screen.



Memo

After placing, the number pin is increased.

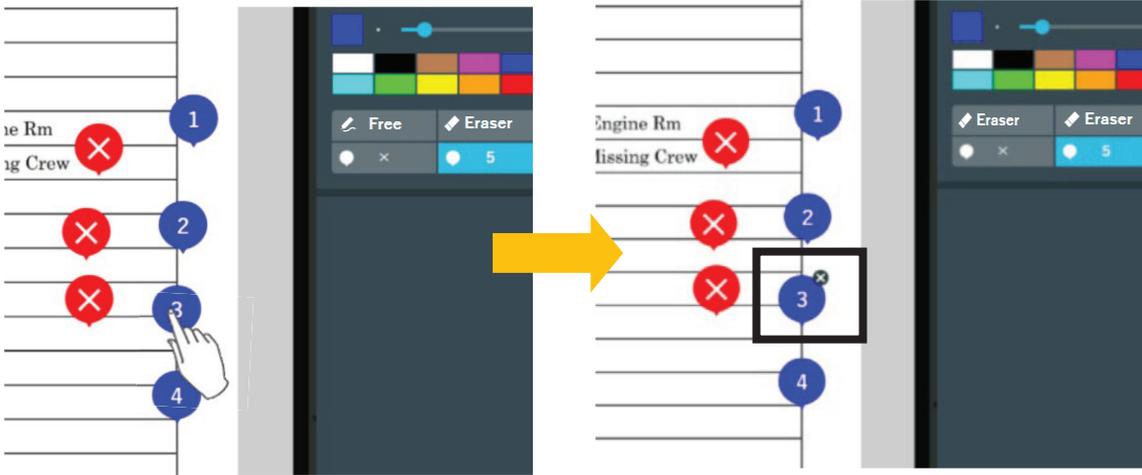
It is impossible to change the number of the number pin after placing.

3.20.3.6 Deleting Pin

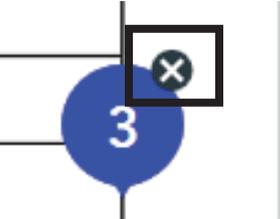
It is possible to delete the pin which had been placed.

Memo
Even if deleting, the numbers other than the deleted number pin will not change.

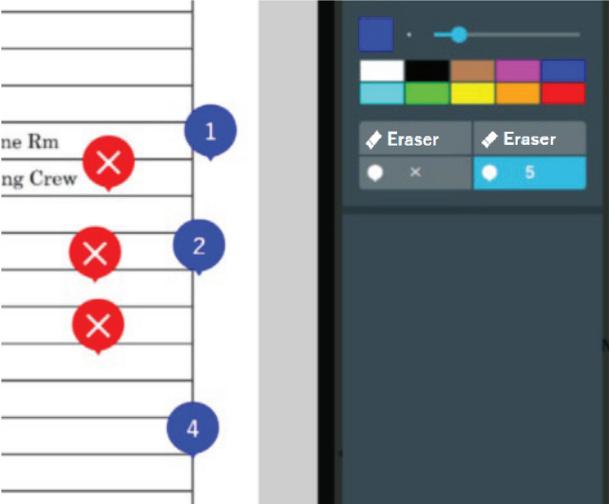
- 1. Select the pin which will be deleted.
X icon is displayed upper top of right to the pin.



- 2. Tap the X icon of the pin

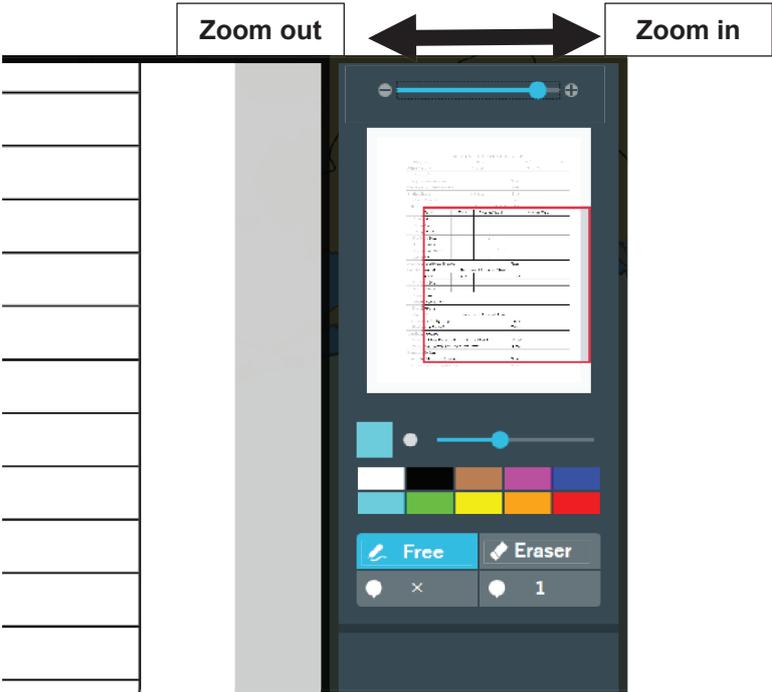


After tapping X icon, the pin is deleted.



3.20.3.7 Focusing Screen

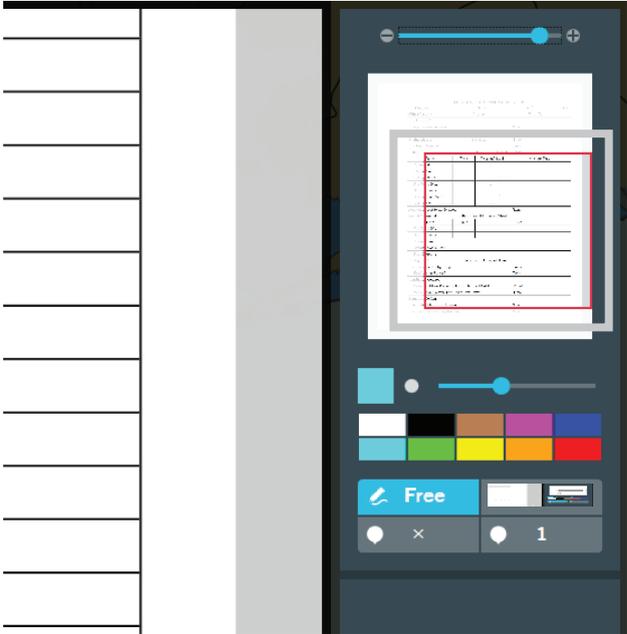
1. Adjust the focus bar.



Adjust according to purpose

2. Adjust focus area.

The area within the red frame is displayed. Adjust the red frame to the area where would like to display.



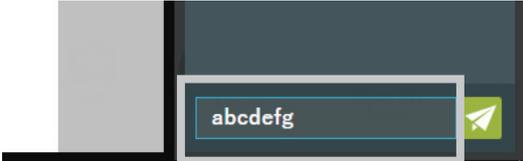
3.20.4 Chatting

With NeCST Manager or Smart Ship Viewer Mobile , it is possible to conversant by character between ship and shore.

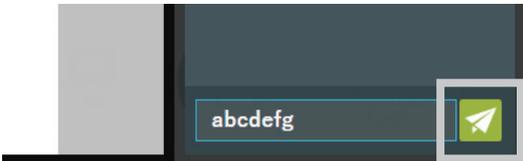
Operate the NeCST Emergency Drill Function in the same way.

Memo
NeCST Manager is a land NeCST that can chat and share images with NeCST.
Smart Ship Viewer Mobile is an application for smartphones to chat with NeCST.

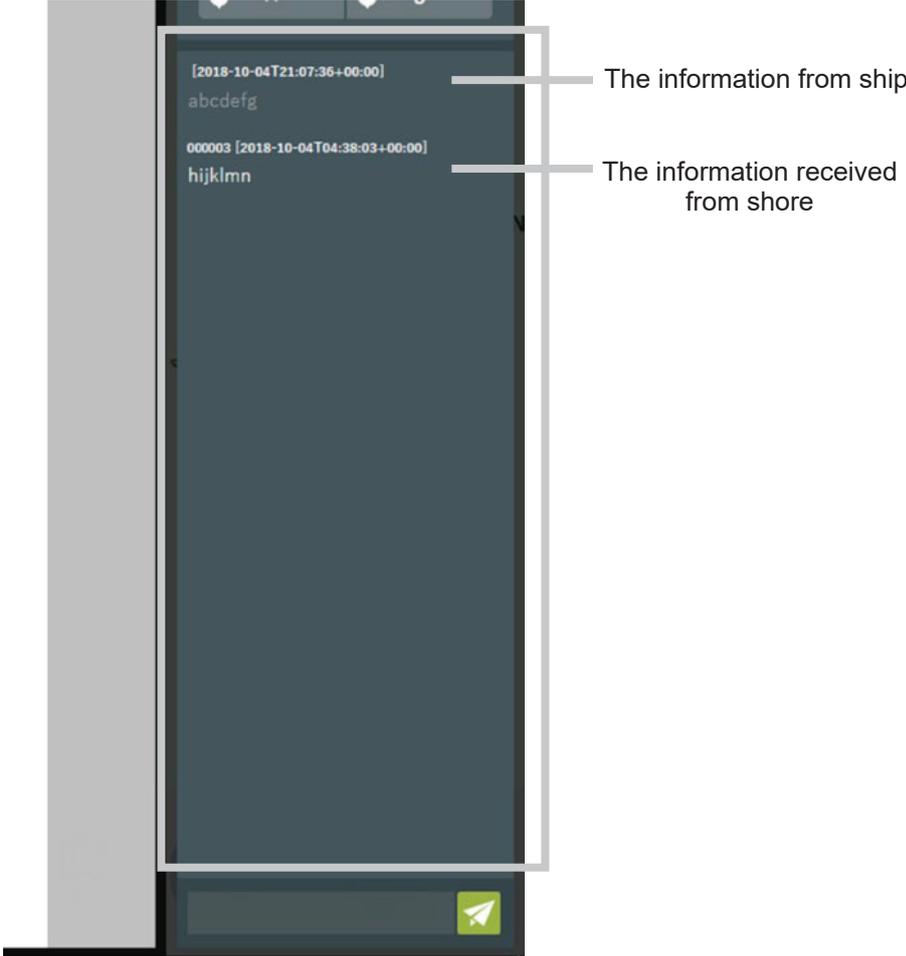
1. Input the chat



2. Tap the sending icon.



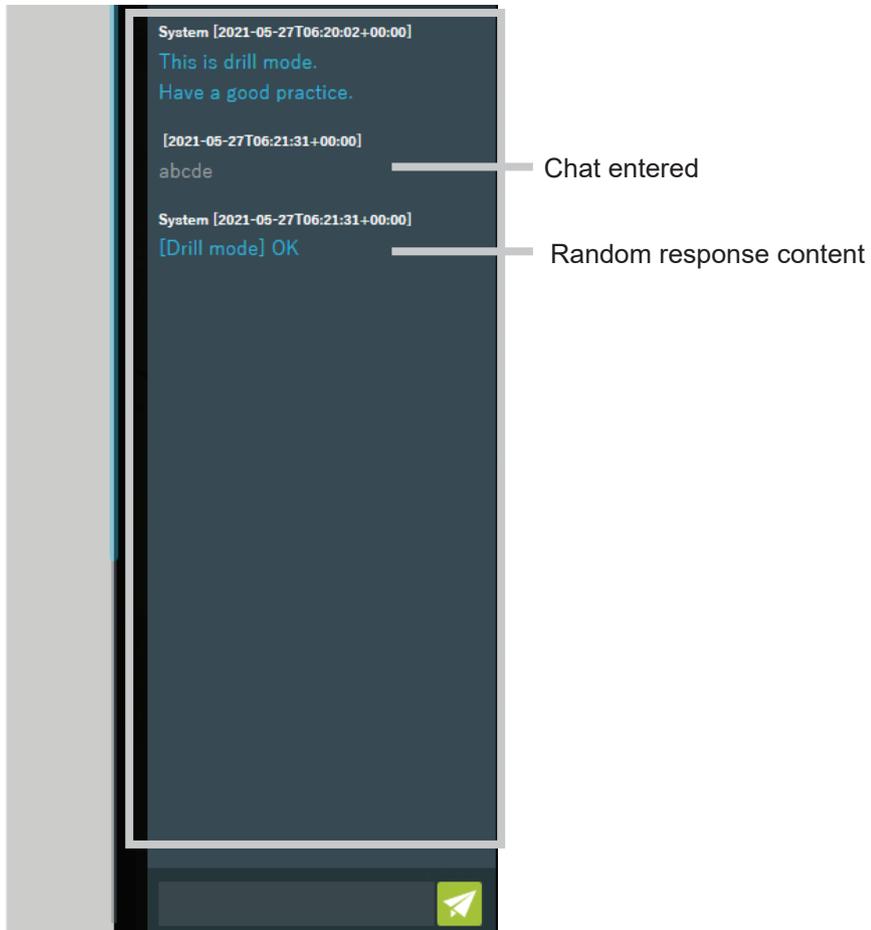
The chat information is shared between ship and shore.



Memo

The NeCST Emergency Drill Function does not connect to the cloud. The response after chat input is random from the system. The response types are as follows.

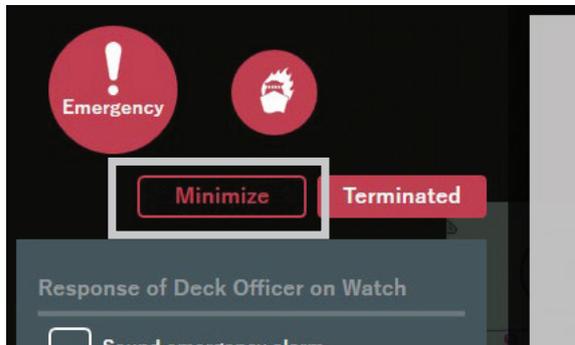
- Yes sir!
- All right.
- OK



3.20.5 Minimizing NeCST Emergency

Operate the NeCST Emergency Drill Function in the same way.

1. In case displaying chat screen of NeCST temporary, tap [Minimize] button.
It is possible to minimize NeCST Emergency screen.



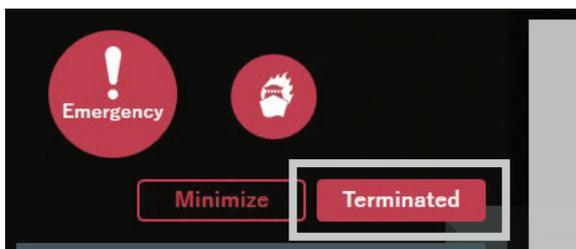
In case back to NeCST Emergency screen in progress, tap the icon upper right.



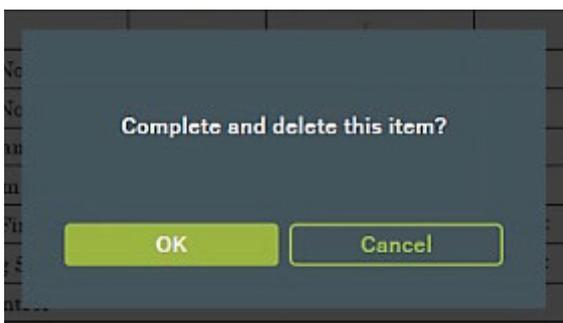
3.20.6 Terminating NeCST Emergency

Operate the NeCST Emergency Drill Function in the same way.

1. In case finishing NeCST Emergency, tap [Terminated] button.



2. The confirmation popup is displayed, tap [OK] button.
In case of not finishing, tap [Cancel button]



3.20.7 NeCST Emergency Drill Function

The NeCST Emergency Drill Function is a function for drilling the NeCST Emergency Function in case of an emergency.

The NeCST Emergency Drill Function does not generate communication to the cloud. Functions equivalent to the NeCST Emergency Function can be used.

The NeCST Emergency Drill Function screen displays a display that can be distinguished from the NeCST Emergency function.

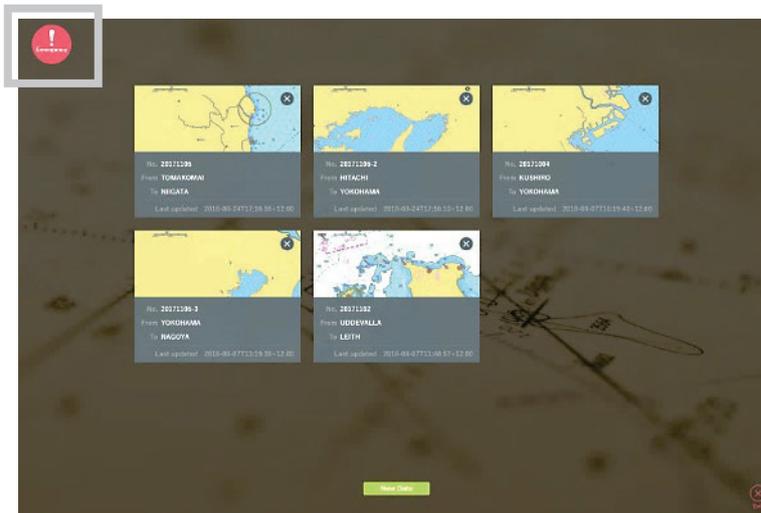
Memo

The NeCST Emergency Drill Function does not communicate to the cloud, but a Smart Ship Viewer contract and a connection environment to the Smart Ship Viewer are required to acquire the NeCST Emergency settings.

If you have any questions about the contract of Smart Ship Viewer, contact our sales department, branch, branch office or sales office.

3.20.7.1 Start NeCST Emergency Drill Function

1. Tap the [Emergency] icon at the top left of the screen.



Memo

The Emergency icon can also be tapped on the chart display screen after selecting each voyage data.

2. On the NeCST Emergency type selection screen, tap the "NeCST Emergency Drill icon".



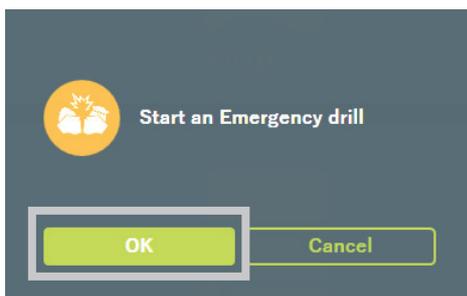
The NeCST Emergency Drill type selection screen is displayed.



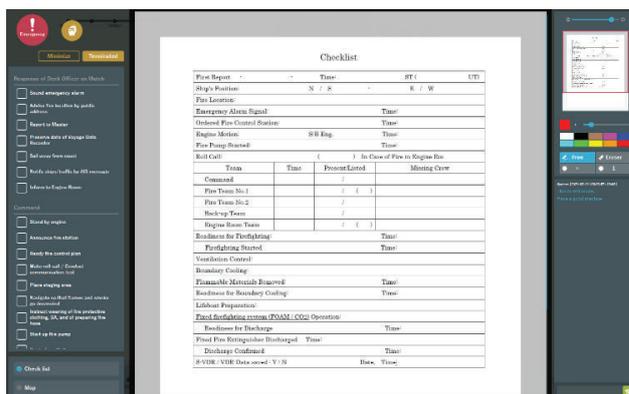
The NeCST Emergency Drill menu has the following 6 items.

- Fire
- MOB
- Ground Stranding
- Collision
- Oil Spill
- Other

Select an item and tap the [OK] button in the confirmation pop-up to start the NeCST Emergency Drill Function.



When you start the NeCST Emergency Drill Function, the screen for each NeCST Emergency Drill Function item is displayed.



Memo

Checklists and images are reference examples.

Checklists and images used on each ship can be specified and changed in the Smart Ship Viewer.

On the screen for each NeCST Emergency Drill Function item, you can do the following:

Function	Reference
Use the checklist	3.20.2 Use the checklist
Write handwriting	3.20.3.1 Write handwriting
Change the handwriting / pin color	3.20.3.2 Change the handwriting / pin color
Change the handwritten line width	3.20.3.3 Change the handwritten line width
Delete handwriting	3.20.3.4 Delete handwriting
Place the pin	3.20.3.5 Place the pin
Delete pin	3.20.3.6 Delete pin
Focus the image	3.20.3.7 Focus the image
Switch images	3.20.3.8 Switch images
Chat	3.20.4 Chat

3.21 Weather Function

Weather and sea phenomenon information is displayed on NeCST.
It is possible to refer to route planning.

Memo
I A Storm Geo contract, POLARIS Forecast contract, or POLARIS Navigation contract is required for Smart Ship Viewer to use the online Weather function.
If any questions about Smart Ship Viewer's contract, contact our sales department, branch, branch office or sales office.

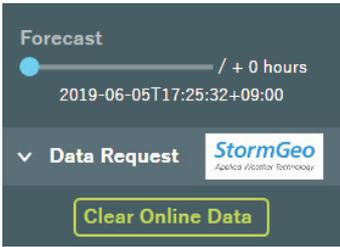
3.21.1 Acquiring Weather Data

The weather that can be displayed depends on the contract. The following is the weather data that can be displayed by NeCST.

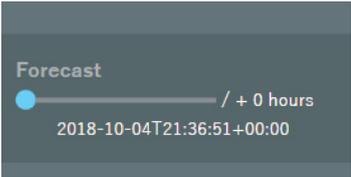
- DOSCA weather
- Storm Geo weather
- JWA weather

Memo
The displaying menu is different by the contract.

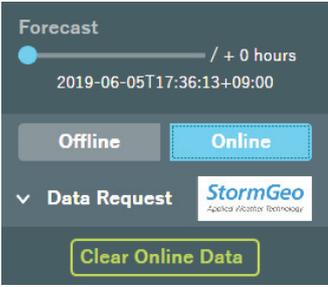
Online: When the Storm Geo contract is enabled in the Smart Ship Viewer



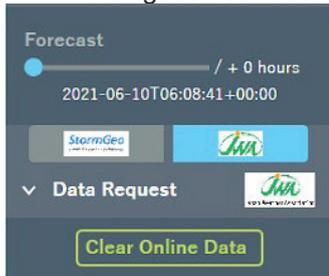
Offline: When the Capt's DOSCA service is enabled



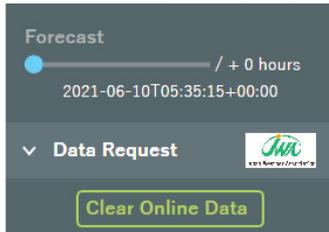
Online/Offline: When the Smart Ship Viewer Storm Geo contract and Capt's DOSCA service are enabled



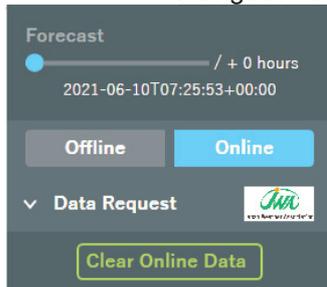
Online: When the Storm Geo contract and POLARIS Forecast contract or POLARIS Navigation contract are enabled in Smart Ship Viewer



Online(JWA) : When the POLARIS Forecast contract or POLARIS Navigation contract is enabled in Smart Ship Viewer



Online/Offline : When the Smart Ship Viewer POLARIS Forecast contract or POLARIS Navigation contract and Capt's DOSCA service are enabled



When change the contract, a reboot is required to apply the setting to the NeCST. After changing the contract, wait for a while and then restart.

3.21.1.1 Acquiring Online Weather Data (StormGeo)

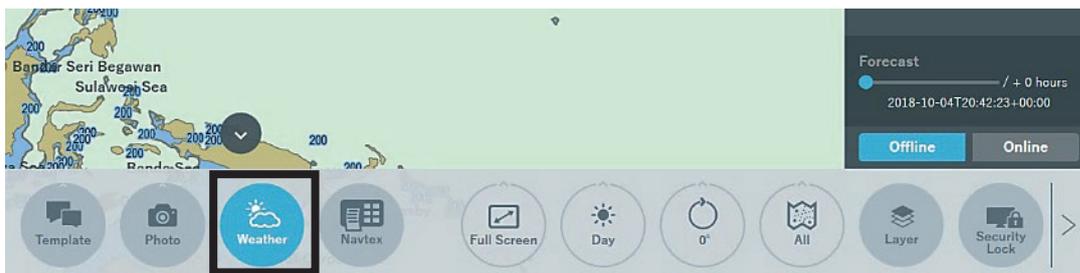
In case using online weather, the latest weather and sea phenomenon is received from Smart Ship Viewer and displayed.

It is possible to receive the information up to 3 days ahead by contract.

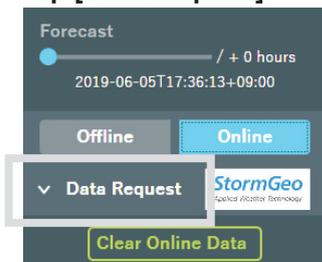
Memo

Communication occurs to receiving weather and sea phenomenon.
Receive the data in a good communication environment.

1. Tap [Weather] icon.

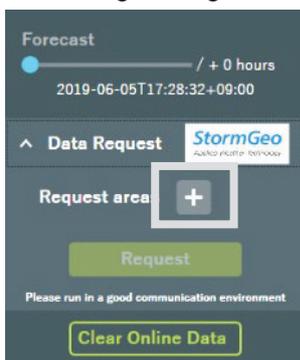


2. Tap [Data Request]



3. Tap [+] button in Request area.

It is changed range selecting mode.



Memo

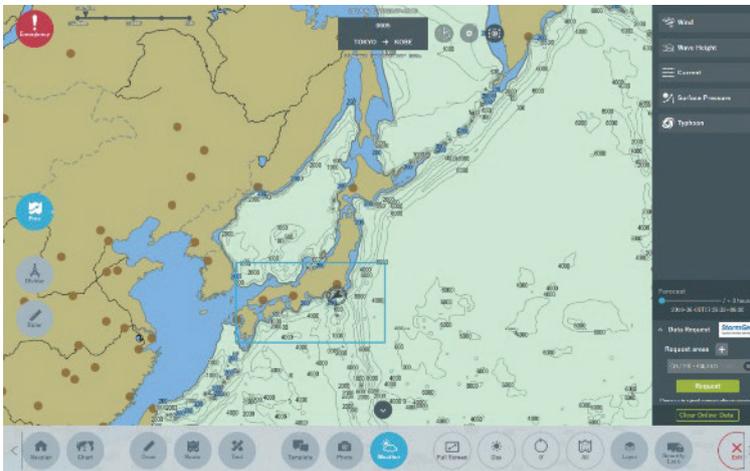
The online weather request method does not differ depending on the following contracts.

- Storm Geo contract
- POLARIS Forecast contract
- POLARIS Navigation contract

4. Specify freehand so as to surround the range which would like to display weather and sea phenomenon information.



A rectangle is automatically generated.

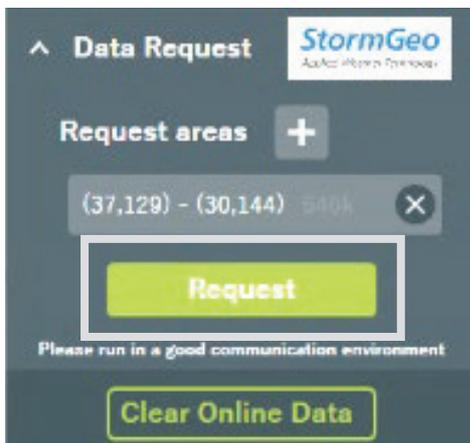


Memo

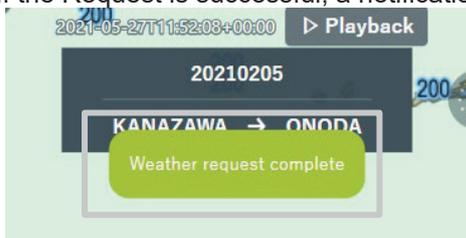
It is also possible to specify an area that straddles 180 degrees east / west longitude.
High latitudes are limited to 75 degrees north / south latitude where the map can be displayed.

5. Tap [Request] button

The Request button is enabled by specifying the range.



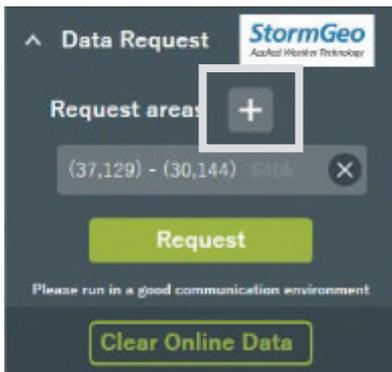
If the Request is successful, a notification will be displayed on the screen.



Weather and sea phenomenon information is displayed on the chart.

Memo

It is possible to select maximum 5 places at once in receiving area. Add it by tapping [+] button.

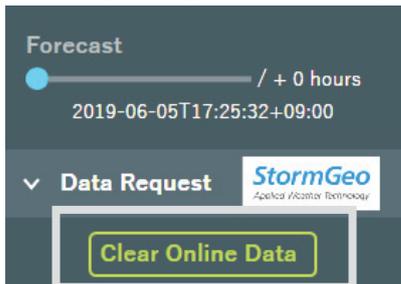


To re-do range designation, tap the [X] icon. The set range is cleared.



Memo

The behavior may become heavy if there are many Online Weather data displayed on the chart. In that case, tap Clear Online Data button and clear Online Weather data. Then request again the area required for navigation.



3.21.1.2 Acquiring Online Weather Data (JWA)

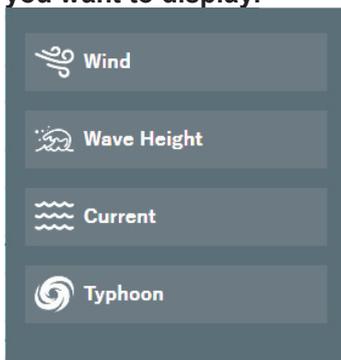
It is a function to display JWA sea weather information on NeCST.

Acquires the weather and sea phenomenon information of JWA and displays it in layers on the chart. This function is a function addition to the Weather function.

For the operating procedure, refer to "3.21.1.1 Acquiring Online Weather Data (StormGeo)".

An optional contract is required to use this function. Contact our sales department, branch, branch office, sales office or agency.

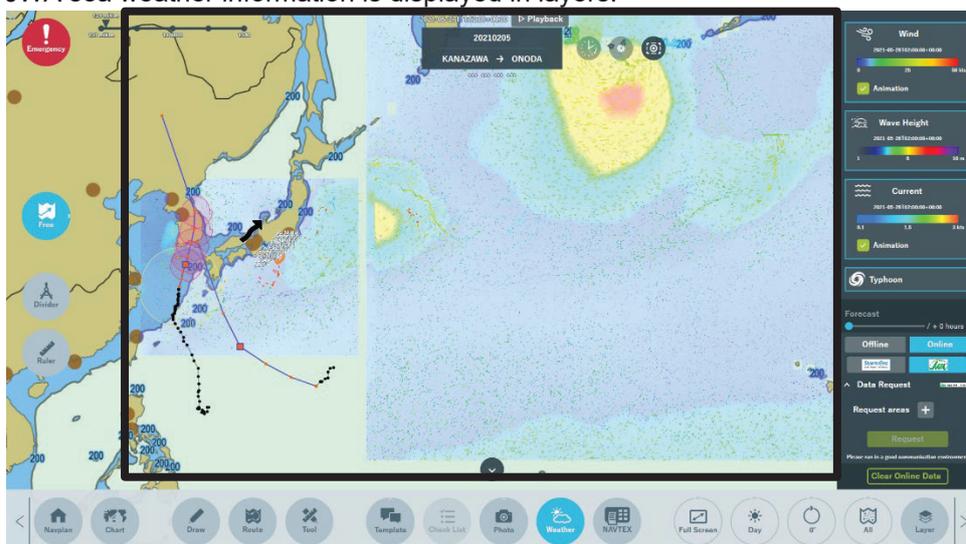
1. After acquiring the JWA sea weather data, tap the weather and sea phenomenon information you want to display.



The following information can be displayed with the JWA sea weather information display function.

- Wind (direction/speed)
- Wave Height
- Current (direction/speed)
- Typhoon

JWA sea weather information is displayed in layers.



3.21.1.3 Acquiring Offline Weather Data

Memo

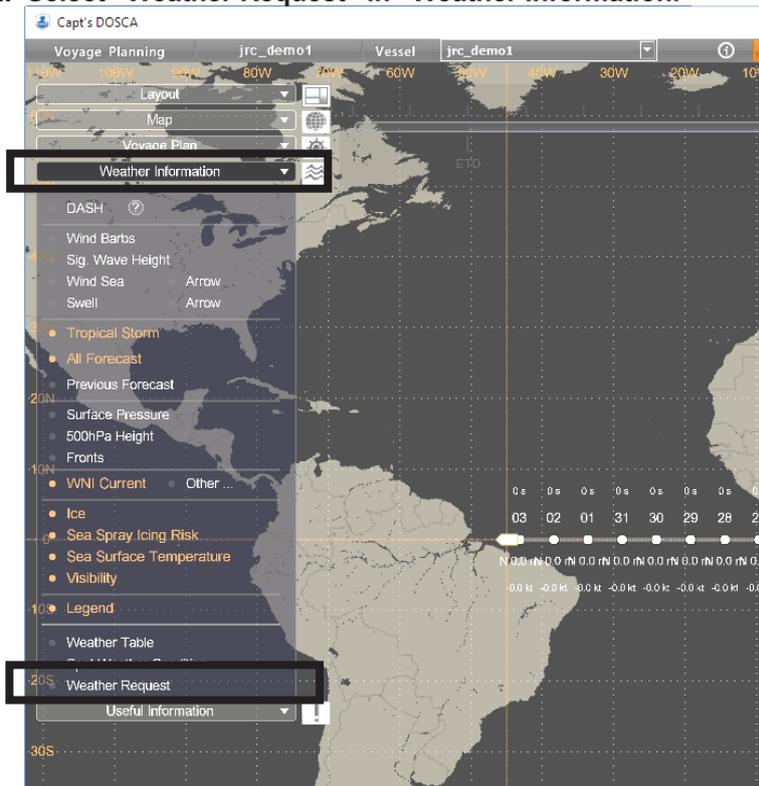
In order to acquire Offline Weather data, Capt's DOSCA system provided by Weathernews Inc is needed to use.

If any questions about contract, contact our sales department, branch, branch office or sales office.

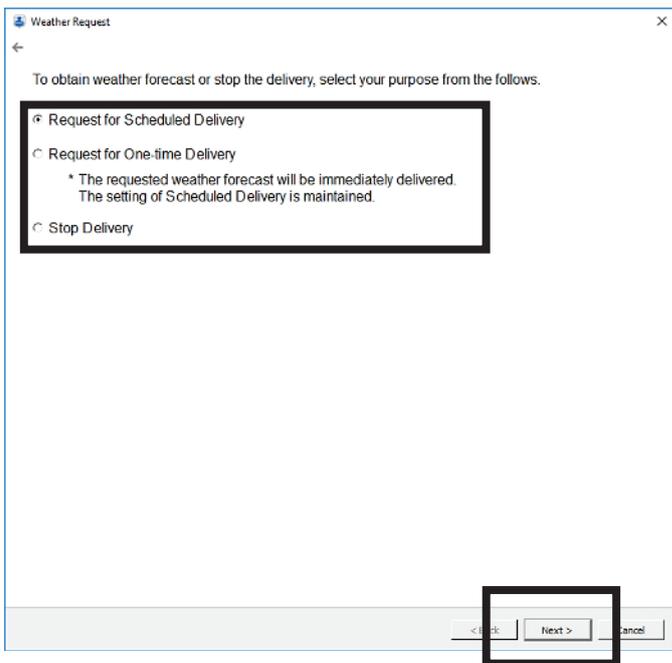
1. Execute Capt's DOSCA app on the PC on which the application is installed.



2. Select "Weather Request" in "Weather Information."

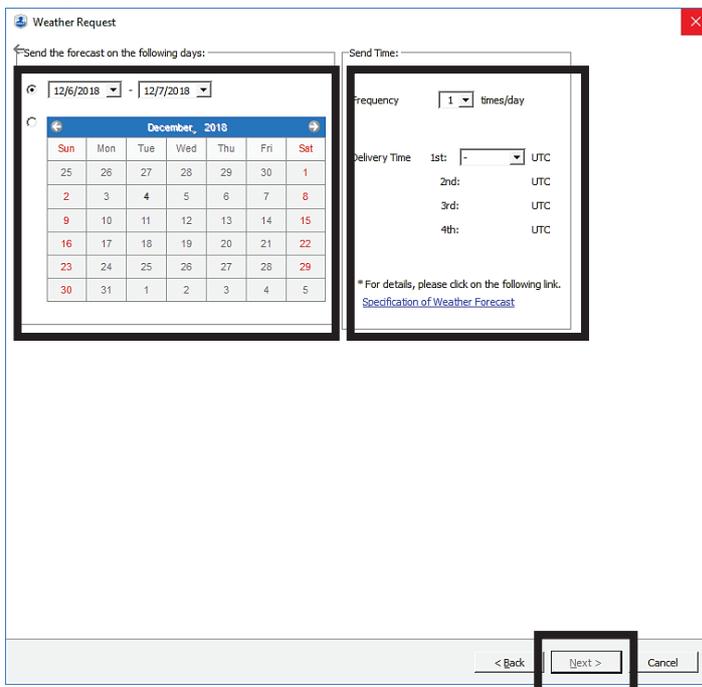


3. Select the item that suits the purpose and click [Next].



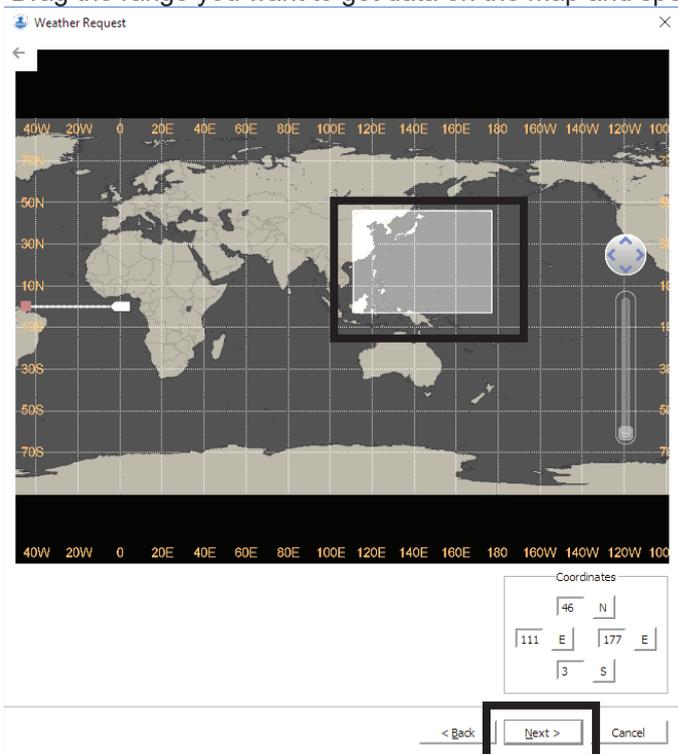
Request for Scheduled Delivery	Specify the date (period), daily frequency, time in advance and request it. Daily weather data will be sent during the specified period.
Request for One-time Delivery	Request one-time data. When Scheduled Delivery is set, it can be acquired without affecting it.
Stop Delivery	Select to cancel the Scheduled Delivery.

4. In case of selecting "Request for Scheduled Delivery", set the date (period), frequency and time, and click "Next".

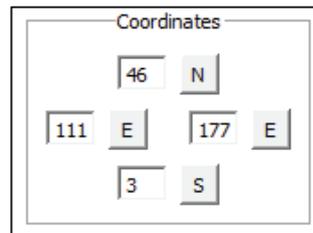


5. Select an area and click [Next].

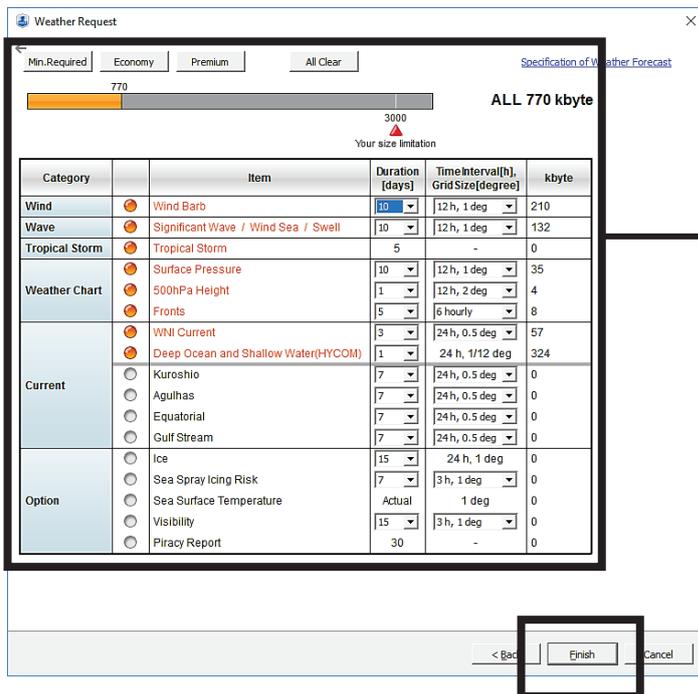
Drag the range you want to get data on the map and specify.



Also, enables to input Lat./Lon. in the Coordinates field



6. Set the required weather and sea phenomenon information and click [Finish].



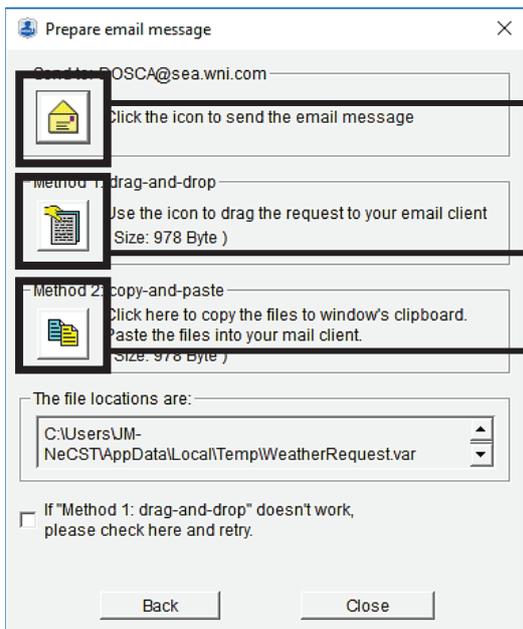
J-Marine NeCST displays the following weather and sea phenomenon information,

- Wind
- Wave
- Tropical Storm
- Surface Pressure
- Fronts
- WNI Current

Memo
 It cannot be requested if the request size exceeds "Your size limitation".
 In addition, if the weather of a large area with a large amount of information is superimposed on NeCST, the operation of NeCST may become slow.

7. Send the request file (WeatherRequest.var) to the following address.

e-mail: DOSCA@sea.wni.com



Start the e-mail software.
In case of not using the default e-mail software, manually start the e-mail software and enter the e-mail address without subject.

Attach the request file by dragging it on the e-mail software.

Copy the request file to the PC's clipboard.

After sending the e-mail, wait for the requested data to be sent.

8. Convert the received data with Capt's DOSCA application.

Drag the var file replied from "DOSCA-DataDelivery@sea.wni.com" onto the Capt's DOSCA shortcut.



Progress status is displayed at the top of the PC screen.



9. When the data conversion is completed, copy the "weather" folder in the following location to the external USB memory etc.

C:\Users\XXXXX\AppData\Local\WEATHERNEWS INC\DOSCA\Data\weather

Enter the user name of the PC installed by Capt's DOSCA application in the XXXXX of above and access the folder.

10. Connect the external memory that saved the data to the display processing unit.

11. Overwrite the "weather" folder in the following location with the "weather" folder saved in external memory.

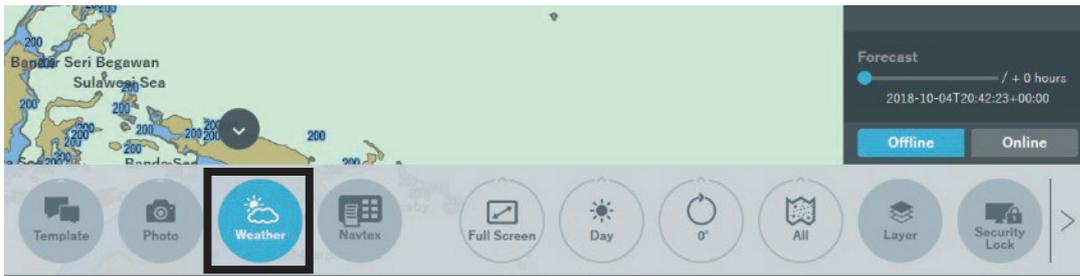
C:\JRC\Weather\DOSCA\weather

Note

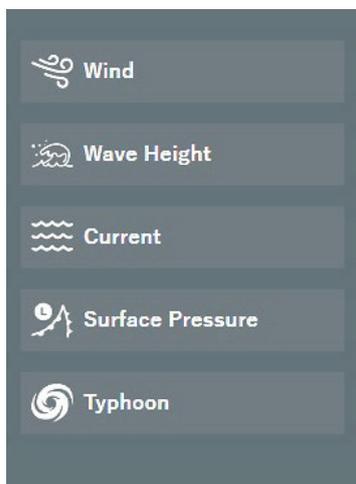
- The location of the weather folder may have changed.
Overwrite to the location changed at the time of equipment setting.
- After overwriting the weather folder, remove the external memory.

3.21.2 Displaying Weather Information

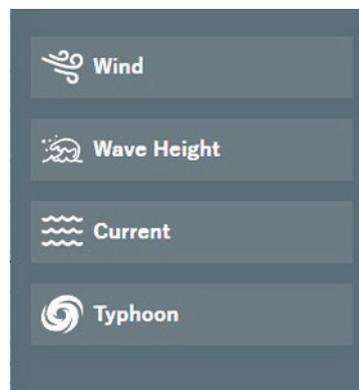
1. Tap [Weather] icon.



2. Tap the any weather and sea phenomenon information.



DOSCA / StormGeo weather



JWA sea weather

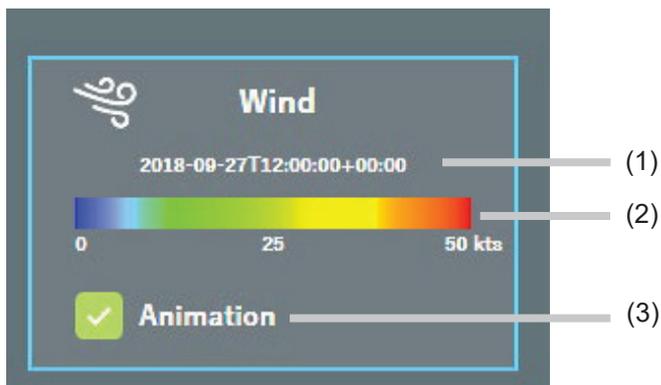
It is possible to display the following information in Weather function.

- Wind (direction/speed)
- Wave Height
- Current (direction/speed)
- Surface Pressure (isobar/front)
- Typhoon

Memo

It is impossible to display front information in Online Weather (StormGeo).
It is impossible to display Surface Pressure information in Online Weather (JWA).

This is the explanation about Weather data displaying.



- (1) The Estimated date and time about the weather and sea phenomenon are displayed. If there is no displaying data, it is not displayed. And If the displaying data is expired, it is displayed “-----T--:--:--”
- (2) The example of data color displaying on the chart is indicated. It is displayed in case of Wind, Wave Height and Current.
- (3) In Wind and Current, it changes whether displaying the animation or not.
 Check ON: Displaying animation
 Check OFF: Not Displaying animation

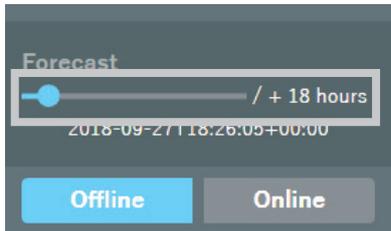
Note
 When displaying Wind and Current with Animation ON, it may be difficult to distinguish the display between Wind and Current.
 If would like to be confirming Wind and Current at the same time, it is recommended that either or both be set to Animation OFF.

Memo
 When tapping the present and estimated point of typhoon, it is possible to confirm the detail information of the typhoon.

3.21.3 Specifying Forecast Date

It is possible to display the forecast date and time of the displaying weather.

1. Operate the slider of Forecast (0 – +240hours)



The weather and sea phenomenon information is uploaded.

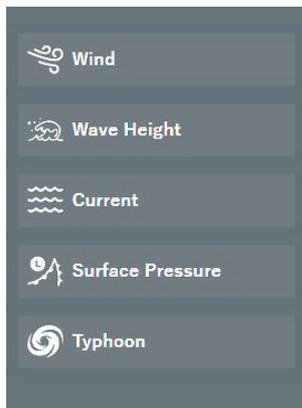
Memo

In online weather, it is possible to display the weather and sea phenomenon for 3 days since receiving data.

3.21.4 Displaying Weather Information According to ETA

Weather and sea phenomenon according to ETA (Estimated Time of Arrival) which was set WPT at making route is displayed.

1. Tap [Weather] icon.
2. Tap the weather and sea phenomenon which would like to display.

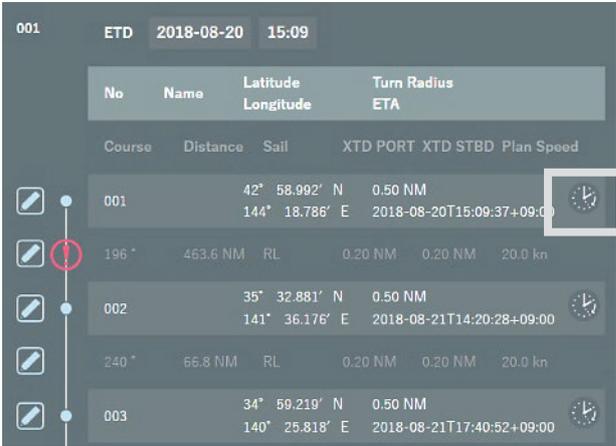


3. Tap [Route] icon and make the route.

Refer to 3.5 Route Planning.

4. Tap the clock icon in each WPT of the route.

It is updated to the weather and sea phenomenon forecast display of the ETA date and time set in WPT.



Memo
In case that ETA is past time, weather and sea phenomenon is not displayed.

3.22 NAVTEX Function

Memo

This function is able to be used when connecting JRC MFD JAN-7201/9201 which is received NAVTEX data.

In the following cases, you cannot receive NAVTEX Message.

- JAN-7201/9201 has been turned off.
- NeCST and JAN-7201/9201 are not linked.
- NAVTEX Message in JAN-7201 / 9201 has not been updated.
- The package version of the NeCST app in older than 1.2.2.16.

1. Tap [NAVTEX] icon



NAVTEX message is displayed.

Date Received	Station	Message
2016-02-14T16:24:02+12:00	I	A
2016-02-14T16:24:17+12:00	I	A
2016-02-14T16:45:58+12:00	V	A
2016-02-14T16:24:25+12:00	K	A

2. Tap detail displaying button

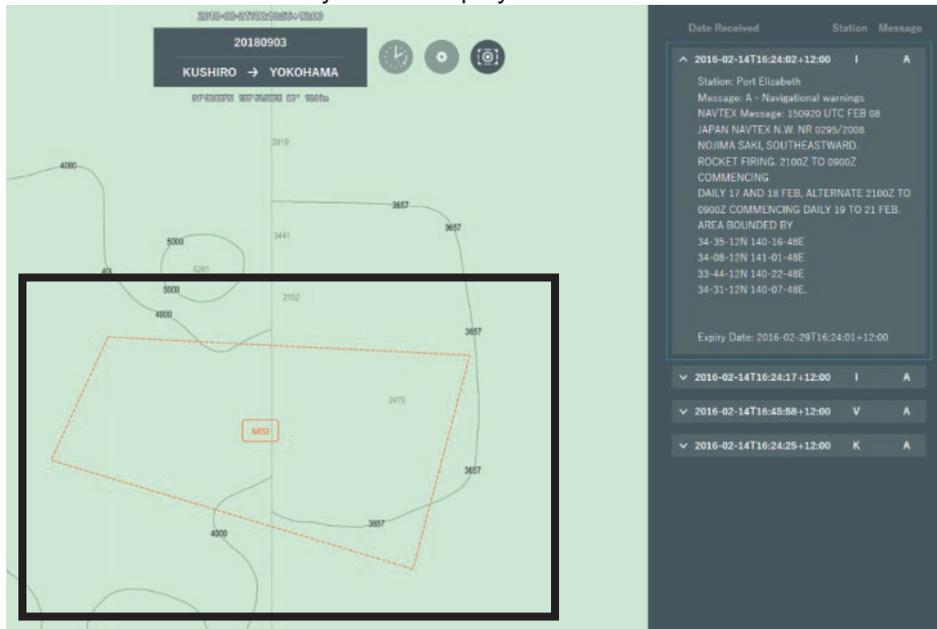
The detail of message is able to be confirmed.

Date Received	Station	Message
2016-02-14T16:24:02+12:00	I	A
2016-02-14T16:24:17+12:00	I	A
2016-02-14T16:45:58+12:00	V	A
2016-02-14T16:24:25+12:00	K	A

Date Received	Station	Message
2016-02-14T16:24:02+12:00	I	A
Station: Port Elizabeth Message: A - Navigational warnings NAVTEX Message: 150920 UTC FEB 08 JAPAN NAVTEX N.W. NR 0295/2008 NOJIMA SAKI, SOUTHEASTWARD. ROCKET FIRING. 2100Z TO 0900Z COMMENCING DAILY 17 AND 18 FEB, ALTERNATE 2100Z TO 0900Z COMMENCING DAILY 19 TO 21 FEB. AREA BOUNDED BY 34-35-12N 140-16-48E 34-08-12N 141-01-48E 33-44-12N 140-22-48E 34-31-12N 140-07-48E.		
Expiry Date: 2016-02-29T16:24:01+12:00		
2016-02-14T16:24:17+12:00	I	A
2016-02-14T16:45:58+12:00	V	A
2016-02-14T16:24:25+12:00	K	A

Memo

After selecting the message which included position information,
 The concerned NAVTEX symbol is displayed in the center of chart screen.



Memo

It is possible to change Displaying / Not Displaying by Message and Station.

If would like to change, tap [Filter] button in NAVTEX message list screen



The message is displayed after checking on.

The message is not displayed after checking off.



After finishing setting, tap [Close] button.
It is backed to NAVTEX message screen.

3.23 Playback Function

The Playback Function plays back the past voyage status.
Playback data can be saved on the ship.
Saved Playback data can be uploaded to Smart Ship Viewer.
It is also possible to play the Playback data distributed from the Smart Ship Viewer.

Memo
To use the Playback Function, it is necessary to equip the ship with a webcam and PoE HUB and make an optional contract. Contact our sales department, branch, branch office, sales office or agency.

3.23.1 Create Playback Data

NeCST can store 50 playback data.
NeCST can store Playback data for any period of time.

- 1. Tap the [Playback] button.



Memo
If the Playback data name is displayed, new Playback data cannot be created.

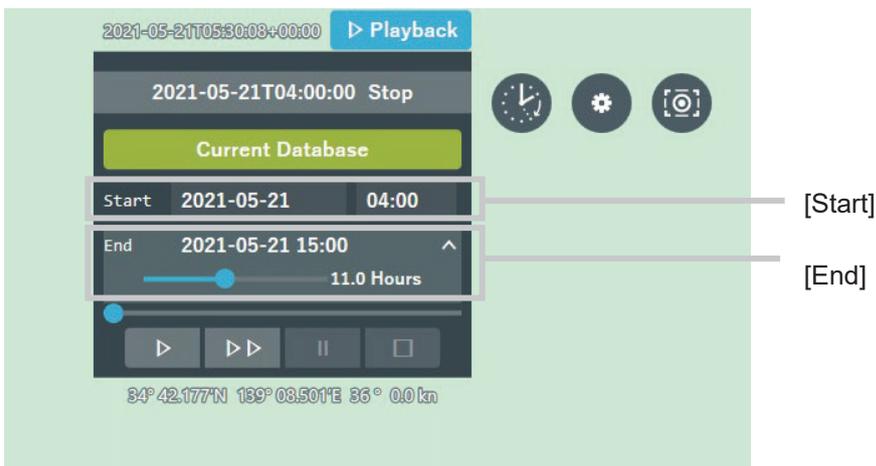
Select Current Database and press the Close button.

If the Current Database is displayed, you can create new Playback data.

2. Set the start date and time with [Start].

3. Operate the [End] slide bar to set the end date and time.

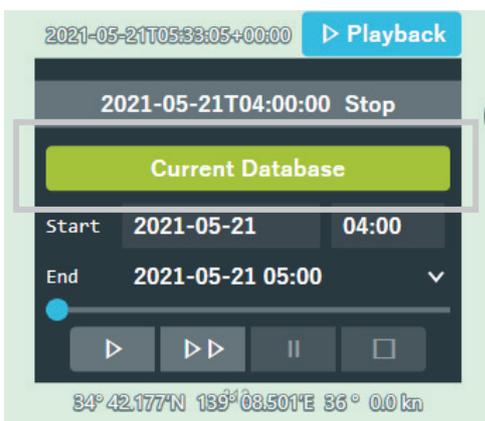
The end time can be set arbitrarily from 1 to 24 hours after the start time.



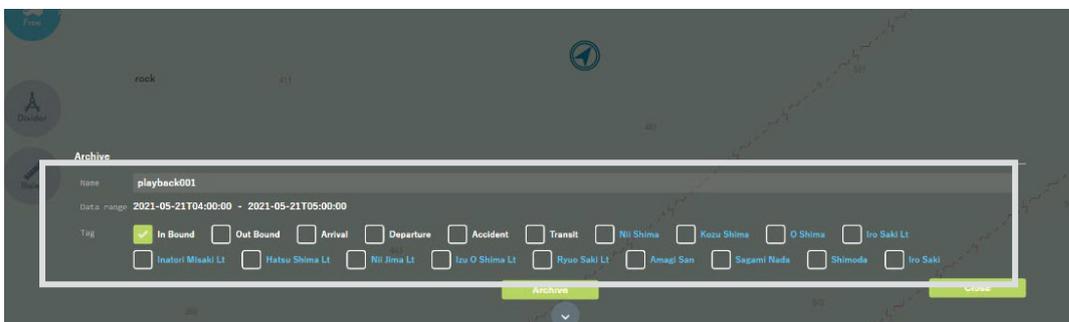
Memo

If there is no voyage data within the selected period, you will not be able to tap the play button.

4. Tap [Current Data base].



5. Enter the Playback data name and set the Tag.



View larger image

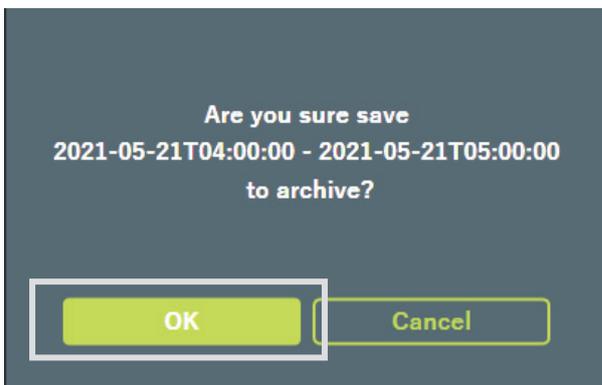
The screenshot shows the 'Archive' screen with the following fields and callouts:

- Name:** playback001 (Callout: Playback data name)
- Date Range:** 2021-05-21T04:00:00 - 2021-05-21T05:00:00 (Callout: Data period)
- Tag:** In Bound, Out Bound, Arrival, Departure, Accident, Transit (Callout: Tag setting (Navigation status) Add the following tag information. • In Bound • Out Bound • Arrival • Departure • Accident • Transit)
- Tag:** Inatori Misaki Lt, Hatsu Shima Lt, Nii Jima Lt, Izu O Shima Lt, Ryuo Saki Lt (Callout: Tag setting(Nautical chart information) Set chart information as tag information. Chart information is obtained from the object information of the chart that existed on the track and displayed.)
- Archive:** A green button at the bottom right.

6. Tap [archive]

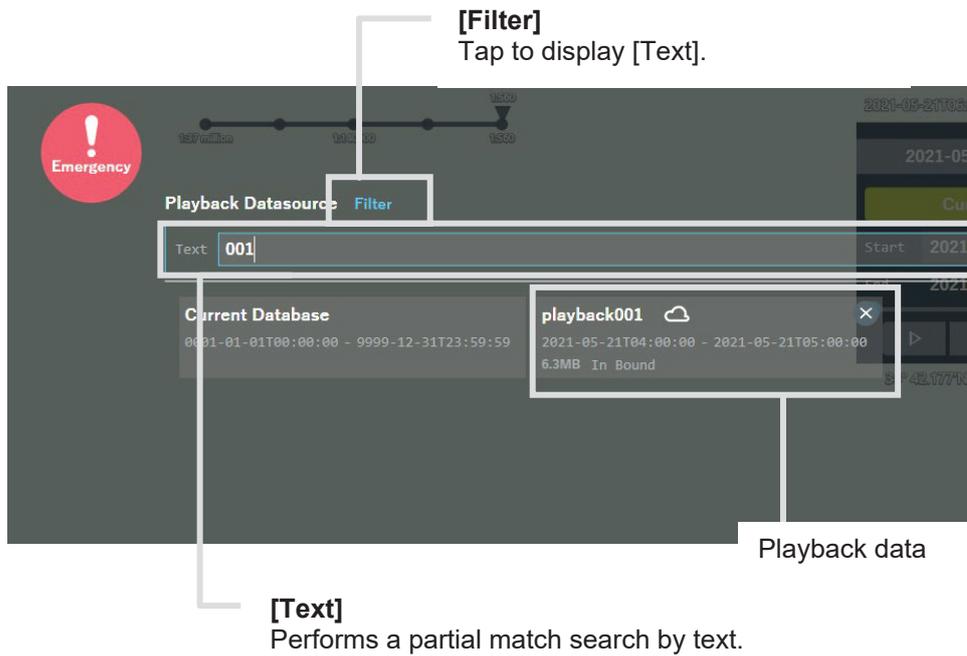


7. Tap [OK] to save the Playback data.



Memo

You can filter the saved the Playback data by tapping [Filter].
Enter the character string you want to filter in [Text].



Memo

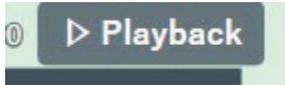
Describes the status of the Playback data.



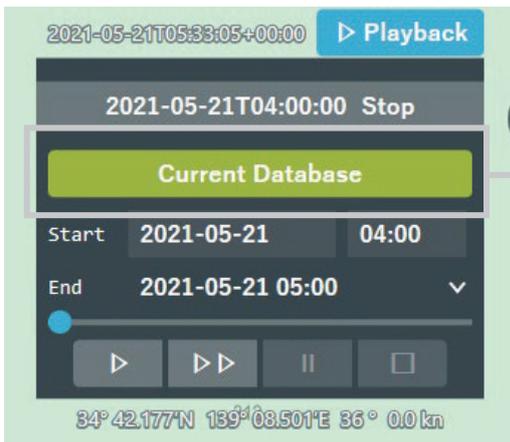
3.23.2 Play the Playback Data Recorded in NeCST

Playback data recorded in NeCST can be played back.

1. Tap the [Playback] button.

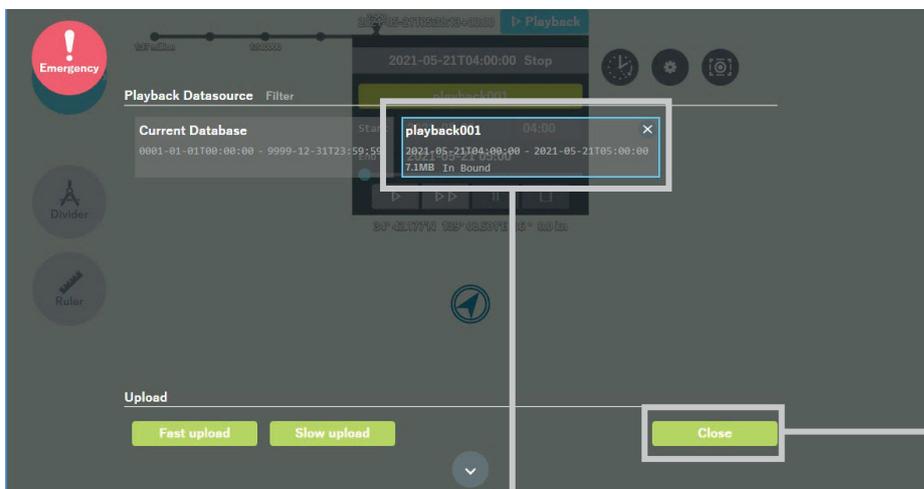


2. Tap [Current Data base] or [Playback data name].



[Current Data base] or
[Playback data name]

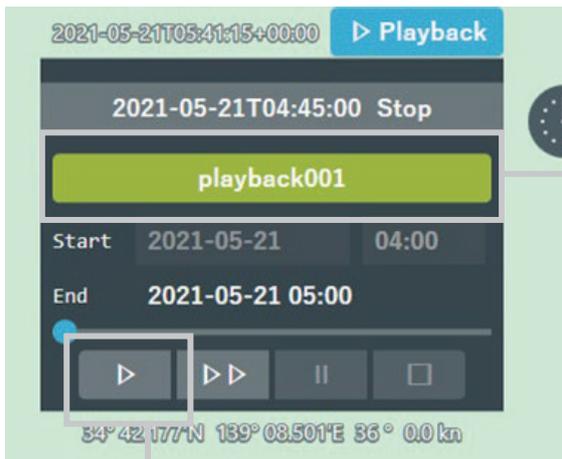
3. After selecting the [Playback data name] you want to play, tap the [Close] button.



[Close] button

Playback data

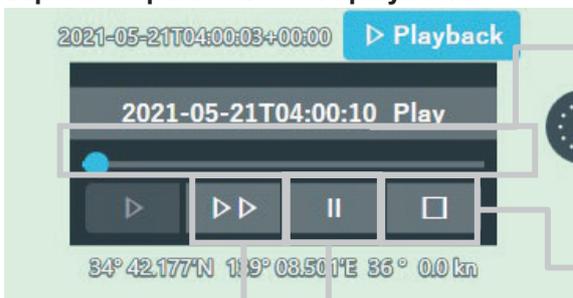
4. Confirm that the [Playback data name] you want to play is displayed and tap the play button.



Playback data name you want to play

Playback button

5. Playback of the selected Playback data will start.
Tap the stop button to end playback.



Slide bar

Tap before the playback position to advance the playback time by 10 seconds.
Tap behind the playback position to return the playback time by 10 seconds.

Stop button

Pause button

Playback speed change button

You can change the playback speed to x2, x4, x8, x16, x32, x64.

3.23.3 Display Conning Screen

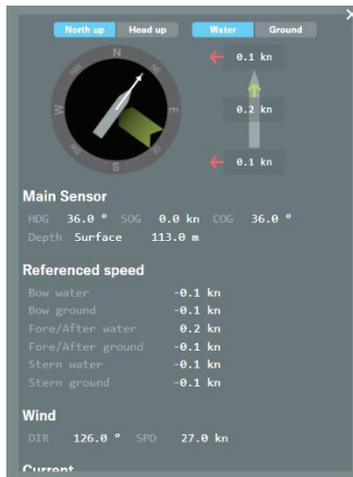
The Conning screen during playback can display Conning information for the playback time.

Note

In the case of the new Conning screen, the Conning of the corresponding time can be displayed during Playback.

In the case of the old Conning screen, real-time Conning will continue to be displayed even during Playback.

If you want to change it, contact our sales department, branch, branch office, sales office or agency.

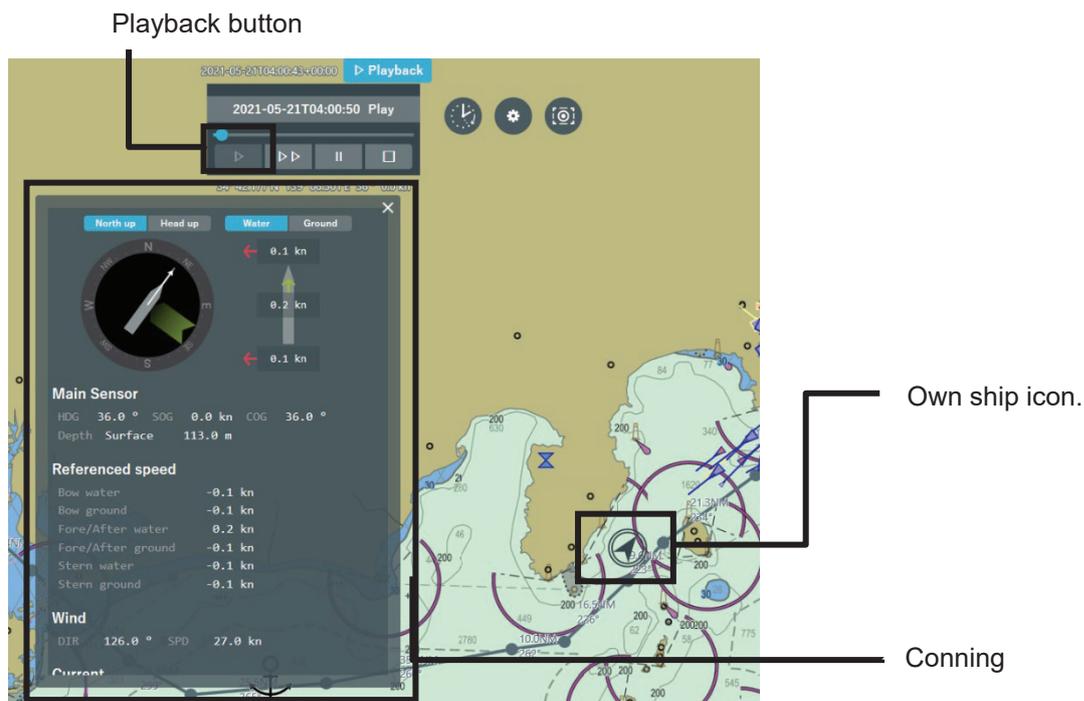


The new Conning screen



The old Conning screen

1. Tap the play button to play Playback.
2. During Playback, tap the own ship icon to display Conning.
Conning information at the time of Playback is displayed in Conning.



3. During Playback, tap the gear icon to display the settings.



4. Tap [Conning]

Set the items to be displayed in Conning.
Check the items you want to display.



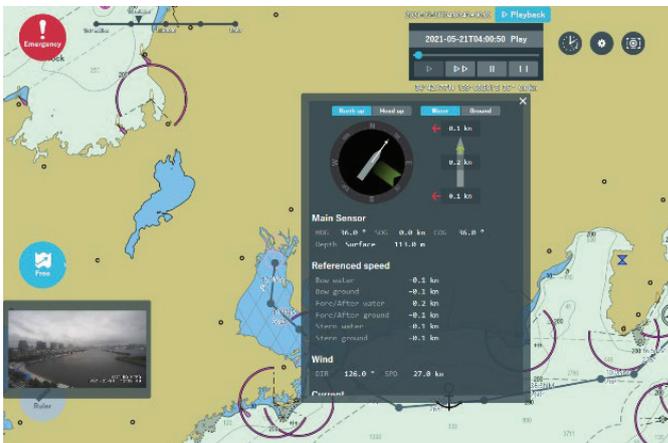
Memo

The settings on the Conning tab are reflected only on the new Conning screen.

5. Tap [OK] to save your settings.



The settings are reflected in Conning.

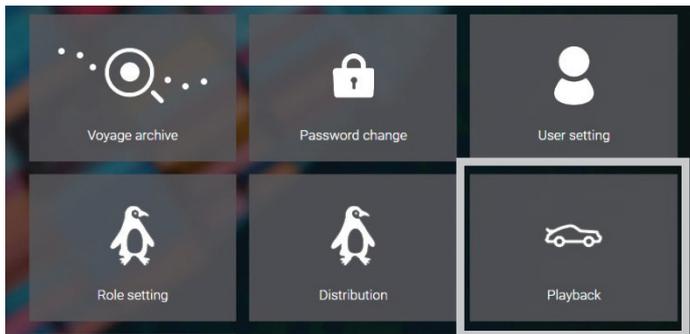


3.23.4 Play the Distributed the Playback Data

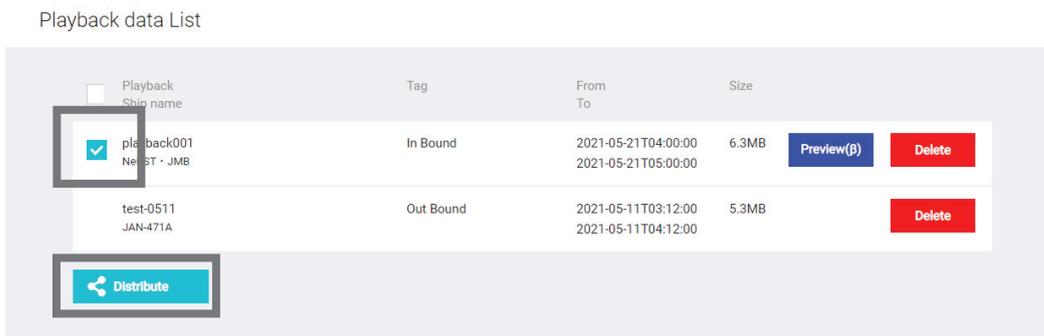
You can play the Playback data distributed from the Smart Ship Viewer.
The playback procedure is the same as "3.23.2 Play the Playback Data Recorded in NeCST".

1. Log in to Smart Ship Viewer and distribute the Playback data to be imported.

- Playback data distribution method
 - Access the following site on a PC that can connect to the Internet.
<https://ssv.jmarinecloud.com/>
 - After logging in, select Playback.



- Select the voyage data to be used and click [Distribute].



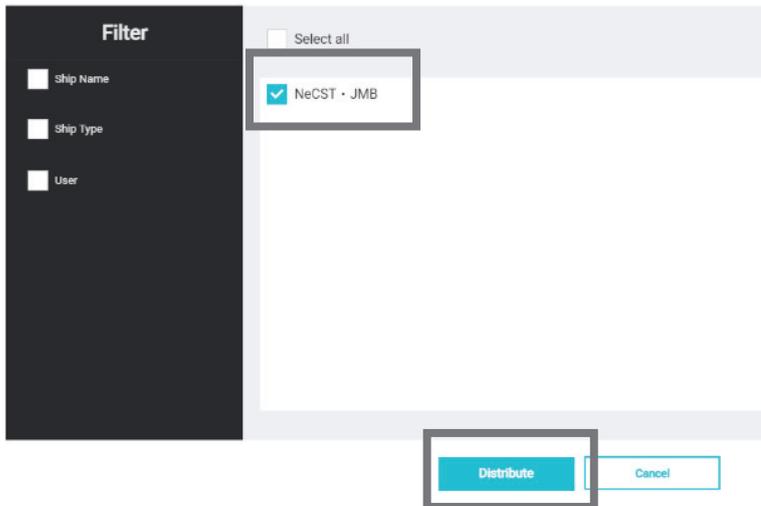
Memo

To use the Playback Function, it is necessary to equip the ship with a webcam and PoE HUB and make an optional contract. Contact our sales department, branch, branch office, sales office or agency.

If "Publish playback data to ships" is not checked in the Role setting assigned by Smart Ship Viewer, distribution will not be possible.

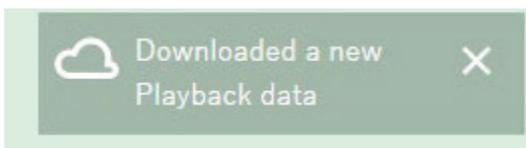
- (4) Select the managed ship you want to distribute and click [Distribute] to start distribution to NeCST.

Select ships to distribute playback

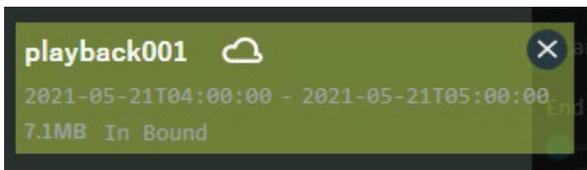


2. Start NeCST.

When you receive Playback data from SmartShipViewer, you will see a "Downloaded a new Playback data" notification.



A Playback with a light green background is added to the NeCST Playback list.

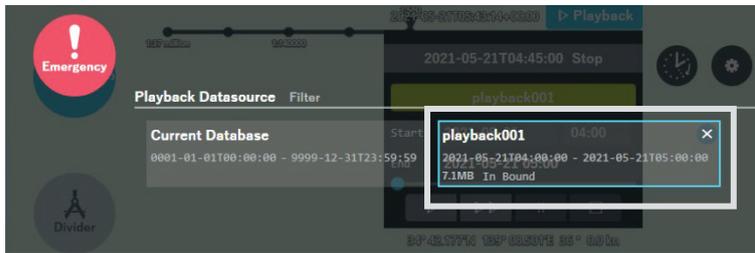


The playback procedure is the same as "3.23.2 Play the Playback Data Recorded in NeCST".

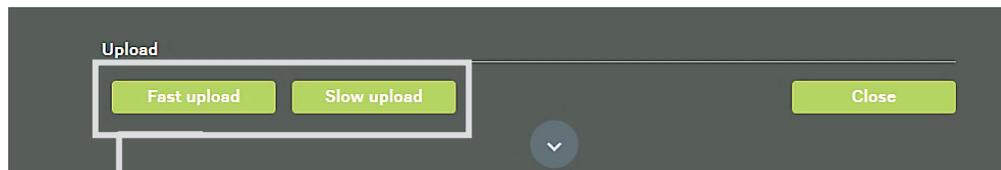
3.23.5 Data Upload Function

You can manually upload the saved Playback data to Smart Ship Viewer.

1. Select the Playback data you want to upload.



2. Select the upload method.



[Fast upload]
Upload playback data in bulk.

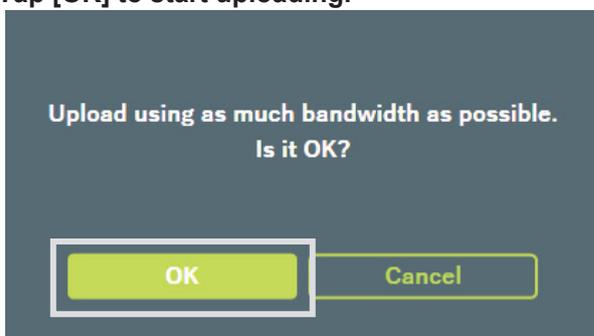
[Slow upload]
Upload the playback data in pieces.

Memo

Files larger than 50MB cannot be fast uploaded.
Files larger than 500MB cannot be slow uploaded.

In addition, the estimated upload time is displayed in Slow upload, but it is the estimated time when there is no problem with the satellite communication. Upload with sufficient margin.

3. Tap [OK] to start uploading.

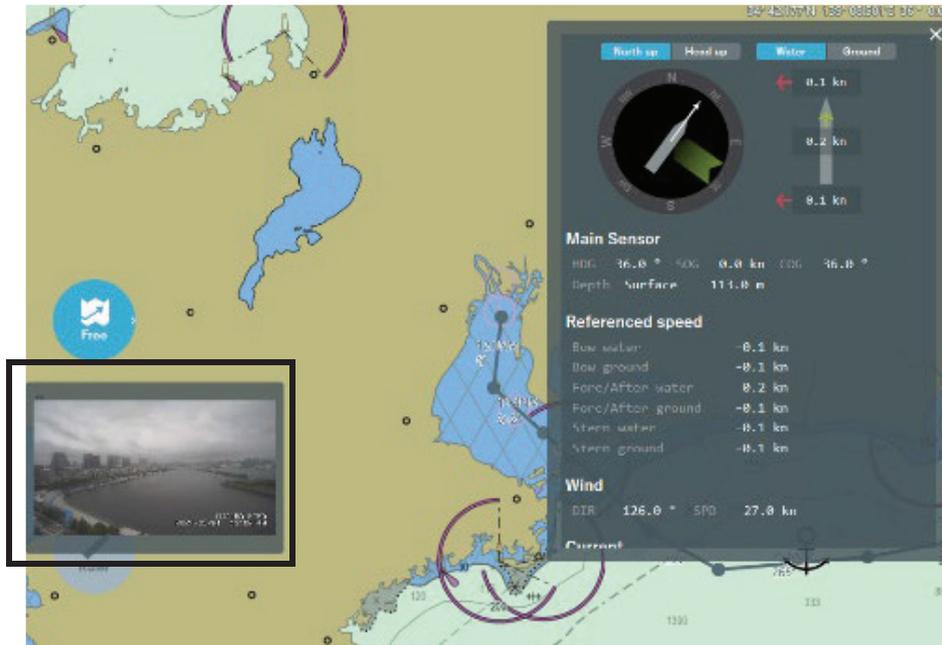


Memo

The Playback data requested to be uploaded from SmartShipViewer will be automatically uploaded to J-Marine Could.

3.23.6 Camera Linkage Function

By connecting NeCST to the camera, the images taken by the camera will be displayed during playback.

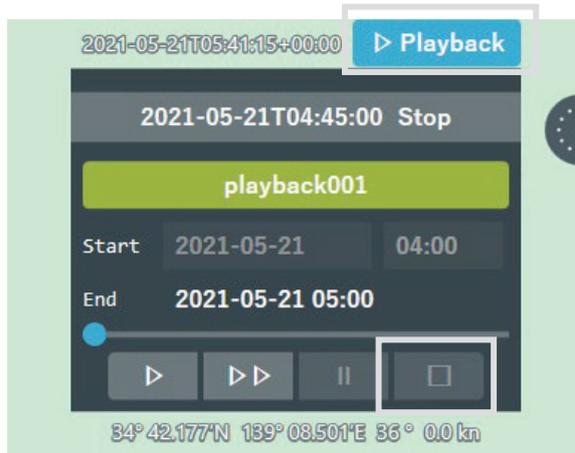


Memo

The image will be resized and cropped based on the settings.
If you wish to change the settings of the camera linkage function, contact our sales department, branch, branch office or sales office.

3.23.7 End Playback

1. Tap the [Playback] button to exit Playback.



3.24 Updating Software

3.24.1 Performing Software Update

 CAUTION	
	Don't turn off the power when updating software. If the power supply is interrupted during the update, the update cannot be executed normally.
	When starting software update, the NeCST application is automatically terminated. NeCST application cannot be used until update is completed. Avoid updating while navigating, update with a margin. Also, if the EncManager application and Setting tool application are running, update processing may not be completed. Close those applications and then run the update.

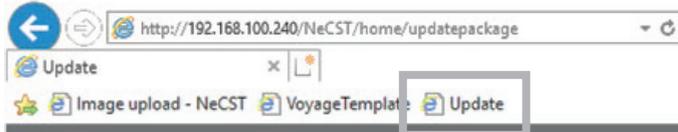
1. Insert the USB memory which included in update data into display processing unit PC.

2. Start Internet Explorer in the display processing unit and tap the "Update" icon.

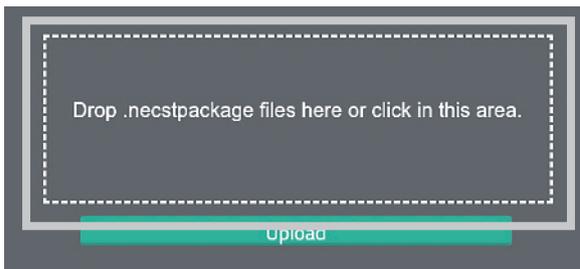
Access to "http://192.168.XXX.XXX/NeCST/home/updatepackage".

In "192.168.XXX.XXX", the IP address of the data processing unit is set.

The default IP of data processing unit is 192.168.100.240



3. Tap the following area and select the necst.necstpackage file.



4. Tap [Upload] button.

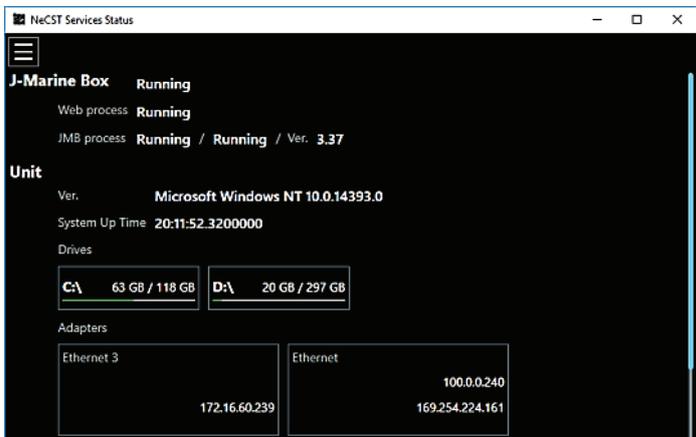


When the upload is completed, the display returns to the original display. "Drop .necstpackage files here or click in this area."

5. Run the Watcher shortcut in desktop of display processing unit.



Watcher application is started.



Memo

In case of ready to update, the notification is displayed in the upper right corner of the NeCST screen.

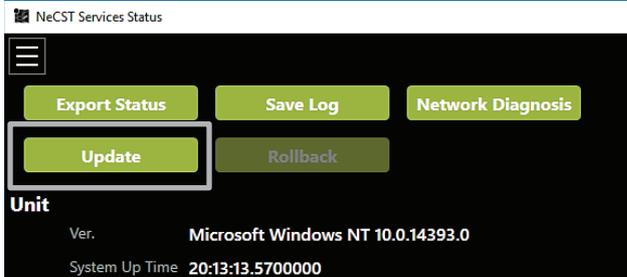


In case of not executing Watcher application, Watcher allocation is started when tapping notification.

6. Tap the menu icon in the upper left.



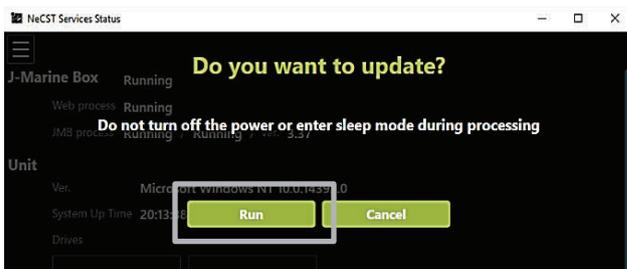
7. Tap [Update] button.



8. The confirmation pop-up is displayed, if not problem, tap [Run] button.

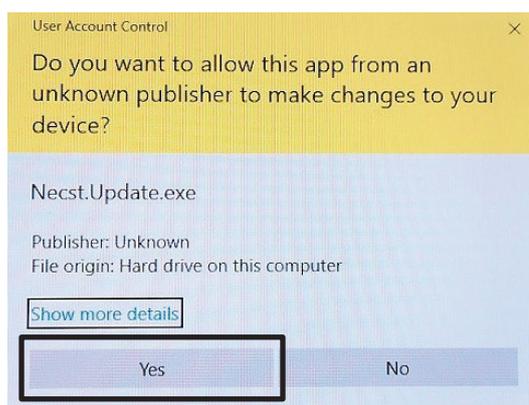
Close applications other than Watcher and NeCST before updating.

When starting update, Watcher application and NeCST application is finished automatically.

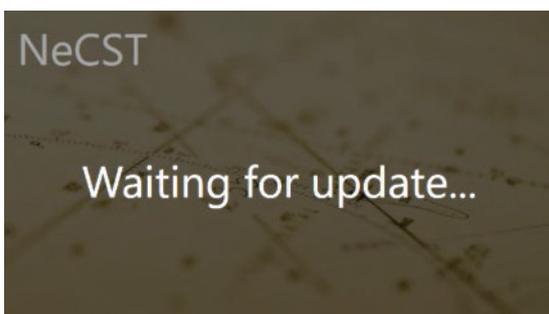


Memo

If the following screen is displayed, tap the Yes button.



The following screen is displayed in updating.



- 9. After finishing update, NeCST application and Watcher application is started automatically.**
Confirm that the package version is uploaded in Watcher application. Confirm behavior.

Note

Do not power off, until the update is finished.

After started Watcher and NeCST application automatically, it takes a few minutes to use again by ready to be preparing data processing.

Don't power off until confirming that NeCST and Watcher application is able to be used.

When power off in updating, it may occur that application does not start.

If the NeCST application or the Watcher application does not start up automatically, the update may be unsuccessful.

Confirm the package version by starting Watcher application manually.

Memo

If the version is not updated to the latest, update again.

If the Update button of the Watcher application is not valid even though the update is not completed, update it again after rolling back.

For details on how to roll back, see 3.24.2 Performing Software Rollback.

If the Watcher application stops functioning properly or if the update fails many times, contact the service request department.

3.24.2 Performing Software Rollback

CAUTION



Don't turn off the power when roll-backing software.
If the power supply is interrupted during the roll-backing, the roll-backing cannot be executed normally.



When starting software roll-backing, the NeCST application is automatically terminated.

NeCST application cannot be used until roll-backing is completed.
Avoid roll-backing while navigating, roll-back with a margin.

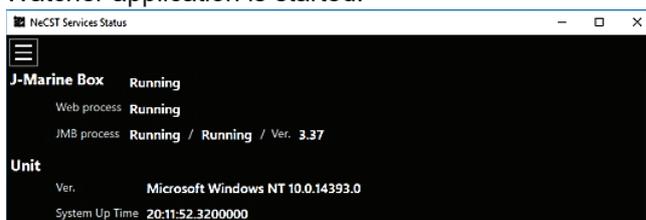
Also, if the EncManager application and Setting tool application are running, rollback processing may not be completed. Close those applications and then run the rollback.

It is possible to revert to the software version before the update, such as when the update finishes halfway or when the operation is not normal after the update.

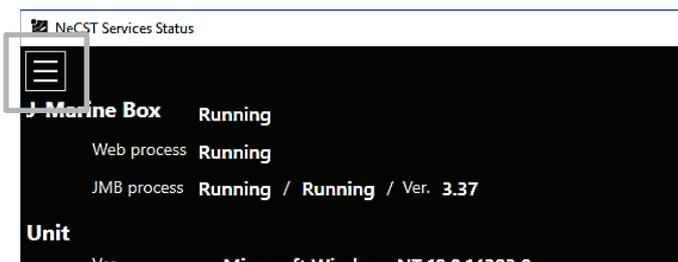
1. Run the Watcher shortcut in desktop of display processing unit.



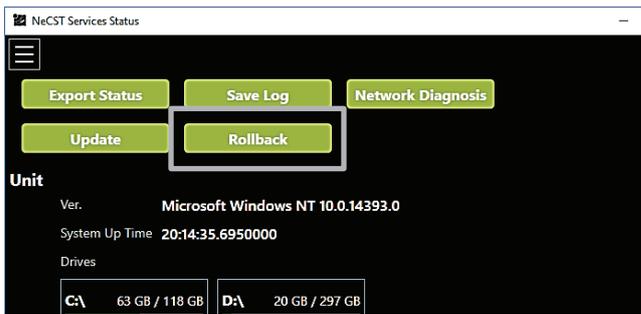
Watcher application is started.



2. Tap the menu icon in the upper left.

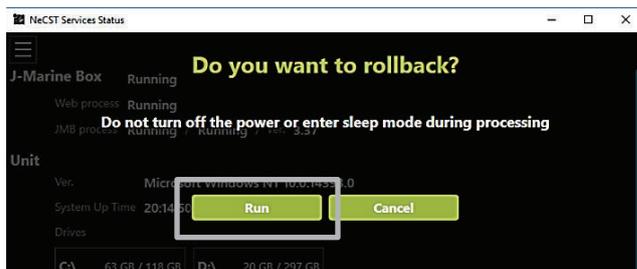


3. Tap [Rollback] button



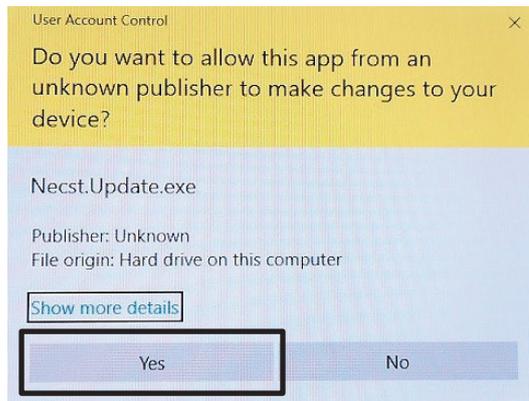
4. The confirmation pop-up is displayed, if not problem, tap [Run] button

When starting rollback, Watcher application and NeCST application is finished automatically.

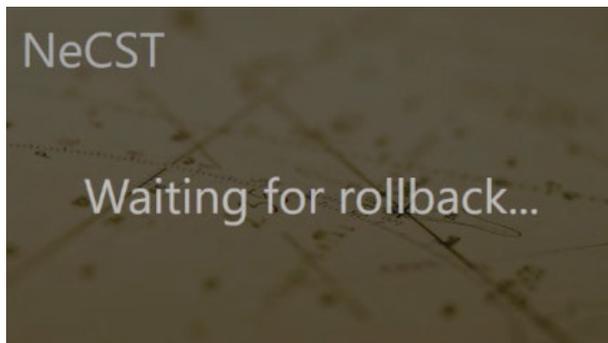


Memo

If the following screen is displayed, tap the Yes button.



The following screen is displayed in rollback.



5. After finishing rollback, NeCST application and Watcher application is started automatically.

Confirm that the package version is uploaded in Watcher application.
Confirm behavior.

Note

Do not power off, until the rollback is finished.

After started Watcher and NeCST application automatically, it takes a few minutes to use again by ready to be preparing data processing.

Don't power off until confirming that NeCST and Watcher application is able to be used.

When power off in rollback, it may occur that application does not start.

If the NeCST application or the Watcher application does not start up automatically, the rollback may be unsuccessful.

Confirm the package version by starting Watcher application manually.

Memo

Check the version and repeat the update or rollback as necessary.

If the Watcher application stops functioning properly or if the update fails many times, contact the service request department.

Memo

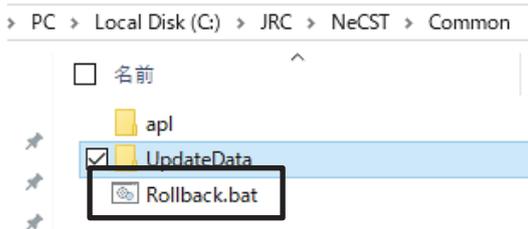
[The procedure of manual roll-back]

Execute both Display Processing Unit and Data Processing Unit.

1. Open following folder.

C:\JRC\NeCST\Common

2. Execute of managing Rollback.bat.



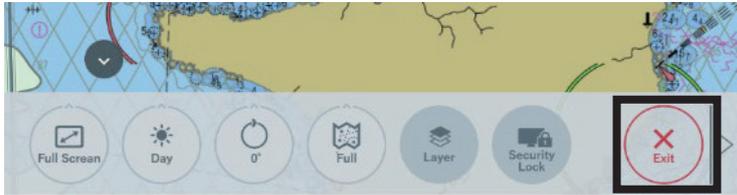
Command Prompt screen is displayed and the rollback process starts.

After the rollback processing is completed, the command prompt screen is automatically closed.

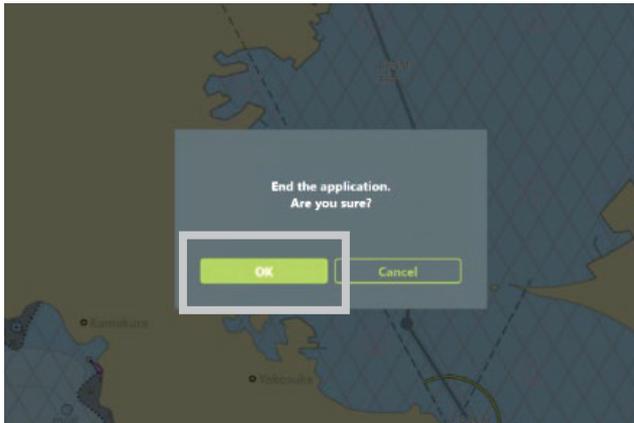
3.25 Terminating the Equipment

Use the following procedure to terminate this equipment.

1. Tap the [Exit] icon.



The end confirmation pop-up is displayed.



2. Tap the OK button to end the NeCST app.

3. Tap [Windows]-[Power button]-[Shut down].

As another method, press the power button of the display processing unit.
The display processing unit is terminated.

4. Press the power button on the data processing unit.

The data processing unit is terminated.

5. Press the power button on the touch panel monitor.

Press and hold for at least 5 seconds.

After the program bar appears on the screen and the power is turned off.

6. When equipped with the NBD-904, turn off the DC OUTPUT of the NBD-904.



If the UPS firmware version is less than 6.8.0, follow the procedure below to terminate the UPS.

7. Press the UPS power button.

8. Press UP/DOWN button to display “Turn UPS Off”.

9. Select Yes and press the ENTER button.



10. Select Off-No Delay and press the ENTER button.
The UPS shuts down.



If the UPS firmware version is 6.8.0 or higher, follow the procedure below to terminate the UPS.

- 7. **Long press the UPS power button.**
After a few seconds, the UPS shuts down.



Section 4 Maintenance & Inspection

The maintenance work shown below is performed to keep in good condition. Good maintenance reduces equipment failure. It is recommended to perform maintenance as regularly as possible.

4.1 Maintenance

4.1.1 Maintenance of Touch Panel Display Unit (NWZ-1470/1470N)

4.1.1.1 Cleaning the LCD Panel

Softly wipe off dust from the LCD panel surface of the touch panel display unit (NWZ-1470/1470N) with the cleaning cloth that comes with this equipment.

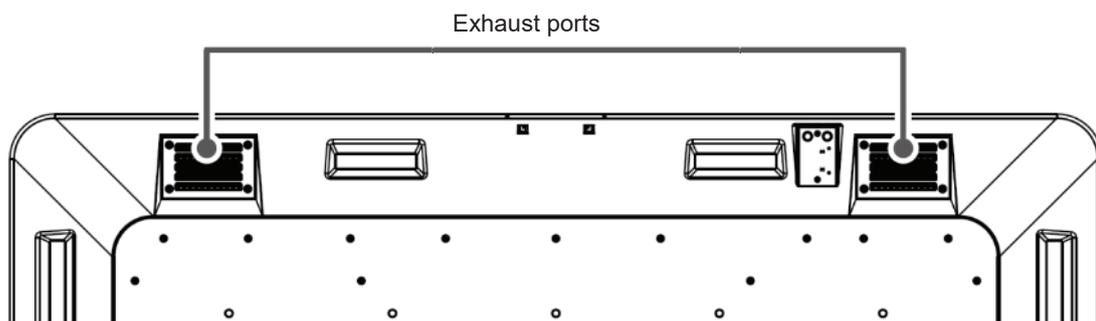
CAUTION



- If the LCD panel surface gets wet with liquid such water, immediately wipe it off since it may affect touch operation.
- Using chemicals such as alcohol or antiseptic may cause change in the luster or color, color fade-out, or image quality deterioration of the cabinet or LCD panel surface.
- Make sure not use thinner, benzine, wax, or polishing cleaners since it damages to the cabinet or LCD panel surface.

4.1.1.2 Cleaning the Exhaust Port of the Touch Panel Display Unit (NWZ-1470/1470N)

The fan of the touch panel display unit (NWZ-1470/1470N) is placed as shown below. Clean the exhaust ports of the fan in once about three months, periodically.

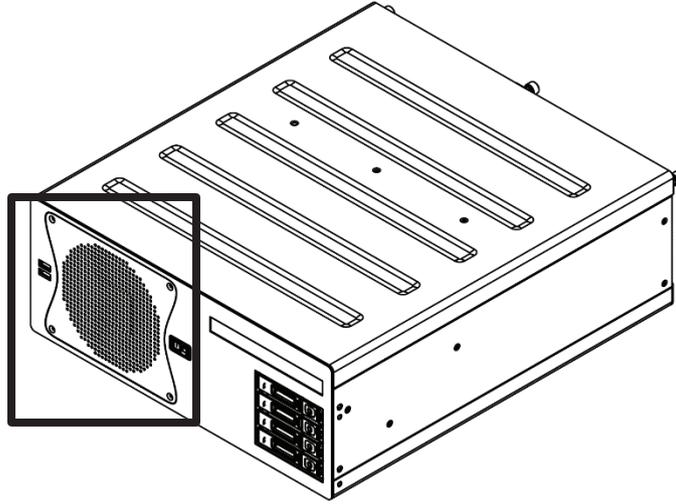


Back of touch panel display unit NWZ-1470(N)

4.1.2 Maintenance of Display Processing Unit

4.1.2.1 Cleaning the Exhaust Port of the Display Processing Unit (NWM-1470)

The fan of the display processing unit (NWM-1470) is installed in the place shown below. Clean the exhaust ports of the fan in once about three months, periodically.

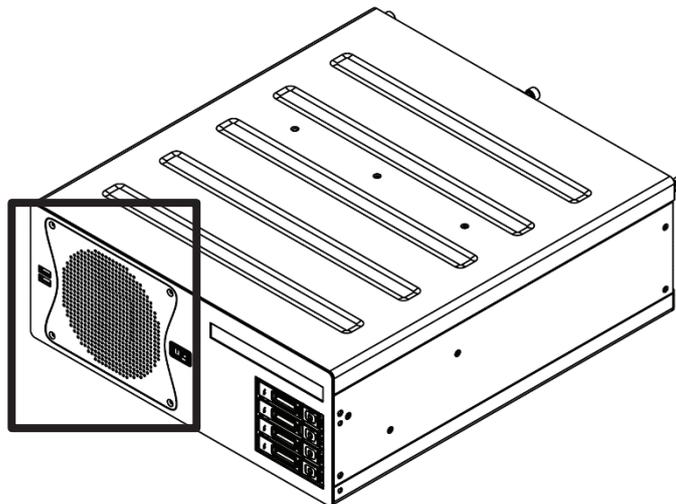


Display Processing Unit NWM-1470

4.1.3 Maintenance of Data Processing Unit

4.1.3.1 Cleaning the Exhaust Port of the Data Processing Unit (NJW-1460)

The fan of the data processing unit (NJW-1460) is placed as shown below. Clean the exhaust ports of the fan in once about three months, periodically.



Data Processing Unit NJW-1460

4.2 Inspection

4.2.1 How to Use the Watcher App

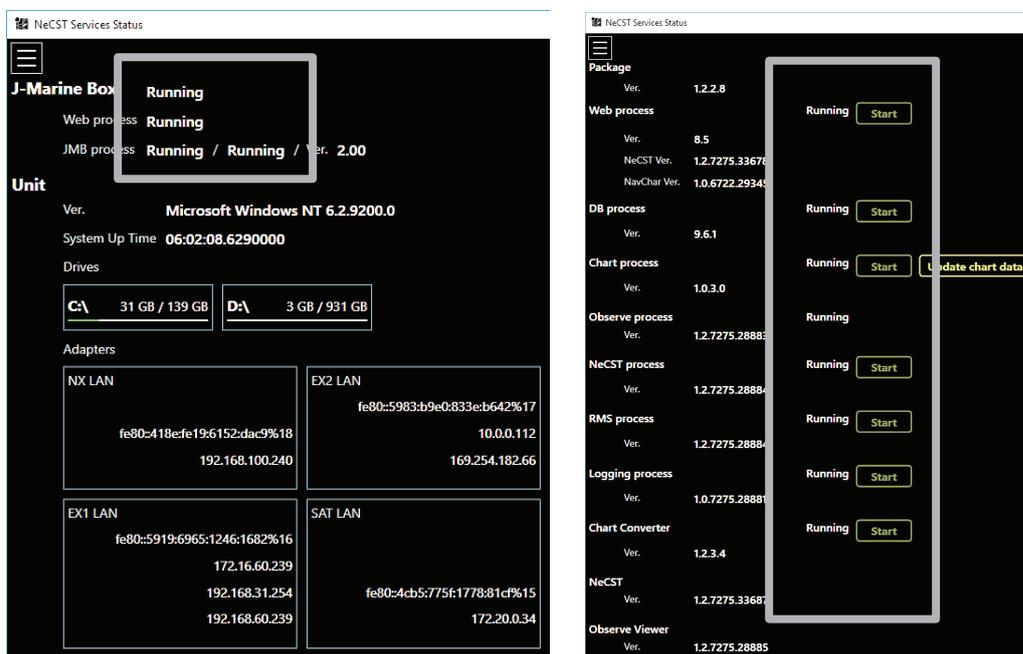
4.2.1.1 Check the NeCST Service

Can check the operational status of NeCST Service.

1. Start Watcher on the desktop of the display processing unit.



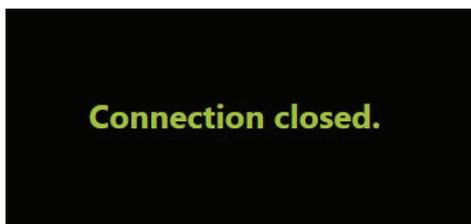
The following screen is displayed.



2. Confirm that each service is “Running”.
If it is not running, tap the Start button.

Note

If the following screen is displayed, communication with the data processing unit is not possible. Confirm whether the data processing unit is running.



4.2.1.2 Save the NeCST Log

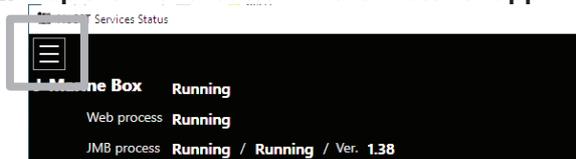
Memo

If the NeCST operation is abnormal, report the situation to the store where you purchased it. Attach "Export Status" and "Save Log".

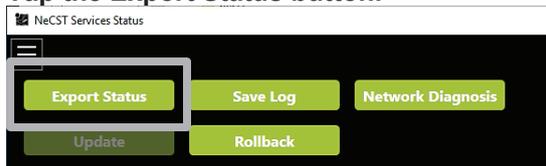
1. Start Watcher on the desktop of the display processing unit.



2. Tap the menu button in the Watcher app.

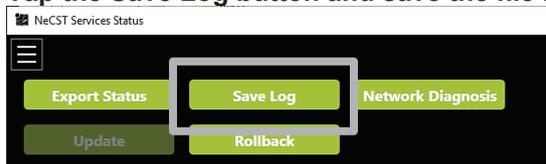


3. Tap the Export Status button.



4. Save with any file name.

5. Tap the Save Log button and save the file in the same way.



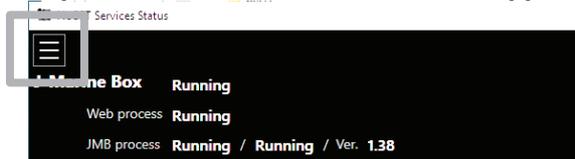
4.2.1.3 Start the Network Diagnosis

Check that it can communicate with SSV.
Perform this function when changing the network settings.

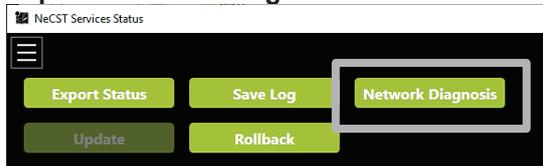
1. Start Watcher on the desktop of the display processing unit.



2. Tap the menu button in the Watcher app.

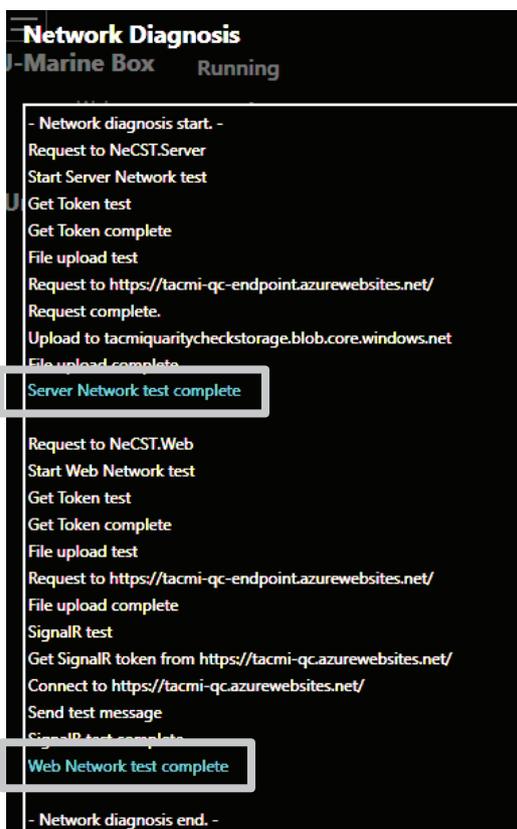


3. Tap the Network Diagnosis button.



4. Confirm that the following message is displayed.

If you do not display the following message, the network settings are incorrect.
Check your network settings and try again.



4.2.2 Periodic Inspection

Perform the operation inspection of the equipment periodically and if any abnormality is found, examine it immediately.

Record the results of inspection, so they can be referenced in the next inspection work.

Perform operation inspection on the items listed in the check list below.

Operation check table

Equipment to be checked	Check Item	Criteria	Remarks
Touch panel display unit	Images on the screen	Images on the screen do not flicker when moving the chart.	
	Sensitivity	The response of the touch panel has not been remarkably lowered.	
	Screen brightness	The touch panel display unit is not significantly dark.	
		Pressing the brightness adjustment button of the touch panel display unit switches the screen brightness.	
Display Processing Unit Data Processing Unit	Various handwritten data	Various handwritten data can be added.	
		The color of various handwritten data can be changed.	
		The line width of various handwritten data can be changed.	
	Various numerical indications	The same location information as the Gyro equipment displays can be displayed.	
		The same ship's heading information as the Gyro equipment displays can be displayed.	
	File synchronization	Create handwritten data, routes, stickers and templates. Confirm that you can export to ECDIS.	
		Confirm that handwritten data and route created by ECDIS can be imported to NeCST.	
		If equipped with MFD, confirm that the route monitored by MFD can be displayed as Active Route.	

4.3 Replacement Main Unit

The unit which need to be replaced on periodically are used in this equipment. If the unit use continuously beyond the service life, it may breakdown of the whole equipment, so we recommend periodic replacement.

 DANGER	
	Never attempt to check or repair the inside of the equipment. Check or repair by an unqualified person may cause fire or electric shock. Contact our head office, or a nearby branch or local office to request servicing.
	Never remove the cover of this equipment. Removing it causes a risk of touching the internal high-voltage part to lead to electric shock.
	Do not attempt to disassemble or tamper with this equipment. Otherwise, fire, electric shock, or malfunction may occur.
	When performing maintenance of the equipment, make sure to turn off the main power supply. Failure to do so may result in electric shock.
	Make sure to turn off all the main power supplies before cleaning the equipment. Since voltage is output from the rectifier, failure to observe this instruction may result in equipment failure, or death or serious injury due to electric shock.

 CAUTION	
	Be sure to turn off all equipment before replacement and inspection. And, turn off the main power supply breaker for safety.
	Use gloves...etc when working. Take care not to get injured.
	Please work as much as possible without disturbance of ships such as harbors.
	Replace Touch panel display unit with at least 4 people. Because it is so heavy. Otherwise, an injury or a malfunction may occur.

4.3.1 Periodically Replacement Unit

Following unit need to replace periodically.

JAN-470/470A series default components

Model	Name	Unit Name	Interval	Code
NWZ-1470(N)	Touch panel display unit	FAN	5 years	7ZYNA4005
NWZ-260		FAN	5 years	7ZYNA4005
NWM-1470	Display Processing Unit	PSU	5 years	7ZZSC0106
		Air Filter	Every year Inspection and cleaning	7ZZSC0107
		System FAN	5 years	7ZZSC0108
NJW-1460	Data Processing Unit	HDD	3 years	7ZZSC0109
		PSU	5 years	7ZZSC0106
		Air Filter	Every year Inspection and cleaning	7ZZSC0107
		System FAN	5years	7ZZSC0108

JAN-470/470A Series optional components

Model	Name	Unit Name	Interval
SMT1000J	1KVA UPS	Battery	3 years*1
SMT1000I/SMT1000IC	1KVA UPS	Battery	3 years*1

*1 Estimated time of replacement UPS battery depends on using environment UPS.
Replace the battery as soon as it regardless of ON or OFF of LED light.

Using temperature	Interval
5–25°C	4.0–5.0 years
30°C	2.8–3.5 years
35°C	2.0–2.5 years
40°C	1.4–1.7 years

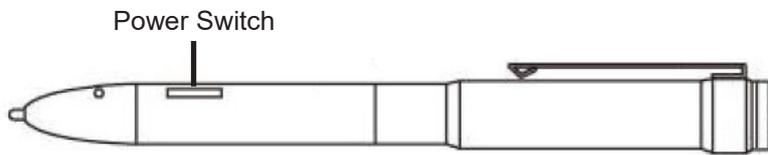
4.3.2 Consumable Unit

Model	Name	Unit Name	Remark
NWZ-1470(N)/ NWZ-260	Touch panel display unit	LR03 alkaline battery Size AAA	For Stylus pen
		Pen tip	Contact the manufacturer.
		Screen Cleaner	Purchase at the following direct sales site. (US) http://www.eizo.com/purchase/direct/monitors.html/ (Japan) http://direct.eizo.co.jp/shop/c/cSC/
EYV-00007	Surface Pen	LR8D425 battery Size AAAA	For Stylus pen
		Pen tip	Purchase at the following direct sales site. (US) https://www.microsoft.com/en-us/store (Japan) https://www.microsoft.com/ja-jp/store

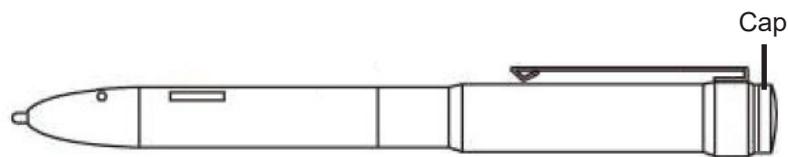
4.3.2.1 Method of Stylus Pen Battery Replacement [NWZ-1470(N)/NWZ-260]

Prepare one piece of LR03 alkaline battery (Size AAA) for replacing.

1. Turn off the power switch of stylus pen.



2. Turn the cap counterclockwise until it unlocks.



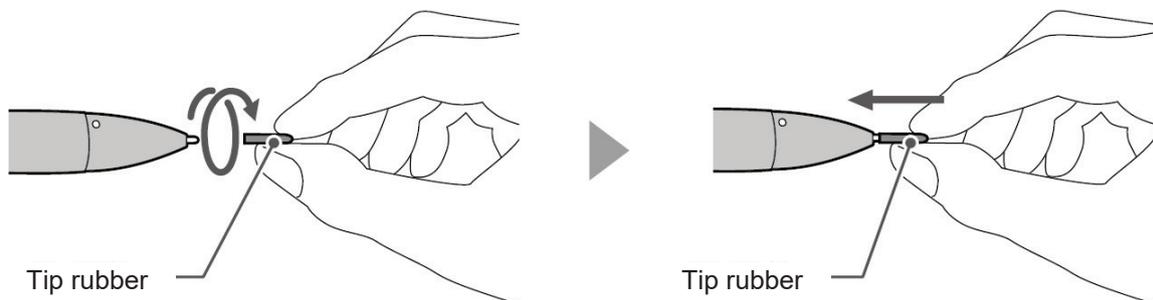
3. Replace the battery, close the cap.

 In local authorities that collect unburnable and burnable garbage, dispose of used battery in accordance with local bylaws and regulations.

4.3.2.2 Replacing Tip Rubber of Stylus Pen [NWZ-1470(N)/NWZ-260]

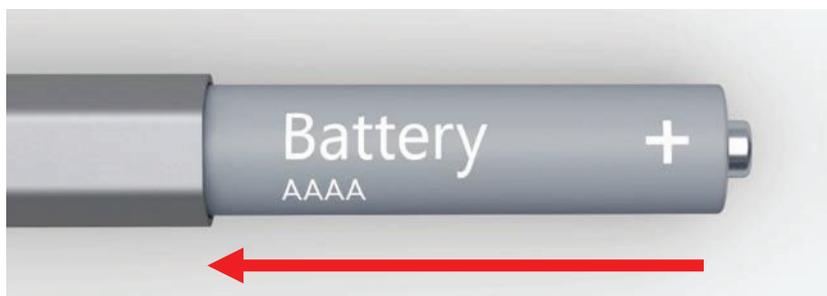
Prepare the pen tip rubber attached to the stylus pen.
If pen tip rubber is all used, contact the manufacturer.

1. Pull out slowly the pen tip rubber at twisting.
2. Insert firmly the new pen tip rubber all the way in.



4.3.2.3 Replacing Stylus Pen Battery [EYV-00007]

1. Pull out the cap part straight from the main body.
2. Replace AAAA battery. Insert so that the plus (+) side of the battery faces downward of the pen.



3. Return the cap part of the pen to the body part.

4.3.2.4 Replacing Stylus Pen Tip [EYV-00007]

1. Twist the pen tip rubber slowly and pull it out.



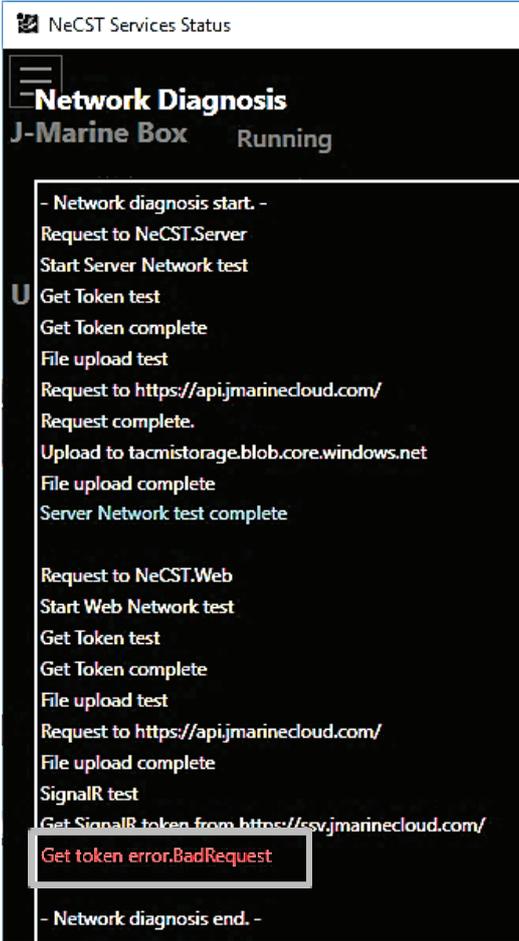
2. Insert the new pen tip firmly.

Section 5 Failures and After-Sale Services

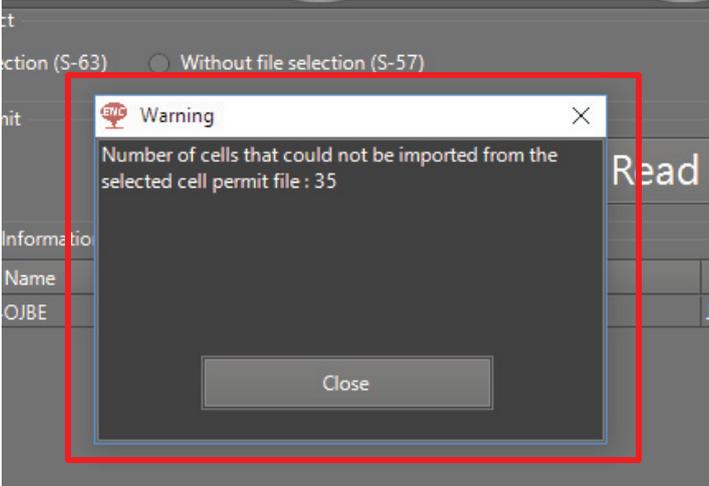
5.1 Troubleshooting

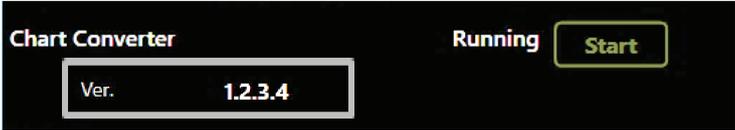
When this equipment does not operate correctly, check the following points before asking for repairs. If the problem still cannot be solved, or if there are any abnormality locations other than those listed below, contact your nearest subsidiary company, branch office, or sales office.

5.1.1 NeCST Watcher

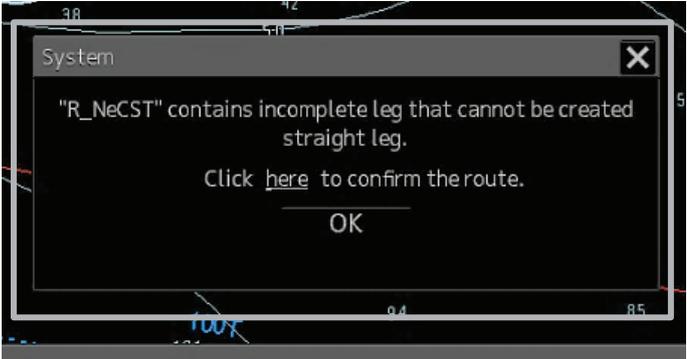
Item	Content
Issue	<p>When running Network Diagnosis, the following error (<code>Get token error.BadRequest</code>) is displayed.</p>  <pre>NeCST Services Status Network Diagnosis J-Marine Box Running - Network diagnosis start. - Request to NeCST.Server Start Server Network test U Get Token test Get Token complete File upload test Request to https://api.jmarinecloud.com/ Request complete. Upload to tacmistorage.blob.core.windows.net File upload complete Server Network test complete Request to NeCST.Web Start Web Network test Get Token test Get Token complete File upload test Request to https://api.jmarinecloud.com/ File upload complete SignalR test Get SignalR token from https://sv.jmarinecloud.com/ Get token error.BadRequest - Network diagnosis end. -</pre>
Action	<p>NeCST is waiting for cloud registration. This error will be resolved after cloud registration is done.</p>

5.1.2 ENC Manager

Item	Content
Issue	<p>Cell permit can't be imported.</p> 
Action	<p>Cell permit does not support user permit. Prepare a Cell permit that support to the user permit and try to import it.</p>

Issue	Some charts are not imported when updating charts.
Action 1	Importing the Base chart may have failed. Import the corresponding Base chart.
Action 2	<p>Base charts can be imported, but charts cannot be updated. The ENC Manager app version may be out of date (1.2.3.4 or lower).</p>  <p>If the app version is 1.2.3.4 or lower, request an update from your local branch office, branch office, sales office, or agency.</p>

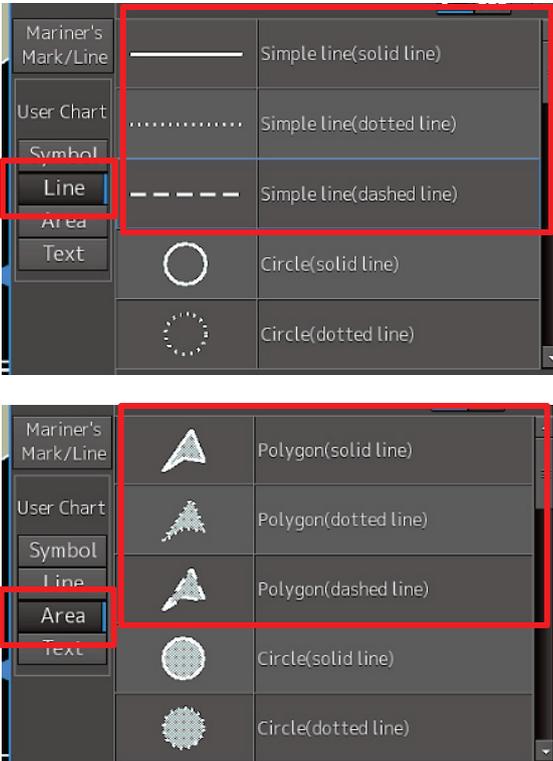
5.1.3 Route

Item	Content
Issue	<p>Export the route created by NeCST to ECDIS. However, the exported route cannot be imported into ECDIS. The following error message is displayed.</p>  <p>The screenshot shows a dark-themed dialog box titled "System" with a close button (X) in the top right corner. The main text reads: "R_NeCST" contains incomplete leg that cannot be created straight leg. Below this, it says "Click here to confirm the route." with a blue underlined word "here". At the bottom center is an "OK" button. The dialog box is overlaid on a map interface with some faint numbers and lines visible in the background.</p>
Action	<p>There is a problem with the route created by NeCST. NeCST does not have a route check function like ECDIS when creating a route. Create a route with a margin between WPTs and a margin for turning.</p>

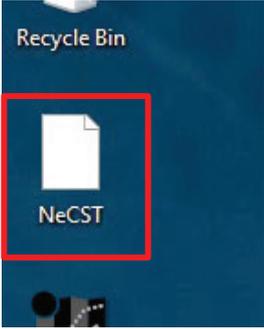
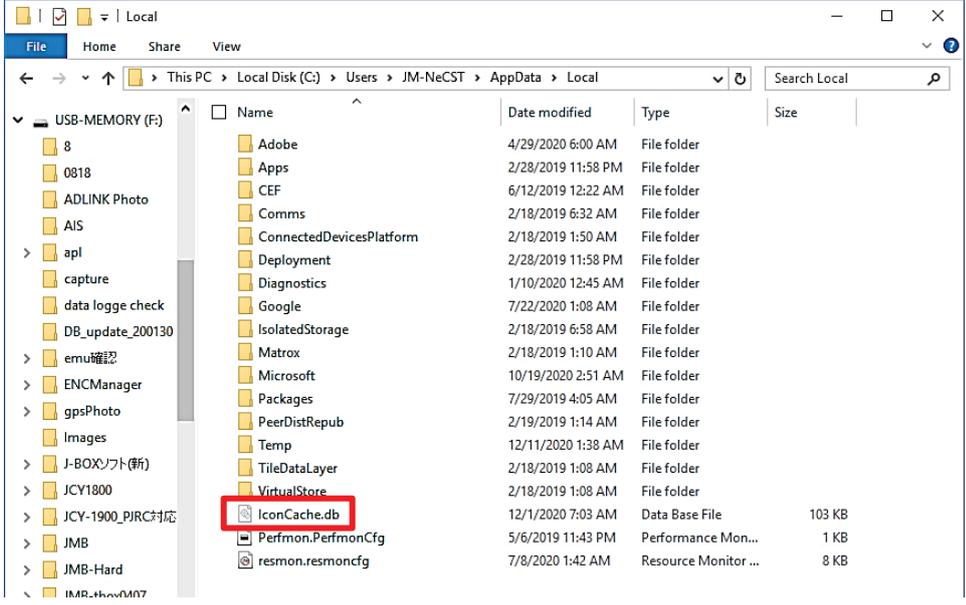
5.1.4 Active Route

Issue	<p>The route file for which Monitoring Route was executed by ECDIS (JAN-7201 / 9201) is not displayed as Active Route.</p>
Action	<p>The route file name for which Monitoring Route was executed by ECDIS may contain characters that NeCST does not support. Edit the route file name and try again.</p> <p>Unusable characters: !\$^~</p>

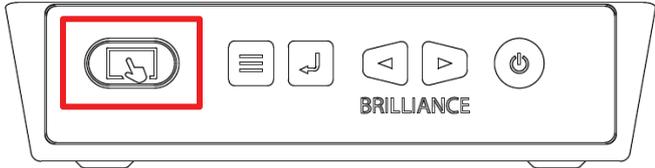
5.1.5 User Chart

Item	Content
Issue	<p>The user chart output from JAN-7201/9201 is not displayed on NeCST.</p> 
Action	<p>NeCST cannot display Symbol types. The characters set in "Comment" of Symbol can be displayed. The following Simple Line and Polygon can be displayed on NeCST.</p> 

5.1.6 NeCST App.

Item	Content
Issue	<p>The NeCST icon on the desktop is a white icon.</p> 
Action	<ol style="list-style-type: none"> 1. Delete C:\Users\JM-NeCST\AppData\Local\IconCache.db. 2. Restart the display processing unit. 
Issue	The taskbar is not displayed.
Action	<p>Prepare a USB keyboard.</p> <ol style="list-style-type: none"> 1. Press [Ctrl] + [Shift] + [Esc] at the same time. The task manager is displayed. 2. Long tap "explorer" on the Process tab and select Restart. <p>If "explorer" is not displayed on the Process tab, do the following:</p> <ol style="list-style-type: none"> 1. Press the [Windows] key + [R] key at the same time. "Run" is displayed. 2. Enter "explorer.exe" and tap OK.
Issue	The icon on the desktop does not appear.
Action	<ol style="list-style-type: none"> 1. Long tap on the desktop. 2. Select [View] - [Show desktop icons].

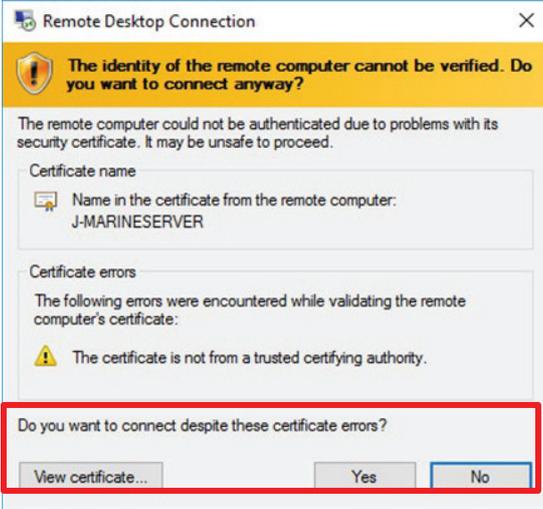
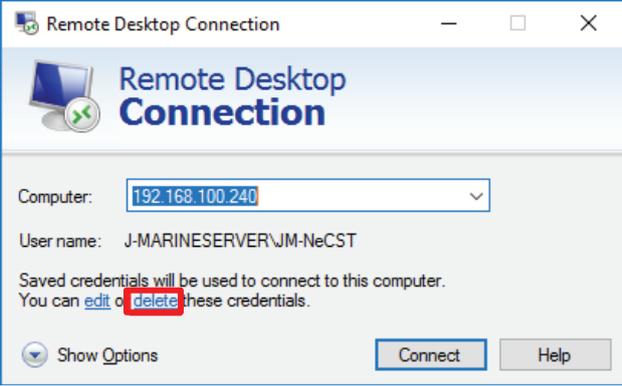
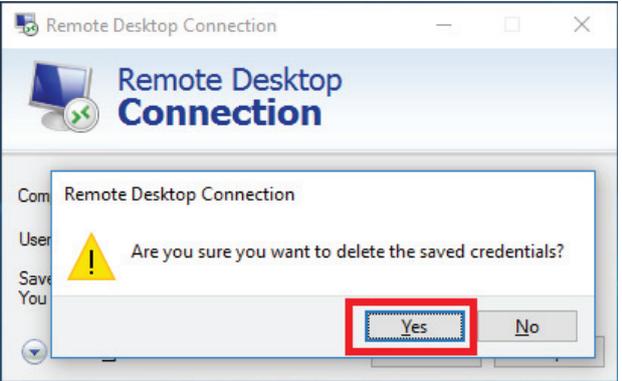
Issue	<p>The cloud disconnection mark is displayed.</p> 
Action	<p>While the cloud disconnection mark is displayed, ship-land interconnection is not possible. The satellite line may be in poor condition. Please wait for a while and check again.</p> <p>If it does not recover after waiting for a while, perform the following.</p> <ul style="list-style-type: none"> • Check the status of the satellite line and wait until it is restored. • Restart the data processing unit.

Issue	<p>The touch panel does not respond.</p>
Action	<p>The touch panel sensor may be malfunctioning, or the touch panel function may be turned off.</p> <ul style="list-style-type: none"> • Check that the following touch panel enable lamps are lit. • Confirm that nothing is on the touch panel. • Press and hold the following touch panel enable lamp to calibrate the touch panel function. 

Issue	<p>The latitude and longitude of the photo uploaded to "Photo" is displayed at 0 degrees 0 longitude.</p>
Action	<p>Latitude and longitude information is not added to the photo. The location information service of the camera or smartphone may not be enabled, so review the settings of the photograph device.</p>

Issue	<p>The orientation of the photo uploaded to "Seaview" is not displayed.</p>
Action	<p>Orientation information is not added to the photo. The location information service of the camera or smartphone may not be enabled, so review the settings of the photograph device. Also, some cameras or smartphones do not support location-based services, so please check the specifications.</p>

5.1.7 Remote Desktop

Item	Content
Issue	<p>When performing remote desktop from the display processing unit, the check box "Don't ask me again for connections to this computer" is not displayed.</p> 
Action	<ol style="list-style-type: none"> 1. Display the remote desktop screen in the display processing unit. 2. Click "delete".  <ol style="list-style-type: none"> 3. Click "Yes". 

5.2 After-Sale Services

5.2.1 About the Retaining Period of Service Parts

The retaining period of the performance-critical parts (parts required to maintain the functionality of the product) for servicing this equipment is 10 years after the discontinuation of production (including the supply of substitute parts).

5.2.2 When Requesting Repair

If you suspect a failure, please read "5.1 Troubleshooting" thoroughly and take the corrective action. If you still detect abnormality, stop using the product and contact your sales representative, our sales department, the nearest branch office or sales office.

- **Warranty Period:** One year from the purchase date.
- **Repair during the warranty period:** If a failure occurs when using the product correctly according to the explanations and instructions in the instruction manual, our company shall repair the product at no charge. However, repairs of failures caused by misuse, negligence, or any cause beyond our control, such as natural disasters or fire, shall be chargeable.
- **If the warranty period has expired:** If functionality can be recovered by repair, repair shall be made by the request of the customer for a fee.
- Please provide the following information:
 - Product name, model name, manufacturing date, serial number
 - Description of abnormality
 - Business name or organization name, address, phone number

5.2.3 Recommendation of Inspection and Maintenance

Although depending on the usage state, performance may be deteriorated due to change in parts over time.

As well as regular care, inspection and maintenance are recommended.

Regarding inspection and maintenance, please contact your sales representative, our sales department, the nearest branch office or sales office.

Please note that there is a charge for inspection and maintenance.

If you have questions regarding after-sale services, please inquire your sales representative, our sales department, the nearest branch office, or sales office.

5.2.4 Equipment List

In the case of equipment failure, the replacement is basically made with the pieces of the equipment listed below.

5.2.4.1 JAN-470

Name		Model name
Touch panel display Unit	JAN-470-9ANN (46-inch)	NWZ-1470N
	JAN-470-4ANN (46-inch)	NWZ-1470
	JAN-470-2ANN (26-inch)	NWZ-260
Display Processing Unit	Compliant to IEC 60945	NWM-1470
	Not Compliant to IEC 60945	HNS-00010
Data Processing Unit	Compliant to IEC 60945	NJW-1460
LAN switch	Compliant to IEC 60945	NQA-2443/A
Power Supply Unit		NBD-904
Terminal Box		CQD-10
UPS	1.0KVA 100V	SMT1000J
	1.0KVA 230V	SMT1000I/SMT1000IC
Network Card		AP9630J
		AP9630
		AP9640J
		AP9640
Transformer		NS11-500
JB control box		HJP-100-3-100
		HJP-100-3
SLC		NQE-1143-S(CMH-2370)
26-inch desktop frame		CWB-1660

5.2.4.2 JAN-470A

Name		Model name
Touch panel display Unit	JAN-470A-9ANN (46-inch)	NWZ-1470N
	JAN-470A-4ANN (46-inch)	NWZ-1470
	JAN-470A-2ANN (26-inch)	NWZ-260
Display Processing Unit	Compliant to IEC 60945	NDC-3470
Data Processing Unit	Compliant to IEC 60945	NDC-3460
LAN switch	Compliant to IEC 60945	NQA-2443A
Power Supply Unit	Compliant to IEC 60945	NBD-904
Terminal box		CQD-4704
		CQD-4708
UPS	1.0KVA 100V	SMT1000J
	1.0KVA 230V	SMT1000IC
Network Card		AP9630J
		AP9630
		AP9640J
		AP9640
Transformer		NS11-500
		A2010706
JB control box		HJP-100-3-100
		HJP-100-3
SLC		NQE-1143-S(CMH-2370)
26-inch desktop frame		CWB-1660
GateWayBox		H-7HZJC0016

Section 6 How to Dispose of Equipment

When disposing of this equipment, follow the regulations and/or rules of the local regulatory authority which has control over the location of disposal.

Section 7 Specifications

7.1 Touch Panel Display Unit (NWZ-1470/1470N)

Item	Contents
Panel	
Type	VA
Backlight	LED
Screen Size	116.8-cm (46.0-inch) type
Recommended Resolution	1920 × 1080 (Aspect ratio: 16:9)
Display Area (width × length)	1018.1 × 527.7 mm
Pixel Pitch	0.530 × 0.530 mm (Minimum visual distance: 1.824 m)
Display color	Approx. 16.77 million colors
Viewing Angle (horizontal/vertical)	178°/178°
Brightness	620 cd/m ²
Contrast Ratio	4000:1
Response Speed	6.5 ms (in the intermediate gradation range)
Touch panel	
Type	Projected Capacitive Type
Surface Treatment	Anti-glare, Anti-fingerprint
Communications	USB transfer
Touch Durability	50.00 million times (min.)
Surface Hardness	5 H
Supported OS	Windows 10/8.1/7 (64-bit, 32-bit)
Simultaneous Touch Points	10 points
Video signal	
Input Terminal	DVI-I 29-pin ×1, DVI-D 24-pin ×1, D-Sub 15-pin (mini) ×1, CVBS (BNC) ×1
Digital Scanning Frequency (horizontal/vertical)	31–68 kHz/59–61 Hz (69–71 Hz for VGA Text)
Analog Scanning Frequency (horizontal/vertical)	31–80 kHz/56–76 Hz
Sync. signal	Separate, Composite
USB	
Port	Upstream ×1, Downstream ×2
Standard	USB 2.0
Power	
Power Supply Input	100–240 VAC (Operation range: 85–264 VAC), 50/60 Hz 24 VDC (Operation range: +30%/-10%)
Power Consumption (Max.)	AC ≤ 125 W, DC ≤ 121 W
Power Consumption (Energy saving)	AC ≤ 16.5 W, DC ≤ 12.0 W
Power Consumption (Standby)	AC ≤ 5.0 W, DC ≤ 2.5 W
Mechanical	
Dimension	1336×890×91 mm (width× height×depth)
Mass	Approx. 47.2 kg
Operational environmental conditions	
Temperature	-15°C to +55°C
Relative Humidity (R.H., No condensation)	10% to 90%
Protection class	IP65 (IP22: back)

7.2 Touch Panel Display Unit (NWZ-260)

Item	Contents
Panel	
Type	VA
Backlight	LED
Screen Size	64.9-cm (25.54-inch) type
Recommended Resolution	1920×1200
Display Area (width x length)	550.08×343.8 mm
Pixel Pitch	0.2865×0.2865 mm
Display color	Approx. 16.77 million colors
Viewing Angle (horizontal/vertical)	176°/176°
Brightness	470 cd/m ²
Contrast Ratio	1500: 1
Response Speed	20 ms
Touch panel	
Type	Projected Capacitive Type
Surface Treatment	Anti-Reflection
Communications	USB
Touch Durability	50.00 million times (min.)
Surface Hardness	5 H
Supported OS	Windows 10/8/7 (64-bit, 32-bit)/XP (32-bit)
Simultaneous Touch Points	5 points
Video signal	
Input Terminal	DVI-D 24-pin × 1, D-Sub 15-pin (mini) × 1
Digital Scanning Frequency (horizontal/vertical)	31–76 kHz/59–61 Hz
Analog Scanning Frequency (horizontal/vertical)	31–81 kHz/56–76 Hz
Sync. signal	Separate, Composite
Power	
Power Supply Input	AC 85 V to 264 V (Operating range: AC 85 V to 264 V), 50/60 Hz DC 24 V (Operating range: +30%/-10%)
Power Consumption (Max.)	108 W or less (AC 85 V to 264 V or DC 24 V)
Power Consumption (Standby)	AC ≤ 10.0 W, DC ≤ 7 W
Mechanical	
Dimension	624×456×86 mm (width× height×depth)
Mass	Approx. 15.1 kg
Operational environmental conditions	
Temperature	-15°C to 55°C
Relative Humidity (R.H., No condensation)	10% to 90%
Protection class	IP65 (IP22: back)

7.3 Display Processing Unit (NWM1470)

Item	Contents
CPU	Core™ i7-4770S Quad Core 3.1 GHz
GPU	Matrox®9140 LP Graphics Card, PCI-E ×16, 4×DVI-I, 512 MB
Main memory	DDR3 SO-DIMM 204-pin 8 GB (2 × 4 GB)
Storage	2.5SSD-M SATA 150 GB
OS	Windows 10 Enterprise LTSB (64-bit)
Resolution	2048×1536 (Recommended resolution: 1920×1080)
Mechanical	
External dimension	345.0×133.0×390.0 mm (width×height×depth)
Mass	Approx. 10 kg
Fan	1
Operational environmental conditions	
Temperature	-15°C to +55°C
Relative Humidity	≤ 95% (No condensation)
Vibration	Compliant to IEC 60945 Ed4.0
EMC	Compliant to IEC 60945 Ed4.0
Protection class	IP20
Interface	
DVI-I	5 (4: PCI-E × 16 Outputs, 1: Default)
DVI-D	1
Display Ports	1
Serial Port	2
LAN	4 (2: 10/100/1000 Mbps, Intel® I217/I210 Gigabit LAN, 2: 10/100/1000 Mbps, Realtek 8111E Gigabit LAN)
USB	6 (1: USB 2.0/1.1, 3: USB 2.0, 2: USB 3.0)
DVD/CD-RM	1
Power Supply	100–240 VAC, 50/60 Hz 24 VDC

7.4 Display Processing Unit (HNS-00010)

Item	Contents
CPU	Core™ i7-8650U Quad Core 4.2GHz
GPU	NVIDIA® GeForce® GTX 1060 6GB (within keyboard)
Main memory	LPDDR3 16 GB
Storage	256 GB
OS	Windows 10 Pro Creators Update 64bit
Resolution	3240×2160 (Recommended resolution: 1920×1200)
Mechanical	
External dimension	343×251×15-23 mm (width × height × depth)
Mass	Approx. 1.9 kg including keyboard
Interface	
USB type-A	2
USB type-C	1
3.5mm headphone jack	1
Surface Connect port	2
Full-size SDXC card reader (UHS-II)	1
Power Supply	AC 100-240 V, 50/60 Hz

7.5 Display Processing Unit (NDC-3470)

Item	Contents
CPU	Core™ i7-6700TE
Main memory	8GB DDR4 2133MHz
Storage	2.5SSD-M SATA 256 GB
OS	Windows 10 IoT Ent LTSC MultiLang OEI 2016 High End (64-bit)
Mechanical	
External dimension	220×170×210 mm (width×height×depth)
Mass	Approx. 4.5 kg
Fan	Fanless
Operational environmental conditions	
Temperature	0°C to +50°C
Relative Humidity	≤ 95% (No condensation)
Vibration	Operating, 5 Grms, 5-500 Hz, 3 axes
EMC	CE & FCC Class A
Interface	
VGA	1
DVI-D	1
Display Ports	1
Serial Port	4 DB9, 2 RS-422/485
LAN	5 (3: GbE port, 2: PCIe GIE72)
USB	7 (2 : USB2.0, 4 : USB3.0, 1 : Internal USB2.0)
Power	
Power Supply	DC 12-24 V
Power Consumption (Max.)	53.52 W
Power Consumption (Standby)	19.68 W

7.6 Data Processing Unit (NJW-1460)

Item	Contents
CPU	Core™ i7-4770S Quad Core 3.1 GHz
Main memory	DDR3 SO-DIMM 204-pin 8 GB (2×4 GB)
Storage	2.5SSD-M SATA 150GB 2.5HDD SATA 1 TB
OS	Windows Server 2012R2 (64-bit)
Resolution	1920×1200
Mechanical	
External dimension	345.0×133.0×390.0 mm (width×height×depth)
Mass	Approx. 10 kg
Fan	1
Operational environmental conditions	
Temperature	-15°C to +55°C
Relative Humidity	≤ 95%
Vibration	Compliant to IEC 60945 Ed4.0
EMC	Compliant to IEC 60945 Ed4.0
Protection class	IP20
Interface	
DVI-I	1
DVI-D	1
Display Ports	1
Serial Port	2
LAN	4 (2: 10/100/1000 Mbps, Intel® I217/I210 Gigabit LAN, 2: 10/100/1000 Mbps, Realtek 8111E Gigabit LAN)
USB	6 (1: USB 2.0/1.1, 3: USB 2.0, 2: USB 3.0)
DVD/CD-RM	1
Power Supply	100–240 ACV, 50/60 Hz 24 VDC

7.7 Data Processing Unit (NDC-3460)

Item	Contents
CPU	Core™ i7-6700TE
Main memory	8GB DDR4 2133MHz
Storage	2.5SSD-M SATA 256 GB
OS	Windows 10 lot Ent LTSB MultiLang OEI 2016 High End (64-bit)
Mechanical	
External dimension	220×170×210 mm (width×height×depth)
Mass	Approx. 4.5 kg
Fan	Fanless
Operational environmental conditions	
Temperature	0°C to +50°C
Relative Humidity	≤ 95% (No condensation)
Vibration	Operating, 5 Grms, 5-500 Hz, 3 axes
EMC	CE & FCC Class A
Interface	
VGA	1
DVI-D	1
Display Ports	1
Serial Port	4 DB9 2 RS-422/485
LAN	5 (3: GbE port, 2: PCIe GIE72)
USB	7 (2 : USB2.0, 4 : USB3.0, 1 : Internal USB2.0)
Power	
Power Supply	DC 12-24 V
Power Consumption (Max.)	53.52 W
Power Consumption (Standby)	19.68 W

7.8 Power Supply Unit (NBD-904)

Item	Contents
Power	
AC Input voltage	89–132 VAC/180–266 VAC 47–64 Hz
DC Input voltage	DC 21.6–31.2
Input current	6.5 A (continuous); 24 VDC, 8.5 A, MAX: 5 min
DC output	DC24V
Mechanical	
Dimension	275×180×98(mm) (width×depth×height)
Mass	Approx. 2.6 kg

7.9 Terminal Box (CQD-10)

Item	Contents
Technology	
RoHS	Compliant
Mechanical	
Dimension	260×110×64 (mm) (width×depth×height)
Mass	Approx. 1.03 kg
Environment	
Operating temperature	-15°C to +55°C
Operating relative humidity	40°C 93%

7.10 Terminal Box (CQD-4704)

Item	Contents
Mechanical	
Dimension	70×90×42.5 (mm) (width×depth×height)
Mass	Approx. 147g
Tightening torque	0.8 ~ 1.4N · m
Power	
Rated insulation voltage	AC, DC600V
Rated energizing current Connectable wire and maximum current	0.75mm ² 10A 1.25 mm ² 15A 2.0mm ² 20A
Insulation resistance	200MΩ or more (at DC500V)
Power - frequency withstand voltage	AC2500V / 1 minute

7.11 Terminal Box (CQD-4708)

Item	Contents
Mechanical	
Dimension	90×110×42.5 (mm) (width×depth×height)
Mass	Approx. 234g
Tightening torque	0.8 ~ 1.4N · m
Power	
Rated insulation voltage	AC, DC600V
Rated energizing current Connectable wire and maximum current	0.75mm ² 10A 1.25 mm ² 15A 2.0mm ² 20A
Insulation resistance	200MΩ or more (at DC500V)
Power - frequency withstand voltage	AC2500V / 1 minute

7.12 UPS (SMT1000J)

Item	Contents
Output	
Output outlet shape	NEMA 5-15R × 8
Group number of switch output outlet	1
Maximum output capacity When using standard input plug	670W/1000 VA
Maximum output capacity When changing input plug	670W/1000 VA
Output voltage during battery operation	Sine wave output AC100 V±6% After warning of remaining battery low warning, it is a waveform synchronized with commercial current -10%
Output frequency during battery operation	50/60 Hz ±2%
Waveform during battery operation	Sine wave output
Switching time (normal)	5–10 ms
Automatic voltage adjustment function	Correspondence
Input	
Rated input voltage	AC100 V
Rated input frequency	50/60 Hz +/- 3Hz (Automatic detection)
Surge filter · Noise filter	
Surge filter	Presence
Noise filter	Presence
Battery	
Battery type	Small sealed lead-acid battery
Battery capacity	24VDC/12Ah (1pcs)
Charging time up to 90%	About 4 hours
Replacement battery kit model number	RBC6L
Dimension · Mass	
External dimension	225×172×439 mm
Net Mass	Approx. 21 kg
Packing Mass	Approx. 23 kg
Environment	
Using environment	Max height 3,000 m, humidity 0–95%, temperature 0°C–40°C (without condensation)
Audible noise at a distance of 1 m	Less than 40 dBA
Standard	
EMC Standard	VCCI ClassA
Safety Standard	UL 1778
Interface	
Port	RJ-45 Serial, USB, SmartSlot
LCD display Character-supported	Correspondence
Alarm	Battery operated, low battery
Power consumption · Calorific value	
Power consumption (normal time)	25 W
Power consumption (during charging)	168 W

7.13 UPS (SMT1000I)

Item	Contents
Output	
Output outlet shape	IEC-320 C13 × 8
Group number of switch output outlet	1
Maximum output capacity When using standard input plug	700W/1000 VA
Maximum output capacity When changing input plug	700W/1000 VA
Output voltage distortion	Less than 5%. (Full load)
Output frequency during battery operation	50/60 Hz ±2%
Waveform during battery operation	Sine wave output
Switching time (normal)	5–10 ms
Automatic voltage adjustment function	Correspondence
Input	
Rated input voltage	AC230 V
Rated input frequency	50/60 Hz +/- 3Hz (Automatic detection)
Surge filter · Noise filter	
Surge filter	Presence
Noise filter	Presence
Battery	
Battery type	Small sealed lead-acid battery
Charging time up to 90%	About 3 hours
Replacement battery kit model number	RBC6
Dimension · Mass	
External dimension	219×171×439 mm
Net Mass	Approx. 18.9 kg
Packing Mass	Approx. 22.8 kg
Environment	
Using environment	Max height 3,000 m, humidity 0–95%, temperature 0°C–40°C (without condensation)
Audible noise at a distance of 1 m	Less than 41 dBA
Standard	
Authorization	CE, CSA, EAC, EN/IEC 62040-1, EN/IEC 62040-2, RCM, UL 1778, VDE
Interface	
Port	RJ-45 Serial, USB, SmartSlot
LCD display Character-supported	Correspondence
Alarm	Battery operated, low battery

7.14 UPS (SMT1000IC)

Item	Contents
Output	
Output outlet shape	IEC-320 C13 × 8
Group number of switch output outlet	1
Maximum output capacity When using standard input plug	700W/1000 VA
Maximum output capacity When changing input plug	700W/1000 VA
Output voltage	230V
Output voltage distortion	Less than 5%. (Full load)
Output frequency during battery operation	50/60 Hz ±3%
Waveform during battery operation	Sine wave output
Switching time (normal)	6–10 ms
Input	
Rated input voltage	AC230 V
Rated input frequency	50/60 Hz +/- 3Hz (Automatic detection)
Input Plug Type	IEC 320 C14
Surge filter · Noise filter	
Surge filter	Presence
Noise filter	Presence
Battery	
Battery type	Small sealed lead-acid battery
Charging time up to 90%	About 3 hours
Replacement battery kit model number	RBC6
Dimension · Mass	
External dimension	219×171×439 mm
Net Mass	Approx. 19.4 kg
Packing Mass	Approx. 22.77 kg
Environment	
Using environment	Max height 3,048 m, humidity 0–95%, temperature 0°C–40°C (without condensation)
Audible noise at a distance of 1 m	Less than 41 dBA
Standard	
Authorization	CE, CSA, EAC, EN/IEC 62040-1, EN/IEC 62040-2, RCM, UL 1778, VDE
Interface	
Port	USB, SmartSlot
LCD display Character-supported	Correspondence
Alarm	Battery operated, low battery

7.15 Transformer (NS11-500)

Item	Contents
Power supply	
Primary voltage	F120-F110-R100V
Secondary voltage	100V
Current	
Secondary current	5A
Structure	
Dimension	280×320×210 (mm) (width × depth × height)
Weight	About 14.5 kg
Heat resistant class	E
Insulation resistance	100 MΩ or more (DC 1 kV)
Insulation withstand voltage	AC 2kV/min (between PS and E), AC 2kV/min (between SP and E)
Capacity	500VA
Frequency	50/60Hz
Cable entry	Grommet type
Standard	
Applicable standard	JEM1333-1976

7.16 Transformer (A2010706)

Item	Contents
Power supply	
Primary voltage	F120-F110-R100V
Secondary voltage	100V
Current	
Secondary current	5A
Structure	
Dimension	280×320×210 (mm) (width × depth × height)
Weight	About 14.5 kg
Heat resistant class	E
Insulation resistance	100 MΩ or more (DC 1 kV)
Insulation withstand voltage	AC 2kV/min (between PS and E), AC 2kV/min (between SP and E)
Capacity	500VA
Frequency	50/60Hz
Cable entry	Cable ground type
Standard	
Applicable standard	JEM1333-1976

7.17 JB Control Box (HJP-100-3-100)

Item	Contents
Power	
Input voltage	100 VAC
Mechanical	
Dimension	350×307×119 (mm) (width×depth×height)
Mass	6.5 kg

7.18 JB Control Box (HJP-100-3)

Item	Contents
Power	
Input voltage	220 VAC
Mechanical	
Dimension	350×307×119 (mm) (width×depth×height)
Mass	6.5 kg

7.19 Sensor LAN Switch Unit (NQA-2443)

Item	Contents
Technology	
Standards	IEEE 802.3, 802.3u, 802.3x
Processing type	Store and Forward, with IEEE 802.3 full duplex, back pressure flow control
Forward and filtering rate	148810 pps
Latency	< 5 μs
Interface	
Number of ports	16
RJ45	10/100BASE-T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
LED	Power, Fault, Speed
Power	
Input voltage	12–48 VDC
Input current	Max: 0.34 A
Overcurrent protection	1.6 A
Reverse polarity protection	Yes
Mechanical	
Dimension	80.1×135×105(mm) (width×depth×height)
Mass	1140 g
Environment	
Operating temperature	0 to 60°C
Operating relative humidity	5% to 95% (No condensation)
Vibration	Sweep 2 Hz to 13.2 Hz at ±1 mm, 13.2 Hz to 100 Hz at 7m/s ² and for 2h on each resonance, otherwise 2h at 30 Hz in all three axes
EMC	IEC 60945-Ed4.0

7.20 Sensor LAN Switch Unit (NQA-2443A)

Item	Contents
Technology	
Standards	IEEE 802.3, 802.3u, 802.3x, 802.3ab
Type	Store and Forward
Maximum throughput	14,880 pps/port (at 10Mbps, 64byte pkt, uni-cast) 148,810 pps/port (at 100Mbps, 64byte pkt, uni-cast) 1,488,100 pps/port (at 1000Mbps, 64byte pkt, uni-cast)
Interface	
Number of ports	16
RJ45	10BASE-T/100BASE-TX/1000BASE-T Auto Negotiation function for 10/100Mbps full / half duplex, Automatic recognition of 1000Mbps full duplex AUTO-MDI/MDI-X function
LED	PWR, UVP/OVP, RVP, LOOP, LINK/ACT
Power	
DC Input voltage	Rated power input: 24V (allowable range: 18-36V)
Input voltage drop protection	After starting the equipment, operation can be maintained even if the voltage drops below 18V to 17.5V or more (period 1.5 ± 0.2 seconds)
Input overvoltage protection	After starting the equipment, operation can be maintained even if it rises to more than 38V and less than 38V (period 1.5 ± 0.2 seconds)
Current consumption	Rated current consumption: 0.55A (at 24V rated voltage)
Mechanical	
Dimension	75×105×179(mm) (width×depth×height)
Mass	0.8kg or less
Environment	
Operating temperature	-25 to 70°C
Operating humidity	10% to 90% (No condensation)
Storage temperature	-40 to 85°C
Storage humidity	10% to 90% (No condensation)
Degree of protection	IP20
Applicable law	
VCCI	VCCI Class B compliant (CISPR32)
PL method	Product liability law
Environmental substances	RoHS10
DNVGL-CG-0339 / 2016	Temperature :class D Humidity :class B Vibration :class A EMC(Immunity & Emission) :class B Enclosure :class A
IEC60945 / 2002	11.1 Acoustic noise and signals 11.2 Compass safe distance Standard compass :0.4m Steering compass :0.3m

7.21 SLC (NQE-1143-S(CMH-2370))

Item	Contents
Mechanical	
Dimension	400×86×261.5(mm) (width×depth×height)
Mass	Approx. 3.8kg
Environment	
Operating temperature	-15 to 55°C
Operating relative humidity	40°CRH 93%
Vibration	Sweep 2 Hz to 13.2 Hz at ±1 mm, 13.2 Hz to 100 Hz at 7m/s ² and for 2h on each resonance, otherwise 2h at 30 Hz in all three axes
EMC	IEC 60945-Ed4.0
Power	
Power	21.6–31.2 VDC
Input voltage	MAX 48W
Input current	3A×2, 15A×1 Mini blade fuse
Overcurrent protection	Yes
Interface	
IEC61162-1	8 inputs / 8 outputs
IEC61162-2	2 inputs / 2 outputs
IEC61162-450	1 (100BASE-TX)
Dry contact output (N.C / N.O selectable)	8 (32 V, max 0.8 A, sink circuit)
Dry contact input	8 (5 V, max. 50 mA, source circuit)

7.22 GatewayBox (H-7HZJC0016)

Item	Contents
Technology	
Standards	IEEE802.3、802.3u、802.3ab、802.3x、802.3ad、802.1ab、802.1D、802.1w、802.1s、802.1p、802.1Q、802.1X
Interface	
Number of ports	8 x 10/10/1000BASE-T (RJ45) 4 x GbE SFP Slots 1 x RJ45 Console Port
LED	PWR, RPS, ALM, POST, 1000, 10/100
Power	
DC Input voltage	12~60V DC
Power Consumption	18W
Mechanical	
Dimension	50.0×130.8×161.5(mm) (width×depth×height)
Mass	Approx. 860g
Environment	
Operating temperature	-40~75°C
Operating humidity	10~95% (No condensation)
Storage temperature	-40~85°C
Storage humidity	5~95% (No condensation)
Degree of protection	IP30
Applicable law	
EMI	FCC Part 15 Subpart B Class A EN 55022 : class A EN 55011 : 2009 class A EN 61000-6-4
EMS	EN 55024 EN 61000-6-2 EN 61000-4-2 (ESD) EN 61000-4-3 (RS) EN 61000-4-4 (Burst) EN 61000-4-5 (Surge) EN 61000-4-6 (CS) EN 61000-4-8 (PFMF)
Marine	DNVGL-CS-0339:2016 DNVGL-RU-SHIP-Pt4Ch9:2018 IEC-60945, IACS E10 (Rev.6 2014)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

AppendixA Prohibited Characters

Following is the character which is used in system.

↳: Not be able to use

Character code (ASCII)	Character	Export filename	Import filename	Voyage data name
0	\0	↳	↳	↳
1	\u0001	↳	↳	↳
2	\u0002	↳	↳	↳
3	\u0003	↳	↳	↳
4	\u0004	↳	↳	↳
5	\u0005	↳	↳	↳
6	\u0006	↳	↳	↳
7	\a	↳	↳	↳
8	\b	↳	↳	↳
9	\t	↳	↳	↳
10	\n	↳	↳	↳
11	\v	↳	↳	↳
12	\f	↳	↳	↳
13	\r	↳	↳	↳
14	\u000e	↳	↳	↳
15	\u000f	↳	↳	↳
16	\u0010	↳	↳	↳
17	\u0011	↳	↳	↳
18	\u0012	↳	↳	↳
19	\u0013	↳	↳	↳
20	\u0014	↳	↳	↳
21	\u0015	↳	↳	↳
22	\u0016	↳	↳	↳
23	\u0017	↳	↳	↳
24	\u0018	↳	↳	↳
25	\u0019	↳	↳	↳
26	\u001a	↳	↳	↳
27	\u001b	↳	↳	↳
28	\u001c	↳	↳	↳
29	\u001d	↳	↳	↳
30	\u001e	↳	↳	↳
31	\u001f	↳	↳	↳
33	!			↳
34	"	↳	↳	↳
35	#			↳
37	%		↳	↳
38	&		↳	↳
42	*	↳	↳	↳
43	+		↳	↳
47	/	↳	↳	↳
58	:	↳	↳	↳
60	<	↳	↳	↳
62	>	↳	↳	↳
63	?	↳	↳	↳
92	\¥	↳	↳	↳
124		↳	↳	↳

Appendix B Hazardous Substances of Electrical and Electronic Products



电器电子产品有害物资申明 日本无线株式会社

Declaration on hazardous substances of Electrical and electronic Products Japan Radio Company Limited

有害物质的名称及含量 (Names & Content of hazardous substances)

形式名(Type): JAN-470

名称(Name): J-Marine NeCST

部件名称 (Part name)	有害物质 (Hazardous Substances)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
显示器 (Display Unit)	×	○	○	○	○	○
显示处理装置 (Display Processing Unit)	○	○	○	○	○	○
数据处理装置 (Data Processing Unit)	○	○	○	○	○	○
外部设备(Peripherals) · 电线类(Cables) · 手册/Documents)	○	○	○	○	○	○

本表格依据SJ/T 11364 的规定编制。
(This table is prepared in accordance with the provisions of SJ/T 11364.)

○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 标准规定的限量要求以下。
(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the requirement in GB/T 26572.)

×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 标准规定的限量要求。
(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.)

RE：中华人民共和国电器电子产品有害物质限制使用管理办法
Measures for the Administration of the Restricted Use of the Hazardous Substances Contained in Electrical and Electronic Products of the People's Republic of China

电器电子产品有害物资申明
日本无线株式会社

Declaration on hazardous substances
of Electrical and electronic Products
Japan Radio Company Limited

有害物质的名称及含量

(Names & Content of hazardous substances)

形式名(Type): JAN-470A

名称(Name): J-Marine NeCST

部件名称 (Part name)	有害物质 (Hazardous Substances)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
显示器 (Display Unit)	×	○	○	○	○	○
显示处理装置 (Display Processing Unit)	×	○	○	○	○	○
数据处理装置 (Data Processing Unit)	×	○	○	○	○	○
外部设备(Peripherals) · 电线类(Cables) · 手册/Documents)	○	○	○	○	○	○

本表格依据SJ/T 11364 的规定编制。
(This table is prepared in accordance with the provisions of SJ/T 11364.)

○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 标准规定的限量要求以下。
(Indicates that this hazardous substance contained in all of the homogeneous materials for this part is below the requirement in GB/T 26572.)

×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 标准规定的限量要求。
(Indicates that this hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in GB/T 26572.)

RE: 中华人民共和国电器电子产品有害物质限制使用管理办法
Measures for the Administration of the Restricted Use of the Hazardous Substances Contained in Electrical and Electronic Products of the People's Republic of China

アスベストは使用していません
Not use the asbestos

For further information, contact:

JRC *Japan Radio Co., Ltd.*

Since 1915

URL Head office : <http://www.jrc.co.jp/eng/>

Marine Service Department

1-7-32 Tatsumi, Koto-ku, Tokyo 135-0053, Japan

e-mail : tmsc@jrc.co.jp

One-call : +81-50-3786-9201

ISO 9001, ISO 14001 Certified