



USER MANUAL

AUTOMATIC IDENTIFICATION SYSTEM (AIS CLASS A)

NSI-1000

NOTICE TO USERS

- Thanks for purchasing this product, NSI-1000 AIS Class A.
- Please read this manual carefully to ensure proper use before installation and operation of the NSI-1000.
- NSR will assume no responsibility for the damage caused by improper use or modification of the product or claims of loss of profit by a third party.
- The Software version in your product may be different from that described in this manual. Such differences will not affect the performance of the product. NSR reserves the right on continuous improvement of products, both in software and hardware, without any prior notice.
- The copyright of this manual is owned by the manufacturer, NEW SUNRISE CO., LTD (NSR). Prior written permission is required for copying or reproducing the manual or part of the manual.
- NSR is devoted to publishing and maintaining this manual. As we continue to improve our products to satisfy customers' needs, the information in this document is subject to change without prior notice. NSR does not make any representations or warranties (implied or otherwise) regarding the accuracy and completeness of this document and shall in no event be liable for any loss of profit or any commercial damage, including but not limited to special, incidental, consequential, or other damage.
- Please keep the manual for your future reference.




NOTICES FOR USE ON TANKERS

According to certain requirements, the transmitting power of AIS fitted on tankers should be reduced when the vessel is berthed.

The transmitting power of NSI-1000 will be reduced from 12.5W to 1W automatically if the following conditions are met:

- Ship's type has been set as TANKER.
- NAV STATUS in Voyage Setting has been set as MOORED.
- SOG < 3kn

You may check the TX power indication at the upper right of the screen or in the "VIEW OWN DATA".

SAFETY PRECAUTION	
	<p>Warning</p> <p>This unit contains an electrostatic-sensitive device. Observe precautions for handling.</p>
	<p>Do not Disassemble the Equipment</p> <p>Access to the interior of the NSI-1000 should only be by an NSR-certified technician.</p>
	<p>Dangerous Voltage</p> <p>A dangerous voltage might be present, even though all power supplies to the system are switched off.</p>

MODIFY RECORD

No.	Modify by	Date	Paragraph	Version	Reason
1	Q/A	2013/12/13		01	S/W revised
2	Q/A	2014/03/25		02	S/W revised
3	Q/A	2018/03/05		03	MKD upgraded
4	Q/A	2018/09/30		04	Generally modified
5	Q/A	2019/07/17		05	Generally modified
6	Q/A	2021/02/25		06	upgraded
7	Q/A	2022/04/20		07	Generally modified
8	Q/A	2022/09/14		08	Generally modified
9	Q/A	2023/01/18		09	Generally modified
10	Q/A	2023/09/08		10	Generally modified
11	Q/A	2024/09/12	2.1, Appendix	11	Partially modified
12	Q/A	2025/07/22	All	12	Generally modified
13	Q/A	2025/09/18	10.1, 11	13	Partially improved
14	Q/A	2025/12/12	4.3, Appendix 6	14	Partially modified

VERSION COMPARISON TABLE

Manual Version	Program Version	Remarks
20250722_12	MKD APP: 2.02, 20250530 TRANSPONDER: 2.0.1, 20250420	
20250918_13	MKD APP: 2.07, 20250918	
20251212_14	TRANSPONDER: V2.0.8_20250718	

TABLE OF CONTENTS

1. General	1
1.1 What' s AIS	1
1.2 Ship' s Data.....	2
1.3 AIS Target Display	3
1.4 Special Features.....	3
1.5 System Composition.....	4
1.6 Equipment List.....	5
2. Specifications	6
2.1 VHF Transceiver	6
2.2 DSC Receiver	6
2.3 GNSS Receiver	6
2.4 MKD.....	7
2.5 Sensor and Interface	7
2.6 Power Supply.....	8
2.7 Environmental Condition	8
2.8 Physical	8
3. Installation	9
3.1 GNSS Antenna Installation	9
3.2 VHF Antenna Installation	9
3.3 Transponder Installation	11
3.4 MKD Installation.....	11
3.5 Cabling.....	11
3.5.1 Power Connection.....	12
3.5.2 MKD Connection.....	12
3.5.3 I/O Connection	13
4. Basic Operation	15
4.1 Power ON/OFF	15
4.2 Indicators on Transponder Panel.....	16
4.3 Key Description.....	17
4.4 Screen Components	18
4.5 Brightness Adjustment	20
4.6 Basic Menu Operation	20
4.7 Enter Characters.....	21
4.8 Multi Pages	22
5. AIS Target Display	23
5.1 Target List	23
5.2 Target Detail.....	24
5.3 Target Filter.....	24
5.4 Plotter	24
6. Message Send/Receive	26
6.1 New Message	27
6.2 Sent Message.....	28
6.3 Received Message	29
6.4 LR Message.....	31

6.5 Retry Times.....	31
7. View Own Data.....	33
8. Voyage Setting.....	34
8.1 Voyage Data.....	34
8.1.1 ETA [UTC].....	35
8.1.2 Destination.....	35
8.1.3 Draught.....	35
8.1.4 NAV Status.....	35
8.1.5 Persons.....	36
8.1.6 Cargo Type.....	36
8.1.7 Save the Settings.....	37
8.2 CPA/TCPA Setting.....	37
8.3 Dangerous List.....	38
8.4 MOB List.....	38
8.5 Destination List.....	39
8.6 Setting.....	40
8.6.1 Silent Mode.....	40
8.6.2 Locating Device.....	41
9. System Setting.....	42
9.1 Language.....	42
9.2 Audio.....	42
9.3 Display.....	43
9.4 Date & Time.....	43
9.5 LR Interrogation.....	44
9.6 LR Broadcast.....	45
9.7 Region Management.....	45
10. Diagnostics.....	49
10.1 Program Version.....	49
10.2 Device Test.....	49
10.2.1 Key Test.....	49
10.2.2 LCD Check.....	50
10.3 Alert.....	50
10.4 Sensor Status.....	52
10.5 Event Log.....	52
11. Maintenance.....	53
11.1 Set Own Static Data.....	54
11.2 Set I/O Baudrate.....	56
11.3 AIS/GNSS Communication Monitor.....	56
11.4 Restore Factory Setting.....	57
11.5 Advanced.....	57
12. Check & Troubleshooting.....	58
12.1 Periodic Check.....	58
12.2 Troubleshooting.....	58
Appendix 1 List of Ship Type.....	59
Appendix 2 Abbreviations.....	60
Appendix 3 VHF Frequency Table.....	62
Appendix 4 Menu Tree.....	63
Appendix 5 Alerts.....	64
Appendix 6 Installation Drawings.....	66

1. General

1.1 What's AIS

The Automatic Identification System (AIS) is a Very High Frequency (VHF) radio broadcasting system that transfers packets of data over the VHF data link (VDL) and enables AIS-equipped vessels and shore-based stations to exchange identification information and navigational data. Ships with AIS transponders continually transmit their ID, position, course, speed and other data to all nearby ships and shore stations.

Such information can greatly aid in situational awareness and provide a means to assist in collision avoidance.

AIS equipment is standardized by ITU, IEC, IALA and IMO and is subject to approval by a certification body.

The following AIS devices have been developed for variant applications.

AIS Class A:

mandated by the IMO for vessels of 300 gross tonnage and upwards engaged on international voyages, cargo ships of 500 gross tonnage and upwards, as well as passenger ships engaged on domestic voyages. The output power typically is 12.5W.

AIS Class B:

provides limited functionality and is intended for non-SOLAS commercial vessels and recreational vessels. Output power typically is 2W.

AIS Base Station:

is provided by aids-to-navigation authorities to enable the ship-to-shore / shore-to-ship transmission of information. Networked AIS Base Stations can assist in providing overall maritime domain awareness.

AIS AtoN (Aids to Navigation):

provides an opportunity to transmit the position and status of buoys and lights through the same VDL, which can then show up on AIS-ready devices within the range.

AIS Locating Device:

AIS Locating Device can be used to assist in determining the location of a vessel in distress. It is typically used on life rafts. There are three types of locating devices: AIS-SART, AIS MOB and AIS EPIRB.

AIS on Search and Rescue (SAR) Aircraft:

used on airplanes and helicopters to assist search and rescue operations.

1.2 Ship's Data

The data below is related to AIS class A.

- Static Data
 - Ship's Name and Call Sign (when available)
 - MMSI (Maritime Mobile Service Identification)
 - IMO Number (when available)
 - Length and Beam
 - Ship's Type










- Dynamic Data
 - Ship's Position
 - UTC
 - Course Over Ground (COG)
 - Speed Over Ground (SOG)
 - Heading (when available)
 - Navigation Status
 - Rate of Turn (when available)

- Voyage Related Data
 - Draught
 - Cargo Type
 - Destination and ETA

- Short Safety Related Message, Text Message

1.3 AIS Target Display

Different AIS targets will be displayed in different letters or icons as shown below:

Target	Target list display/Icon display
AIS Class A	
AIS Class B	
AIS base station	
AIS AtoN - Physical (only basic symbol displayed)	
AIS AtoN - Virtual (only basic symbol displayed)	
Locating Device (only basic symbol displayed)	
AIS SAR aircraft – fixed wing	
AIS SAR aircraft – helicopter	
Target with unread message	

1.4 Special Features

The NSI-1000 is an AIS Class A device.

It complies with IMO A.694 (17), MSC.74 (69), MSC.302 (87), ITU-R M.1371-5, IEC 61993-2, IEC 62923-1, IEC 62923-2, IEC 61162 series and IEC 60945.

NSI-1000 has below special features:

- ① GPS, BDS, GLONASS positioning mode.
- ② Audible signal when receiving AIS-SART, AIS MOB and AIS EPIRB targets.
- ③ AIS-MOB list can be established for own ship.
- ④ Transmitting power will be reduced to 1W for tanker while in a state of moored.
- ⑤ A special power supply board used in transponder with a wide-range power input and isolated input/output from grounding.
- ⑥ A color display is used as MKD, with touch-screen operation.
- ⑦ Special terminal block is used for easy and reliable connection.

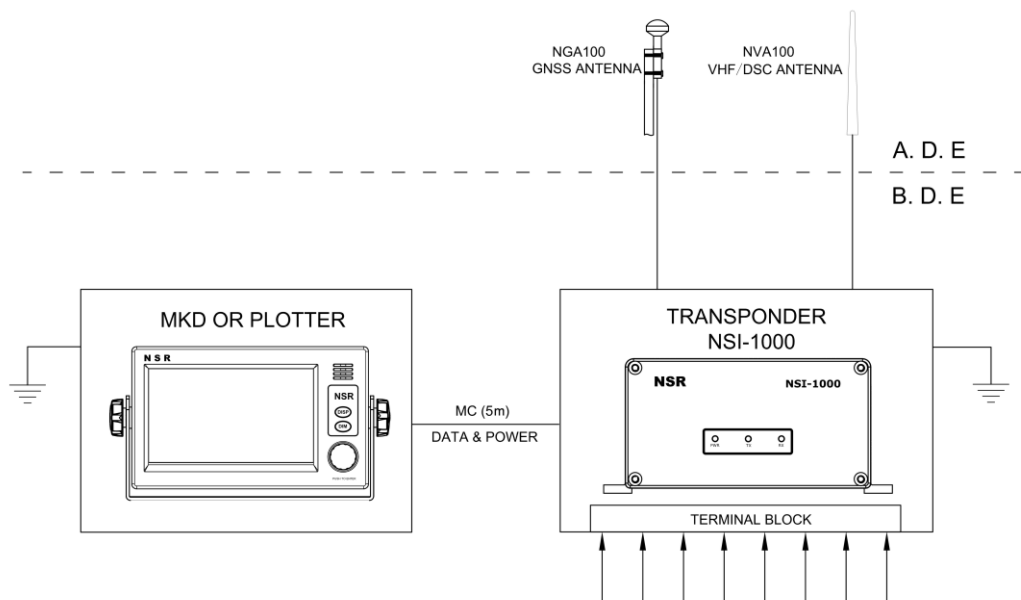
1.5 System Composition

The NSI-1000 system consists of an AIS transponder, a display unit (MKD), VHF and GNSS antennas and related accessories.

AIS transponder comprises a transmitter, two TDMA receivers, a DSC receiver, a communication processor, a built-in GNSS receiver, and a DC / DC power supply module and interface circuits.

The display unit (MKD) includes an LCD module, a keyboard, processing circuits, and DC / DC power module.

The main structure of the system is as follows:



The equipment may be connected with the following external devices:

- Input from an external GNSS receiver
- Input from Gyrocompass
- Output to ECS/ECDIS
- Output to Radar
- Output to VDR
- The remote communication terminal (such as INMARSAT)

1.6 Equipment List

In the package of NSI-1000, the following items are included:

Type	Part No.	Description	Remarks
STANDARD			
NSI-1000	N991910	AIS Transponder	
NSI-1000D		MKD	Color display with touch screen operation
NGA100		GNSS Antenna	Cable length=10m or 20m
		Mount Pole for NGA100	
		Mount Bends for NGA100	2 pcs
5-wire		Data Cable	5m
2-wire		Power Cable	2m
		Accessories	
		User Manual	
OPTIONS			
NVA100	N582011	VHF Antenna	
RG214	N130102	RF Cable	
NPP100	N995503	Pilot Plug	
NES-3010	N992231	Chart Plotter	
PS-10	N993410	PSU	24V/10A
NFB700A	N561070	Flush Mount Bracket	For NSI-1000D
NFB100	N561010	Flush Mount Bracket	For NES-3010

2. Specifications

2.1 VHF Transceiver

Item	Description
Frequency Range	156.025 ~ 162.025MHz
Default Channel	AIS 1, AIS 2, CH70 (DSC)
Channel Bandwidth	25kHz
Modulation	GMSK/FM
Data Rate	9600 bps
Number of AIS Transmitter	1
Number of AIS Receiver	2
Number of DSC Receiver	1
Output Power	12.5W/1W
Receiver Sensitivity	better than-107dBm @20% PER

2.2 DSC Receiver

Item	Description
Frequency	156.525MHz
Channel Bandwidth	25kHz
Modulation	FSK
Receiver Sensitivity	better than-107dBm @BER< 10 ⁻²

2.3 GNSS Receiver

Item	Specifications
Receiving System	GPS, BDS, GLONASS
Channel Number	72
Accuracy	< 5m (2D RMS)
Position Fixing Time	Cold start 45s
Sensitivity (Acquisition)	-147dBm
Sensitivity (Tracking)	-164dBm

2.4 MKD

Item	Description
LCD Size	7-inch color LCD, touch screen operation
Power Supply	DC24V
Nominal Viewing Distance	60 cm

2.5 Sensor and Interface

Item	Specification
Sensor 1/2/3	IEC61162-1/ 61162-2 Input: DTM, GNS, GLL, GGA, RMC, VBW, VTG, OSD, HDT, GBS, ROT
PILOT/BAM	IEC61162-1/61162-2 Input: VSD, SSD, ABM, BBM, ACA, ACK, AIR, AIQ, ACN, LRF, LRI, SPW Output: VDM, VDO, ABK, ACA, ALR, TXT, LR1, LR2, LR3, LRF, ALF, ALC, EPV
DGNSS	IEC61162-1/61162-2 Input: DTM, GBS, GSA, GLL, GNS, HDT, RMC, ROT, VBW, VTG, HDG, THS
ECDIS/BAM	IEC61162-1/61162-2 Input: VSD, SSD, ABM, BBM, ACA, ACK, AIQ, LRF, LRI, ACN, EPV, SPW Output: VDM, VDO, ABK, ACA, ALR, TXT, LR1, LR2, LR3, LRF, ALF, ALC, EPV
LONG RANGE	IEC61162-1/61162-2 Input: LRF, LRI Output: LR1, LR2, LR3, LRF
Alert Contact	Relay Contact The NSI-1000 requires that an alert output (relay) be connected to an audible alert device or the ship's alert system.
RF Connector	PL259 (VHF antenna) TNC (GNSS antenna)

2.6 Power Supply

Item	Specification
Operation Voltage	DC24V, range DC18V ~ 38V
Operation Current	1.0A (when receiving), 3.0A (when transmitting)

2.7 Environmental Condition

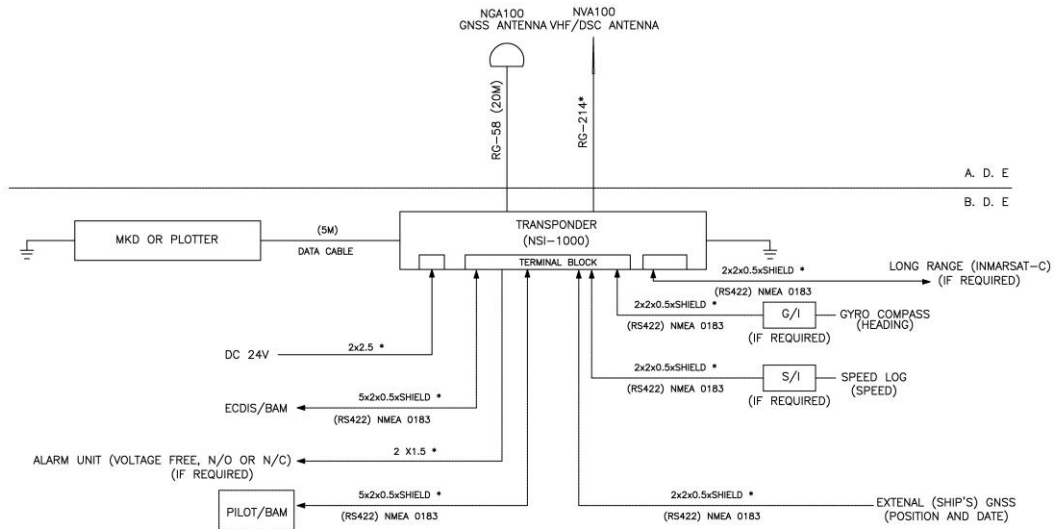
Item	Specification
Operation Temperature	- Outdoor (GNSS and VHF Antenna): -40°C ~ +55°C - Indoor (Transponder, MKD): -15°C ~ +55°C
Relative Humidity	95% at 40°C
Compass Safe Distance	- Standard Compass: 0.30m, Steering Compass: 0.15m (Transponder) - Standard Compass: 0.35m, Steering Compass: 0.25m (MKD)
IP Grade	- Outdoor (GNSS and VHF Antenna): IP66 - Indoor (Transponder, MKD): IP22

2.8 Physical

Item	Specification
Size	81(H) × 174(W) × 257(D) mm (Transponder) 145(H) × 264(W) × 83(D) mm (7-inch MKD)
Weight	2.3kg (Transponder), 1.25kg (7-inch MKD)

3. Installation

The following is the NSI-1000 system diagram.



Note: "*" marked cables to be supplied by customer.

3.1 GNSS Antenna Installation

Refer to the attached diagram when installing the GNSS antenna. The following instructions are helpful:

- Keep the antenna away from the beam sector of the radar transmission. The radar beam could damage the GNSS antenna or affect the reception.
- Keep the antenna open in the direction to the sky. The obstacle, such as the mast, can block the signal or prolong the searching time.
- Keep the antenna as high as possible. The sea water could affect the reception if iced.

The coaxial cable between the transponder and the GNSS antenna will be supplied with 10-20m in length as standard. Watertight treatment is required for outdoor connecting.

3.2 VHF Antenna Installation

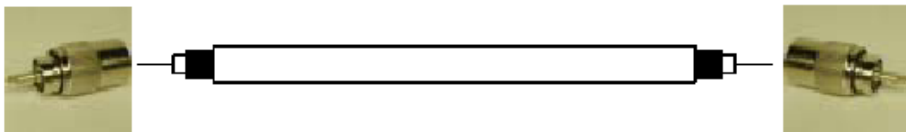
It's very important to choose a proper location for the VHF antenna, as an object close to the antenna could affect receiving sensitivity.

The following instructions are helpful:

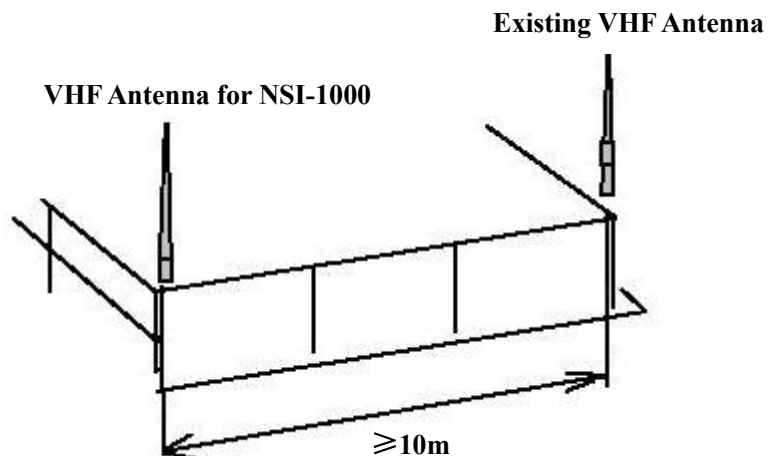
- The antenna should be kept at least 0.5m from a vertical object to avoid RF reflection.
- The antenna should be kept at least 3m from other high-power radiators, such as the radar antenna.
- Two VHF antennas should not be installed at the same height. The AIS VHF antenna can be installed either under or above the existing VHF antenna. The distance between should be more than 2.8m. If two antennas have to be installed at the same height, the distance between them should be more than 10m.

For the cabling, please refer to the suggestions below:

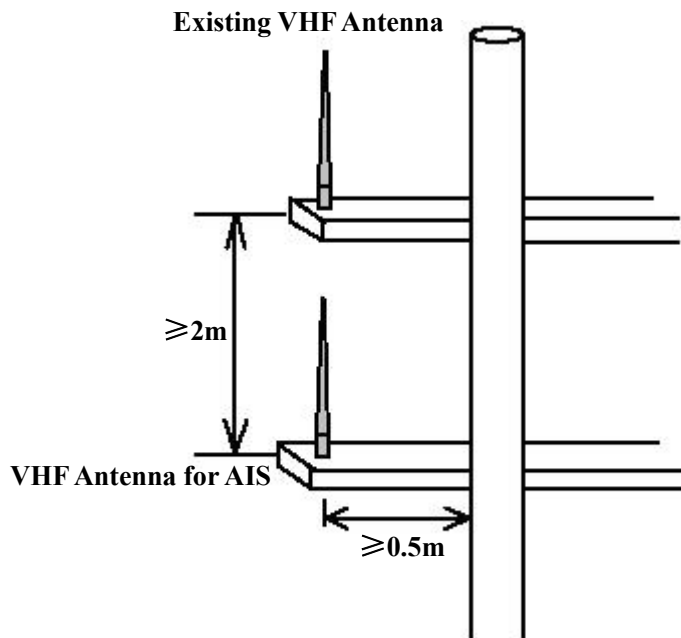
- The shorter the cable, the less the loss. The low-loss cable is recommended if the cable is longer than 10m.
- Watertight treatment is required for outdoor connecting.
- The RF cable should be kept at least 10cm from the power cable. The cable cross should be avoided.



- ① Two antennas are installed at the same height.



- ② Two antennas are installed in the same vertical line.



3.3 Transponder Installation

Four screws are supplied to mount the transponder. The transponder can be installed either on the table or on the wall.

Observe the compass safe distance to prevent deviation of a magnetic compass.

Note:

Care must be taken when mounting the transponder to ensure that there is sufficient space for cables and connectors. Especially, sharp bending of the RF cable must be avoided.

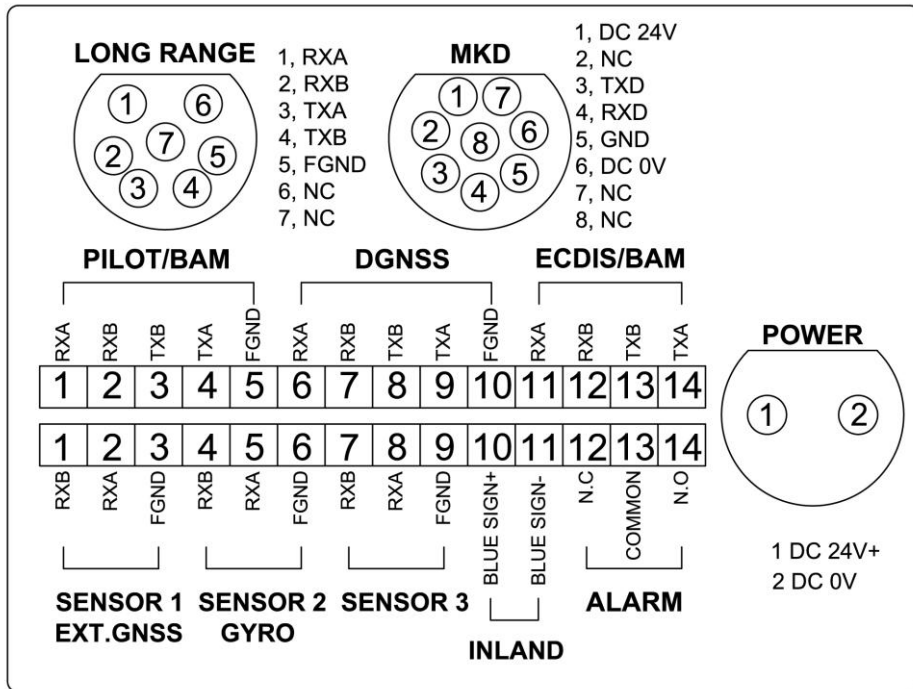
3.4 MKD Installation

The MKD may be mounted in a flush-mount type or a bulkhead type.

Observe the compass safe distance to prevent deviation of a magnetic compass.

3.5 Cabling

Please refer to diagram below for wiring.



3.5.1 Power Connection

PIN NO	DESCRIPTION
1	DC 24V (+)
2	0V

The power cable with a rated capacity of 10A should be used. The pin definition for the connector is shown above. Normally, a cable of 2m will be supplied in the packing box.

3.5.2 MKD Connection

An 8-pin connector is used for the connection to the MKD (AIS display unit).

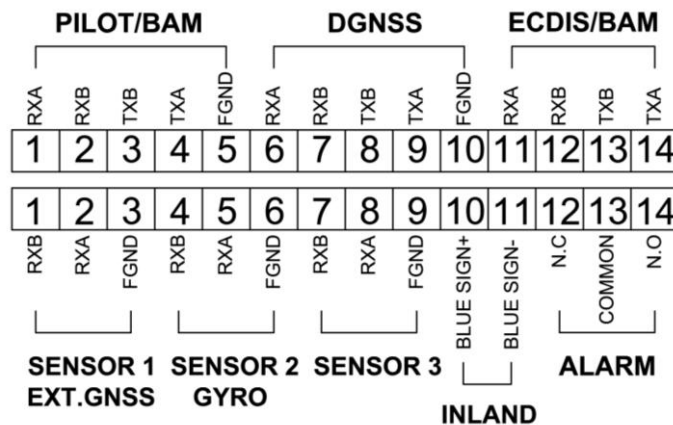
A shield cable should be used, and the length should be less than 20m.

Normally, a cable of 5m will be supplied in the packing box.

PIN NO	DESCRIPTION
1	24V
2	NC
3	TXD
4	RXD
5	GND
6	0V
7	NC
8	NC

3.5.3 I/O Connection

There are two terminal blocks for I/O connection. Each block has 14 pins.



Pin terminals and back tubes are supplied for connecting.

3.5.3.1 Connection to Gyro Compass

The input of the Gyro Compass can be connected to SENSOR 2. If the digital HDT signal is not available from the gyro compass, a special gyro interface is needed to convert the analog signal into a digital signal.

The default baud rate of this port is 4800bps.

3.5.3.2 Connection to External GNSS

The input of the External GNSS can be connected to SENSOR 1.

The default baud rate of this port is 4800bps.

3.5.3.3 Connection to Pilot Plug

An optional Pilot Plug NPP100 can be connected to the port as shown below.

NSI-1000 TRANSPONDER		NPP100 PILOT PLUG	
1	RXA	3	RXA
2	RXB	4	RXB
3	TXB	2	TXB
4	TXA	1	TXA
5	FGND		

This port can also be connected to ECDIS, Radar, VDR, or BAM.

The default baud rate of this port is 38400bps.

3.5.3.4 Connection to DGNSS

This port can be connected to DGNSS.

The default baud rate of this port is 4800bps.

3.5.3.5 Connection to ECDIS

This port can be connected to ECDIS, Radar, VDR, or BAM.

The default baud rate of this port is 38400bps.

3.5.3.6 Alert Interface

There are two alert interfaces (IEC 61162-2) for BAM, also for legacy alert.

INTERFACE	PIN NO	DESCRIPTION	TYPE
PILOT/BAM	1	RXA	IEC 61162-2
	2	RXB	
	3	TXB	IEC 61162-2
	4	TXA	
ECDIS/BAM	11	RXA	IEC 61162-2
	12	RXB	
	13	TXB	IEC 61162-2
	14	TXA	

4. Basic Operation

4.1 Power ON/OFF

The power switch on the rear panel of the transponder can power off both the transponder and MKD.

When an internal fault appears, turn off the transponder immediately.

Causes should be identified prior to re-opening the power switch.

When the power is turned on, the screen will display the TARGET LIST as follows:

✉ 4		✓		[TARGET LIST]		EPFS PWR TX EXT:GB 12W RX	
RNG	BRG	MMSI	AGE	NAME	1/304		
▶10.1	300°	970000000	0'	AIS SART	⊗	↑	MENU
10.8	165°	972005555	0'	MOB AIS	⊗	⋮	OWN
18.8	201°	974001111	0'	EPIRB AIS	⊗	⋮	VIEW
0.00	40°	412666004	0'	A4	⚠	⋮	FILTER
0.00	40°	413000000	0'	JTWPJ	⚠	⋮	VOYAGE
0.00	2°	412666003	0'	A3	⚠	⋮	
0.00	7°	512666024	1'	A24	⚠	⋮	
0.02	9°	412666006	0'	A6	⚠	↓	
OWN		31°26.9261' N		120°31.6248' E		0.0kn 121.5°U2025-06-30 09:05:27	

The NSI-1000 should be kept in normal operation while underway or at anchor. However, the captain may decide to set silent mode when he estimates that the safety or security is threatened by AIS operation.

The equipment will be operational within 2 minutes after switching on and transmit own ship static data. These data are retransmitted every 6 minutes or whenever the data has been amended and on request. The static data provided by the AIS includes MMSI, IMO number, call sign & name, length and beam, and type of ship.

In addition to static data, the ship's dynamic data is also transmitted. The dynamic data provided by the AIS includes ship's position, time in UTC, COG, SOG, heading, navigational status, and rate of turn. These data are transmitted depending on speed and course alteration as table below.

The Reporting Rates for Dynamic Data on Autonomous Mode

Ship's Status	Reporting Interval
At anchor or moored and not moving faster than 3 kt	3 min
At anchor or moored and moving faster than 3 kt	10 s
A speed of between 0~14 kt	10 s
A speed of between 0~14 kt and changing course	3 1/3 s
A speed of between 14~23 kt	6 s
A speed of between 14~23 kt and changing course	2 s
A speed of greater than 23 kt	2 s
A speed of greater than 23 kt and changing course	2 s

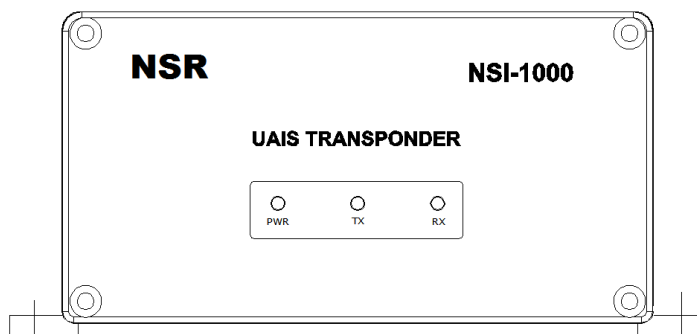
The voyage-related data, such as the ship's draught, hazardous cargo, destination and ETA is transmitted every 6 minutes.

After switching on of transponder and MKD, the NSI-1000 starts receiving data from AIS-equipped ships and target data appear gradually on the screen as soon as the data have been received for the first time.

Note:

If no navigation sensor is installed or a sensor has failed, the AIS will transmit automatically with "Not available".

4.2 Indicators on Transponder Panel



- **PWR:** The green light will be on when the transponder is powered on.
- **TX:** The red light will flash once when the transponder transmits once.
- **RX:** The green light will flash once when one AIS signal is received.

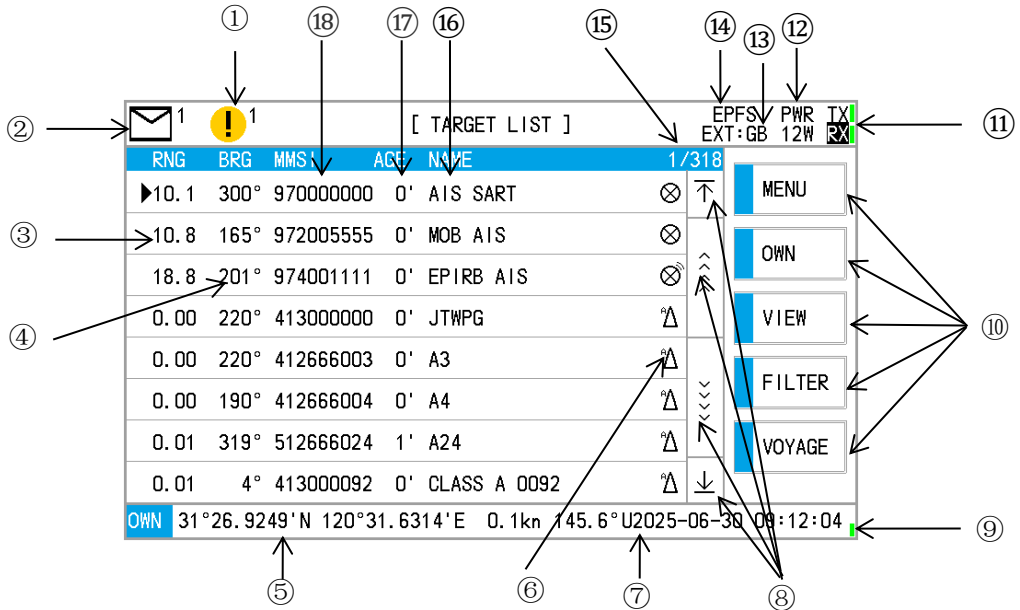
4.3 Key Description









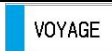


Panel Button	Description
	PUSH TO ENTER knob. Revolving around to select an item, Press down to confirm the selection or input.
	Switch button. Switching between TARGET LIST and PLOTTER; Quickly return to the main screen. <i>Note: If you modify data in a submenu and then press this key to return directly to the main menu, the modified data will not be saved. Please confirm the settings before exiting.</i>
	Brightness key to control LCD brightness.
Touch-screen Button	Description
	Enter the menu.
	Quickly view own ship data.
	View the details of the selected target in the TARGET LIST.
	Filter the target not selected.
	Set voyage settings

4.4 Screen Components

- Target Data Screen



No	Item	Symbol	Meaning
①	Alert icon	1	The topmost of the alert list, and the total number of alerts
②	Messages received	1	The number of unread messages
③	Distance from own ship	RNG	
④	Bearing in north up display	BRG	
⑤	Own ship data	OWN	Position, Speed, COG Normal color: Normal data Yellow mark: Doubtful data Red mark: Invalid data Red ----: Lost data
⑥	Target type		Refer to Section 1.3
⑦	Time Mode	U / L	UTC time / Local time Normal color: Synchronous time Yellow mark: Doubtful time Red ----: Not available

No	Item	Symbol	Meaning
⑧	Page turning		Top, up, down, end
⑨	Run symbol		Running symbol, shows up and down
⑩	Function buttons		Enter the menu
			Quickly view own ship status
			View the details of the target in the TARGET LIST
			Set filter, type not selected will not show
			VOYAGE settings
⑪	TX/RX status		Green: TX normal, RX normal
			Red: TX abnormal, RX abnormal
⑫	TX power	12W/1W/OFF	Current output power
⑬	Positioning mode	-- /GP/GL/GN/LC /GB/IN/GA	-- Undefined, GP-GPS, GL-GLONASS, GN-GNSS, LC-Loran C, GB-BDS, IN-INS, GA-Galileo
⑭	EPFS	EXT	External EPFS in use
		INT	Internal EPFS in use
		---	Both EPFS sources are invalid
⑮	Target number		Total number of targets
⑯	Ship's name		Ship's name and target type icon
⑰	AGE		Time elapsed
⑱	MMSI		Target MMSI

Note: For sensor information ⑤, ⑦

Normal color: Normal data

Yellow mark: Doubtful data

Red mark: Invalid data

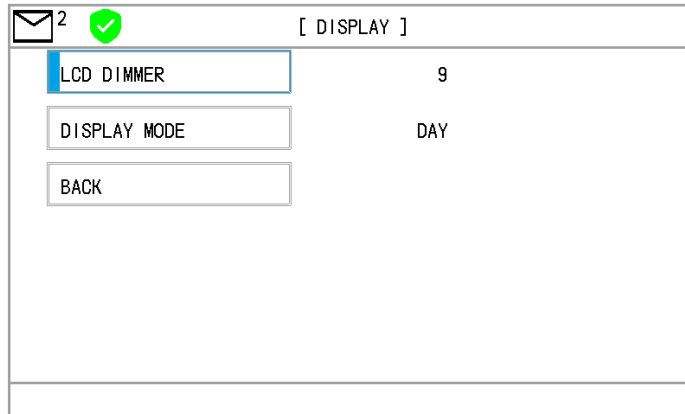
Red ----: Lost data

4.5 Brightness Adjustment

There are two ways to adjust the brightness of the MKD LCD.

- ① Adjust the brightness in the [SYSTEM SETTING] - [DISPLAY].

Click [LCD DIMMER] or rotate the knob to adjust the brightness.



- ② Press **DIM** button to adjust the brightness.

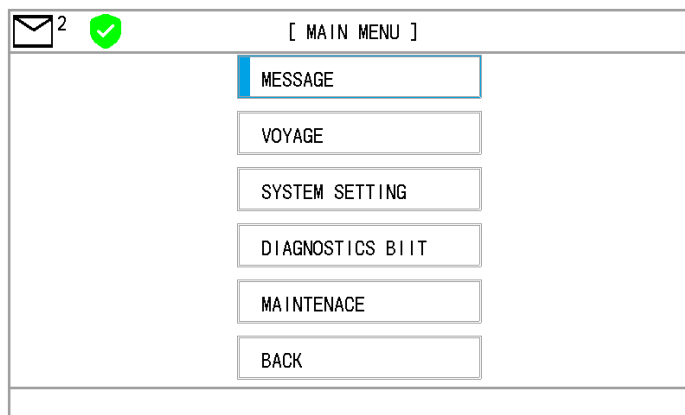
Note:

When the power is turned off, the last status of brightness and contrast is stored. Therefore, when the power is turned on, the screen will display with the last brightness before powered off.

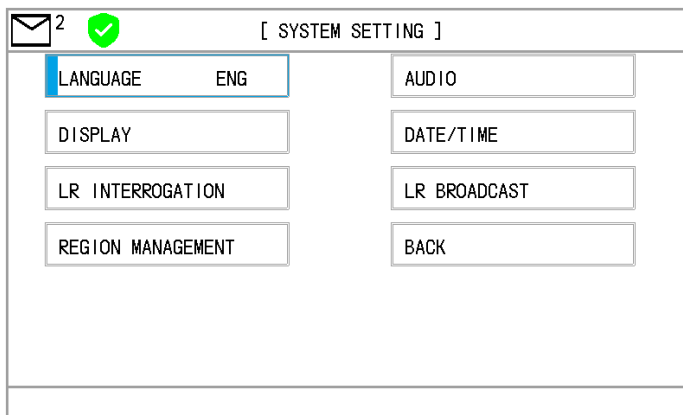
4.6 Basic Menu Operation

Refer to Appendix 4 for the menu tree.


- ① Click **MENU** to enter the main menu.




- ② To select a desired sub-menu, click the desired item or rotate the knob to select a desired item. The following screen is in case that [SYSTEM SETTING] has been selected to set system configuration from the main menu.

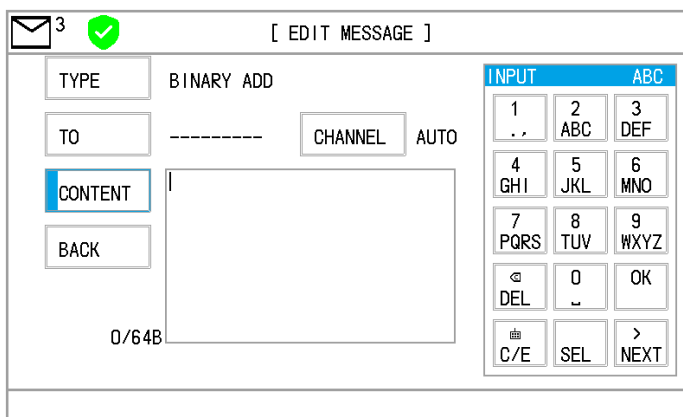


- ③ Depending on the sub-menu selected, the knob key is used to move the cursor to enter the data and push the knob to alternate from a current setting, such as "ON/OFF", "South/North", "East/West", "Yes/No", etc.


- ④ Click [BACK] or press  key to return to a higher-level menu or the main menu from a current sub-menu.

4.7 Enter Characters





Click an appropriate key consecutively until a number, a letter or a symbol is got. Click  to complete the input.







The current input mode is displayed in the upper right corner, such as  or . Click

 to select input mode.

4.8 Multi Pages


Some of sub-menus can be more than 1 page. In this case, it is indicated with , , , 

marks the screen to prompt the existence of a previous or next page.

Click , ,  or  to move to an appropriate page.



[TARGET LIST]						EPFS	PWR	TX
						EXT:GB	12W	RX
RNG	BRG	MMSI	AGE	NAME		1 / 299		
▶10.1	300°	970000000	0'	AIS SART	⊗	↑	MENU	
10.8	165°	972005555	0'	MOB AIS	⊗	↑	OWN	
18.8	201°	974001111	0'	EPIRB AIS	⊗	↑	VIEW	
0.00	308°	412666003	0'		⊗	↑	FILTER	
0.00	308°	413000000	0'		⊗	↑	VOYAGE	
0.00	308°	412666004	0'		⊗	↑		
0.01	197°	412666005	0'		⊗	↑		
0.01	126°	412666002	0'		⊗	↑		
OWN 31°26.9328'N 120°31.6107'E 0.1kn 326.3°U2025-07-01 00:27:44								

Top page

Click  to move to the top page.


[TARGET LIST]						EPFS	PWR	TX
						EXT:GB	12W	RX
RNG	BRG	MMSI	AGE	NAME		17 / 733		
0.04	53°	994121927	2'	ZHANJIANGYXPFCFENG	◇	↑	MENU	
0.14	331°	412000005	0'	BASE STATION	◇	↑	OWN	
0.27	107°	992812340	0'		⊗	↑	VIEW	
0.61	252°	005000171	0'	CLASS B-CS 0171	⊗	↑	FILTER	
1.13	269°	412000009	0'	BASE STATION	◇	↑	VOYAGE	
3.65	290°	413000010	1'	CLASS A 0010	⊗	↑		
3.77	121°	005000130	1'	CLASS B-CS 0130	⊗	↑		
▶4.34	230°	990000008	2'	ATN 0008	◇	↑		
OWN 31°26.9201'N 120°31.6254'E 0.0kn 000.0° U2025-05-29 07:11:49								

Middle page

Click  /  or rotate the knob to move to next page or a previous page. Click the target item or push the knob key to check the ship's information.

[TARGET LIST]						EPFS	PWR	TX
						EXT:GB	12W	RX
RNG	BRG	MMSI	AGE	NAME		734 / 734		
741	69°	004000021	0'	CLASS B-SO 0021	⊗	↑	MENU	
757	76°	005000181	0'	CLASS B-CS 0181	⊗	↑	OWN	
758	343°	005000016	0'	CLASS B-CS 0016	⊗	↑	VIEW	
760	46°	004000061	0'	CLASS B-SO 0061	⊗	↑	FILTER	
762	137°	005000211	0'	CLASS B-CS 0211	⊗	↑	VOYAGE	
765	136°	005000206	0'	CLASS B-CS 0206	⊗	↑		
776	195°	005000002	0'	CLASS B-CS 0002	⊗	↑		
▶---	---	999992209	0'	ATON 2209	◇	↑		
OWN 31°26.9196'N 120°31.6251'E 0.0kn 000.0° U2025-05-29 07:12:10								

Last page

Click  to move to the last page.

5. AIS Target Display



5.1 Target List

As an initial screen upon startup, the target list is displayed to show vessels presented near the own ship and equipped with AIS equipment.

RNG	BRG	MMSI	AGE	NAME	1/FULL	LD Full	DR Full	EPFS EXT:GB	PWR 1W	TX RX
▶0.36	242°	970000012	1'	AIS SART	⊗	↑				
1.66	110°	970000017	1'	AIS SART	⊗					
3.02	168°	970000029	1'	AIS SART	⊗	↑				
3.31	97°	970000005	1'	AIS SART	⊗					
3.61	226°	970000008	1'	AIS SART	⊗					
6.61	312°	970000001	1'	AIS SART	⊗					
6.62	277°	970000013	1'	AIS SART	⊗					
10.7	105°	970000025	1'	AIS SART	⊗	↓				
OWN	31°26.9082'N 120°31.6122'E 0.1kn 277.2° U 2025-06-17 05:15:04									

On this screen, all targets are displayed with their data received via AIS, and the ships can be listed in the order of RNG.

The target list can store up to 1000 AIS targets, including at least 20 locating devices and 20 data reports. When the number of targets exceeds 95% (950), the color of the total number will become yellow. When the number of targets exceeds 100% (1000), the total number will show as “FULL”. After reaching 100%, the farthest target will be replaced with a new target. For some special situations, action as below:

Situation (FULL)	New Target	Action
Locating device ≥ 20	Any target	Replace the farthest Locating device show  on top.
Data Report ≥ 20	Any target	Replace the farthest Data Report show  on top.
Locating device < 20	Locating device	Replace the farthest normal target
Data Report < 20	Data Report	Replace the farthest normal target

AIS data reports include AIS AtoNs, AIS SAR aircraft and AIS base stations.

To get more detailed data for a specified target, select an appropriate target on the target data screen by clicking the target item.

5.2 Target Detail

Click [VIEW] or double-click the target item to check the information of the target.


2 [CLASS A]		EPFS PWR TX EXT:GB 12W RX
BASIC		VOYAGE DRAUGHT: 01.7m ETA : 04/03 13:20 BACK
MMSI: 258000101 NAME: TRAWLER RNG : 71.5NM BRG : 90°		DEST : TROMSOE CARGO : 0-ALL SHIP OF THIS TYPE PWR-DRIVEN VESSEL/TOWING ASTERN
STATIC		DYNAMIC
CALL: ABCD IMO : 91628226 LEN : 25m BEAM: 7m TYPE: 70-CARGO SHIP VENDOR: ----- DTE: 0-Available		LAT : 31°26.4154'N LON : 121°55.2581'E SOG : 10.0kn COG : 105.9° ROT : 0°/min HDG : 110° QLTY: POSITION <=10m. RAIM UNUSED
OWN 31°26.9109'N 120°31.6147'E 0.1kn 336.2° U 2025-06-19 12:44:45		

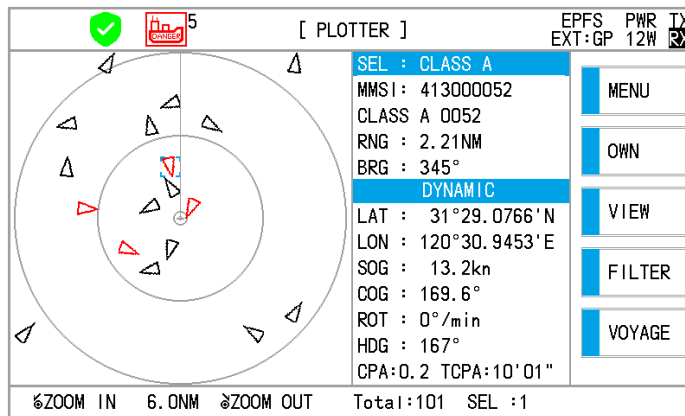
5.3 Target Filter

Click [FILTER] to enter the target filter screen. Click to check the target type you want to display in the list.

2 [FILTER]		
<input checked="" type="checkbox"/> ATON PHYSICAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ATON VIRTUAL
<input checked="" type="checkbox"/> ATON MOBILE PHYSICAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> ATON MOBILE VIRTUAL
<input checked="" type="checkbox"/> ATON SYNTHETIC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> SAR AIRCRAFT
<input checked="" type="checkbox"/> BASE STATION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> LOCATING DEVICE
<input type="checkbox"/> BACK		


5.4 Plotter

By pressing , the plotter screen is displayed to show targets with heading direction and relative position to the own ship as follows.



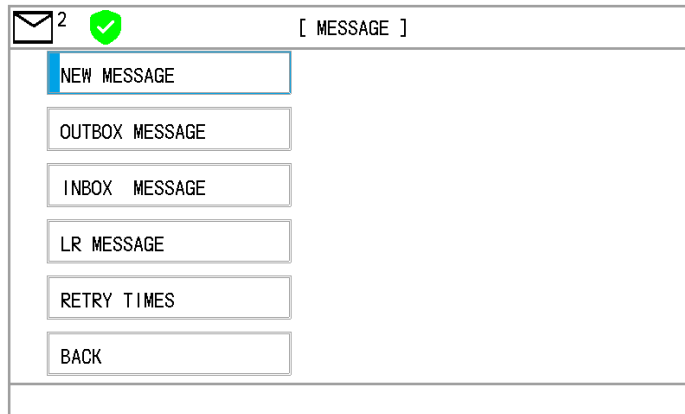
The targets in the north up plotter screen appear at the correct positions as sharply pointed triangles. The own ship symbol is always situated at the center of the plotter screen.

Unless any ship or a menu is being selected, the data for the own ship, such as the MMSI number, ship's position, SOG, COG, ROT, and heading, are shown on the screen.

- ① Rotate the knob to change the display range of whose value corresponds to the radius of the outer range ring. The available ranges are 0.25, 0.5, 0.75, 1.5, 3, 6, 12, 24 and 32nm in nautical miles.
- ② Click a target on the plotter screen, the target closest to the own ship is toggled with an additional square, and the data of the target are shown on the screen as following figure. The target data may include MMSI number, ship's position, SOG, COG, ROT, heading, CPA, TCPA.
- ③ Select a next ship on the plotter screen, repeat procedure ②.
- ④ To return to the main menu, click  key or to change over to the target list screen.

6. Message Send/Receive

The equipment can send and receive messages via VHF channels. Broadcasting or sending to a specific MMSI can both be done.



① NEW MESSAGE

The function is to create a message by selecting method (Broadcast or Addressed), type (Text, Safety) and channel (Ch-A, Ch-B, Ch-A&B, Auto).

② OUTBOX MESSAGE

The function is to check the transmitted messages with the transmitted time and date, message type, casting type, MMSI number, and show the message content when a specific message is selected.

③ INBOX MESSAGE

When a message is received, the equipment displays an icon indicating that an unread message has been received. Received messages are stored in [INBOX MESSAGE].

NSI-1000 can store up to:

- 20 Safety-related addressed messages;
- 20 Safety-related broadcast messages;
- 20 Locating device messages;
- 20 AtoN messages;
- 20 Binary addressed messages;
- 20 Binary broadcast messages;
- 20 retained messages (Only Safety-related messages can be retained).

But the equipment cannot retain messages without a power supply.

The oldest message of the same type will be replaced after reaching the maximum.

④ LR MESSAGE

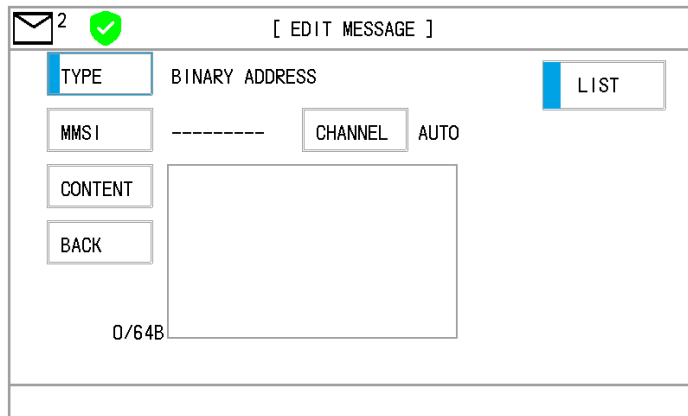
The function is to check and reply to a request by a long-range message.

⑤ RETRY TIMES

The function is to set the retry times when sending a message.

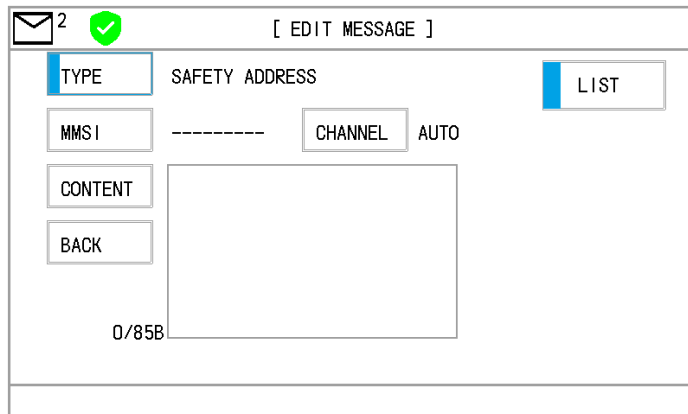
6.1 New Message

- ① Select the [NEW MESSAGE] to create a new message.



The screenshot shows a screen titled "[EDIT MESSAGE]". At the top left, there is a mail icon with the number "2" and a green checkmark. Below this, the "TYPE" field is highlighted with a blue border. To its right is the label "BINARY ADDRESS". Further right is a "LIST" button. Below the "TYPE" field are three buttons: "MMSI", "CHANNEL", and "AUTO". Below these is a large "CONTENT" text area. At the bottom left of the content area, it says "0/64B". A "BACK" button is located to the left of the content area.

- ② Move the cursor to the “**TYPE**” by the PUSH TO ENTER knob, or click “**TYPE**” directly.

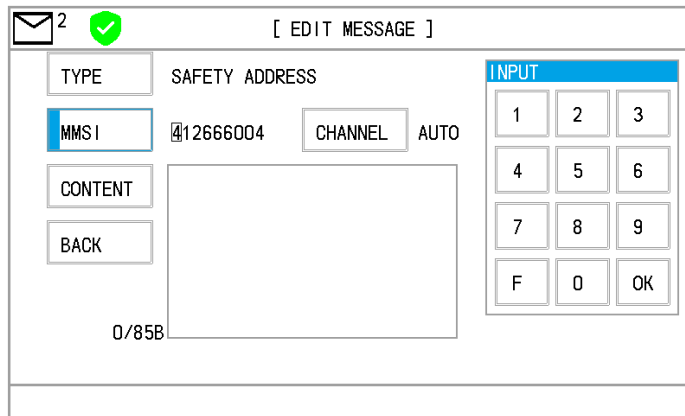


This screenshot is identical to the previous one, but the label next to the highlighted "TYPE" field is now "SAFETY ADDRESS". The "CONTENT" area now shows "0/85B".


- ③ Click until a desired type has appeared. Totally, there are four types as below:

Message Type	Description
BINARY BROADCAST	Binary broadcast message
BINARY ADDRESS	Binary addressed message
SAFETY BROADCAST	Safety-related broadcast message
SAFETY ADDRESS	Safety-related addressed message

- ④ When **BINARY ADDRESS** or **SAFETY ADDRESS** is chosen, MMSI may be selected from the target list or entered on the soft keypad.



The screenshot shows the 'EDIT MESSAGE' interface. At the top, there is a mail icon with a '2' and a green checkmark, followed by '[EDIT MESSAGE]'. Below this, the 'TYPE' is set to 'SAFETY ADDRESS'. The 'MMSI' field is highlighted in blue and contains the number '12666004'. To the right of the MMSI field are 'CHANNEL' and 'AUTO' options. A large empty text area is labeled 'CONTENT'. At the bottom left, there is a 'BACK' button and a character count '0/85B'. On the right side, there is a numeric keypad with buttons for digits 1-9, 0, and 'OK', along with an 'F' button.

- ⑤ After selection, the assigned MMSI number will appear.
- ⑥ To select for using channels, move the cursor to the “**CHANNEL**” by rotating the knob and then push to enter until a desired one among “**A**”, “**B**”, “**A&B**” and “**AUTO**” has appeared.
- ⑦ To create or edit a message, move the cursor to the text area of “**CONTENT**” by rotating the knob and then push to enter or click “**CONTENT**” directly.
- ⑧ Enter the characters by keypad.
- ⑨ When ready, click  to send the message.

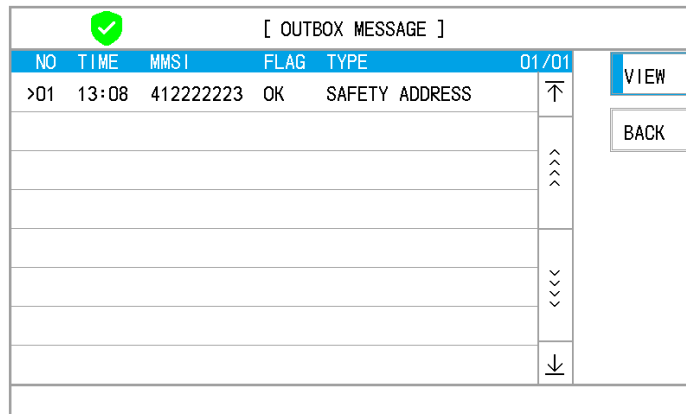
Hereupon, the screen will return to the MESSAGE menu.

Maximum Number of Characters for a Single Message

Message Type	Max. Character
BINARY BROADCAST	68
BINARY ADDRESS	64
SAFETY BROADCAST	90
SAFETY ADDRESS	85

6.2 Sent Message

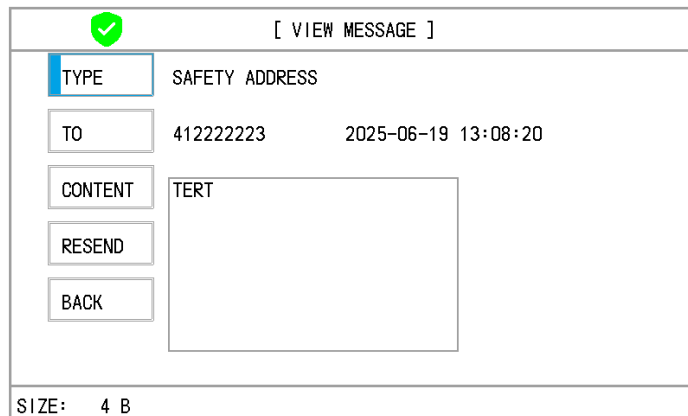
- ① Select [OUTBOX MESSAGE] to view the sent messages.



NO	TIME	MMSI	FLAG	TYPE	01/01
>01	13:08	412222223	OK	SAFETY ADDRESS	↑
					↑↑↑
					↓↓↓
					↓

A list of sent messages is displayed.

- ② Move the cursor to a message to be checked by rotating the knob and then push to enter. The following screen will be displayed.



[VIEW MESSAGE]	
TYPE	SAFETY ADDRESS
TO	412222223 2025-06-19 13:08:20
CONTENT	TERT
RESEND	
BACK	
SIZE:	4 B

- ③ If you click **RESEND**, you can edit the transmitted message, in order to retransmit a new message.
- ④ Click **BACK** to return to a higher or the main menu.

6.3 Received Message

- ① Select **[INBOX MESSAGE]** to view the received messages.

NO	TIME	MMSI	FLAG	TYPE	04/13
01	13:11	970010006	✉	LOCATING DEVICE	↑
02	13:11	970010006	✉	LOCATING DEVICE	
03	13:11	122222223	✉🔒	SAFETY BROADCAST	⋮
>04	13:11	122222223	✉🔒	SAFETY BROADCAST	⋮
05	13:10	992222223	✉	ATON MESSAGE	⋮
06	13:10	992222223	✉	ATON MESSAGE	⋮
07	13:10	992222223	✉	ATON MESSAGE	⋮
08	13:10	992222223	✉	ATON MESSAGE	↓

Symbol	Status
✉	Read
✉	Unread
🔒	Retained

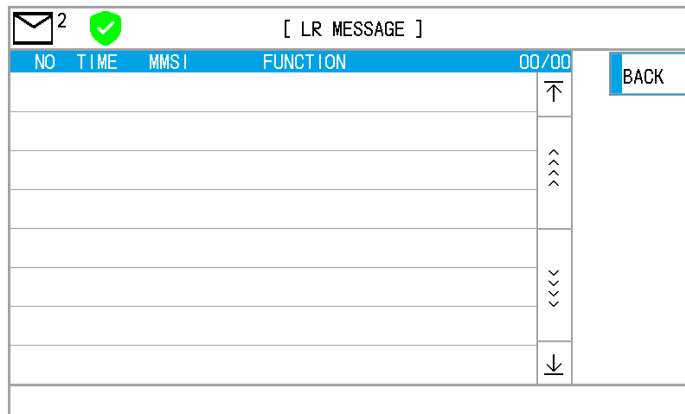
- ② Move the cursor to a message to be checked by rotating the knob, and then push to enter or click [VIEW]. The following screen will be displayed.

[VIEW MESSAGE]	
TYPE	SAFETY ADDRESS
MMSI	412222223 2025-06-19 13:03:42
CONTENT	MSG 12 TEST 1
BACK	
SIZE: 13 B	

- ③ Click [RETAIN] to retain and cancel retaining the selected message.
 ④ Click [DELETE] to delete the selected message.
 ⑤ Click [BACK] to return to a higher or the main menu.

6.4 LR Message

When the transponder is connected to a long-range communication system via the LONG RANGE communication port, then long-range interrogations may be received. These are requests for information from a distant base station beyond the normal AIS operation range. **LR MESSAGE** holds all received Long Range Interrogation messages.



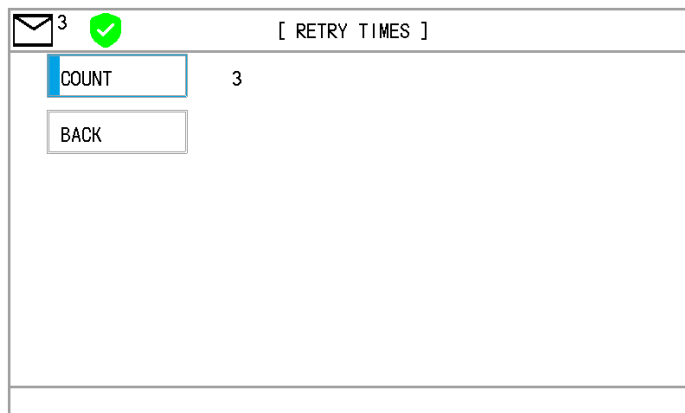
- ① Select **[LR MESSAGE]** to view the long-range messages.
- ② Push the knob to acknowledge a long-range message.

If you want to know the details in an interrogation received from the long-range mode, choose a long-range message by rotating the knob and then push to enter.

In the following screen, the requester and requested item are displayed.

Please refer to **9.5 LR INTERROGATION** for how to set the LR mode and information.

6.5 Retry Times



In order to send Message 6/12/8/14 and acknowledgement Message 7/13, you can set how many times you want the system to repeat the messages.


The options are 0 (no repeat), 1 (repeat one time), 2 (repeat 2 times) or 3 (repeat 3times).

Message No Table

Message Type	Send by Message No	Acknowledged by Message No
BINARY BROADCAST	Message 8	--
BINARY ADDRESS	Message 6	Message 7
SAFETY BROADCAST	Message 14	--
SAFETY ADDRESS	Message 12	Message 13

The default value of **RETRY TIMES** is 3 (repeat 3 times).

7. View Own Data

You may click  in the main menu to read all the data of your own vessel. The own data include basic data, voyage data, static data and dynamic data.

Or you may view your own data when the target list is displayed.

The following screen will appear:

! 1		[OWN : CLASS A]	EPFS PWR TX EXT:GP 12W RX
BASIC	VOYAGE	DRAUGHT: 05.0m	BACK
MMSI: 413666666		ETA : 10/01 23:59	
NAME: NSR TEST		DEST : SUZHOU	
RNG : ---		CARGO : 0-ALL SHIP OF THIS TYPE	
BRG : ---		0-UNDER WAY USING ENGINE	
STATIC	DYNAMIC	LAT : 31°30.2707'N	
CALL: NSR		LON : 120°27.7445'E	
IMO : 7654321		SOG : 0.0kn	
LEN : 25m		COG : 315.0°	
BEAM: 11m		ROT : 0°/min	
TYPE: 80-TANKER SHIP		HDG : 315°	
INT : A012m B013m C05m D06m		QLTY: POSITION <=10m, RAIM UNUSED	
EXT : A000m B000m C00m D00m			
OWN	31°30.2707'N 120°27.7445'E 0.0kn 315.0° U2025-07-22 15:56:05		

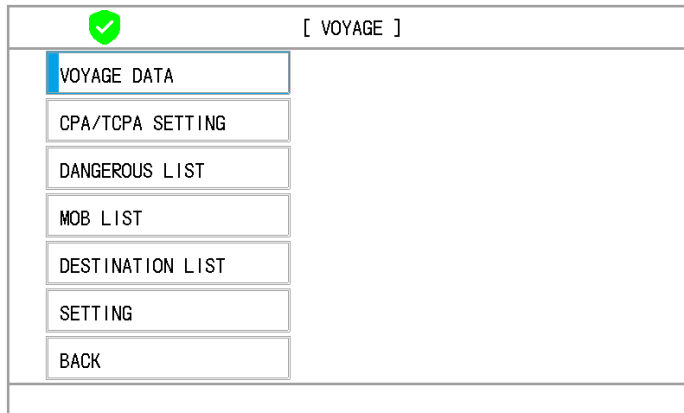
Note: The dynamic information will be used based on the priority of built-in and external Settings, as shown below:

Priority	Position Sensor Status	Position Latitude/Longitude
1	External DGNSS in use (corrected)	Lat/Lon (external)
2	Internal DGNSS in use (corrected; Message17)	Lat/Lon (internal)
3	Internal DGNSS in use (corrected; beacon)	Lat/Lon (internal)
4	External GNSS in use (uncorrected)	Lat/Lon (external)
5	Internal GNSS in use (uncorrected)	Lat/Lon (internal)
6	External position source other than GNSS	Lat/Lon (external)
7	Dead reckoning position (from the external EPFS in use)	Lat/Lon (dead-reckon)
8	Manual position input (from the external EPFS in use)	Lat/Lon (manual)
9	No position	not available

8. Voyage Setting

There are mainly six items in this menu:

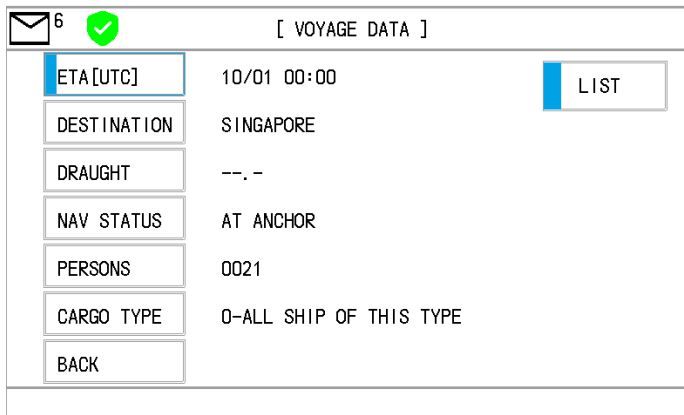
- ① VOYAGE DATA
- ② CPA/TCPA SETTING
- ③ DANGEROUS LIST
- ④ MOB LIST
- ⑤ DESTINATION LIST
- ⑥ SETTING



The screenshot shows a menu titled "[VOYAGE]" with a green checkmark icon in the top left corner. The menu contains the following items, each in a rectangular box:

- VOYAGE DATA (highlighted with a blue bar on the left)
- CPA/TCPA SETTING
- DANGEROUS LIST
- MOB LIST
- DESTINATION LIST
- SETTING
- BACK

8.1 Voyage Data



The screenshot shows a menu titled "[VOYAGE DATA]" with a green checkmark icon and a notification icon (envelope with '6') in the top left corner. The menu contains the following items:

- ETA[UTC] 10/01 00:00 (highlighted with a blue bar on the left) with a "LIST" button to its right.
- DESTINATION SINGAPORE
- DRAUGHT --.-
- NAV STATUS AT ANCHOR
- PERSONS 0021
- CARGO TYPE 0-ALL SHIP OF THIS TYPE
- BACK

8.1.1 ETA [UTC]

Set the estimated date and time of arrival at the destination. The time should be in UTC, regardless of the current time mode.

8.1.2 Destination

Set the name of the next port. You may also load from the destination list.

8.1.3 Draught

Set the draught of the current voyage.

8.1.4 NAV Status

Set the navigation status. You may select the code from the list below.

No	Navigation Status
00	UNDER WAY USING ENGINE
01	AT ANCHOR
02	NOT UNDER COMMAND
03	RESTRICTED MANOEUVRABILITY
04	CONSTRAINED BY DRAUGHT
05	MOORED
06	AGROUND
07	ENGAGED IN FISHING
08	UNDER WAY SAILING
09	RESERVED FOR HSC
10	RESERVED FOR WIG
11	TOWING ASTERN
12	PUSHING AHEAD / TOWING ALONGSIDE (regional use)
13	RESERVED FOR FUTURE USE
14	AIS-SART (active), MOB -AIS, EPIRB-AIS
15	NOT DEFINED=default (also used by AIS-SART, MOB-AIS and EPIRB-AIS under test)

When set NAV STATUS to [12], Dimension Extension needs to be set up.

✉ 2 ✔
[VOYAGE DATA]

ETA [UTC]	10/01 00:00	<input type="button" value="LIST"/>
DESTINATION	SHANGHAI	
DRAUGHT	--. --	
NAV STATUS	12-PUSHING AHEAD/TOWING ALONGSIDE	
PERSONS	0021	
CARGO TYPE	0-ALL SHIP OF THIS TYPE	
BACK		

📶 📶 :12

✉ 2 ✔
[DIMENSION EXTENSION]

EA	100 m	
EB	100 m	
EC	10 m	
ED	10 m	
BACK		

If Dimension Extension values are set as “0” m, the system will show the following message

✉ 2 ✔
[DIMENSION EXTENSION]

EA	000 m	
EB		
EC		
ED		
BACK		

CONFIRM

All extension dimension values are set as zero.
NavStatus will change to 15 after return


8.1.5 Persons

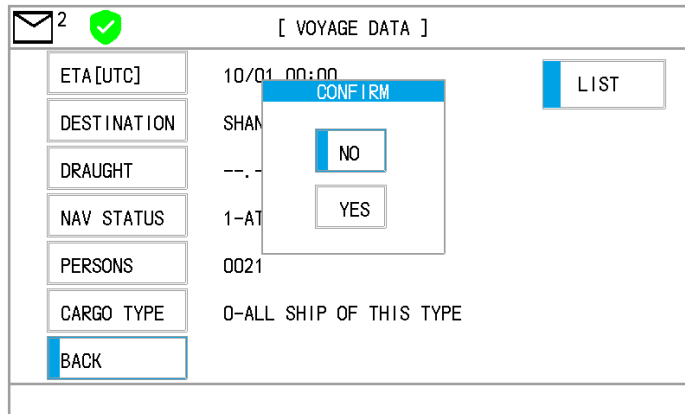
Set the persons onboard. The number of persons may be entered between 0001 to 9999.

8.1.6 Cargo Type

Set the cargo type only when the ship carries hazardous cargo such as dangerous goods (DG), harmful substances (HS), or marine pollutants (MP).

8.1.7 Save the Settings

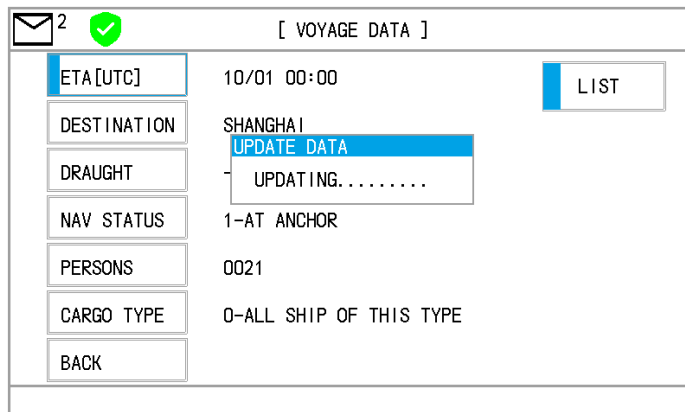
After setting is completed, click  to save the settings. The following screen will appear.



The screenshot shows the [VOYAGE DATA] screen with a confirmation dialog box overlaid. The dialog box has a blue header with the text "CONFIRM" and two buttons: "NO" and "YES". The background screen shows a list of settings on the left and their values on the right. The "ETA [UTC]" field is highlighted in blue.

Field	Value
ETA [UTC]	10/01 00:00
DESTINATION	SHANGHAI
DRAUGHT	---
NAV STATUS	1-AT
PERSONS	0021
CARGO TYPE	0-ALL SHIP OF THIS TYPE

After confirming YES, the update will be finished.



The screenshot shows the [VOYAGE DATA] screen after the update. A dialog box is overlaid with a blue header "UPDATE DATA" and the text "UPDATING.....". The background screen shows the same list of settings, but the "ETA [UTC]" field is now highlighted in blue.

Field	Value
ETA [UTC]	10/01 00:00
DESTINATION	SHANGHAI
DRAUGHT	---
NAV STATUS	1-AT ANCHOR
PERSONS	0021
CARGO TYPE	0-ALL SHIP OF THIS TYPE

8.2 CPA/TCPA Setting

CPA: Closest Point of Approach

TCPA: Time to Close of Approach

Set the CPA/TCPA value according to the captain's judgment.

When a calculating CPA/TCPA with a target vessel is falling into the setting value, an audible alarm will be activated on the MKD and the vessel will appear in the **[DANGEROUS TARGET LIST]**.

✓
[CPA/TCPA SETTING]

CPA	02.0 NM
TCPA	30 min
BACK	

8.3 Dangerous List

CPA/TCPA is calculated for each target vessel with own ship. If a target is falling into the preset CPA/TCPA value, it will be regarded as a DANGEROUS TARGET.

The dangerous targets can be listed by MMSI or NAME.

✓
🚢¹
[DANGEROUS LIST]

CPA	TCPA	MMSI	NAME	01/01		
> 1.3	27'	413000037			↑	VIEW
					>>>	BACK
					<<<	
					↓	


CPA= 2.0 NM TCPA=30 min

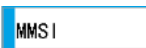

8.4 MOB List

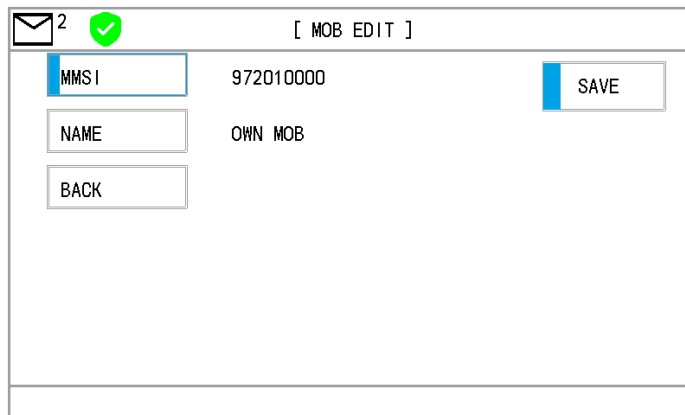
✉²
✓
[MOB LIST]

NO	MMSI	NAME	01/01		
>01	972000000	OWN MOB		↑	VIEW
				>>>	ADD
				<<<	DEL
				↓	BACK


If all crew on board have been equipped with personal AIS-MOBs, a MOB LIST shall be established so that the name of a person who carries a MOB will be immediately displayed when the MOB is activated. It can help to identify a person in distress in a short time.

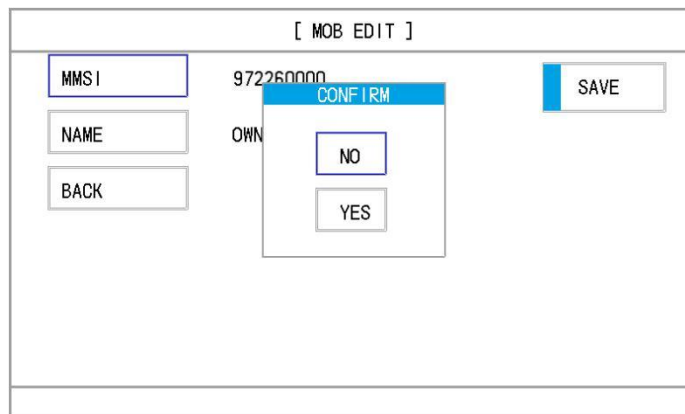
Click  to check a MOB in the list.

You may click  or  to create a new MOB or delete an existing MOB.



Click  to save the setting.

Click , return to **MOB LIST**.



8.5 Destination List

You may create a **[DESTINATION LIST]** to store frequently visited ports. When voyage setting, you may load the destination from the list.

8.6 Setting

2 [SETTING]

SILENT MODE ON

LOCATING DEVICE

BACK

8.6.1 Silent Mode

Silent Mode (no transmission) can be set when necessary. When Silent Mode is kept for more than 15 minutes, it will be recorded in the EVENT LOG.

2 [SETTING]

SILENT MODE ON

CONFIRM

Silent mode turns off AIS TX, and this behavior will be recorded by the system.

NO



YES

2 [EVENT LOG]

NO	UTC DATE	TIME	STATE	01/12
>01	2025-05-30	01:06:49	SILENT MODE ON	↑
02	2025-05-30	00:58:59	POWER ON	↑
03	2025-05-30	00:33:21	POWER OFF	↑
04	2025-05-30	00:27:12	SILENT MODE OFF	↑
05	2025-05-29	09:28:07	SILENT MODE ON	↓
06	2025-05-29	06:47:50	POWER ON	↓
07	2025-05-29	06:32:38	POWER OFF	↓
08	2025-05-29	04:45:34	POWER ON	↓

BACK

8.6.2 Locating Device

 2 	[LOCATING DEVICE]
TEST	ON
ALERT	ON
BACK	

[TEST]: When test mode is set ON, AIS will display locating devices (AIS MOB/AIS-SART/AIS EPIRB) under test in the TARGET LIST. OFF is the opposite.

ON: Enable to receive the AIS MOB/AIS-SART/AIS EPIRB test signal, and the information will be listed in the TARGET LIST.

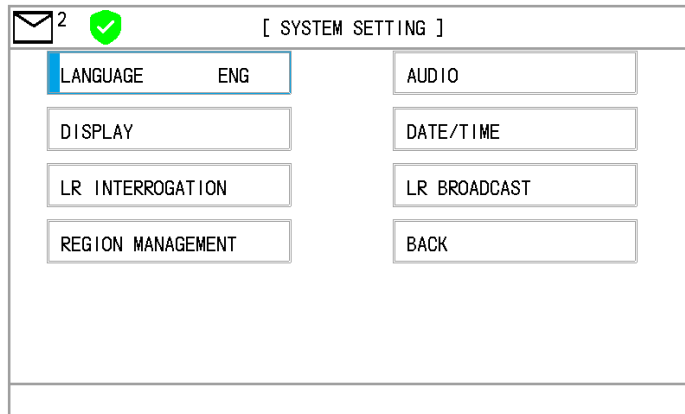
[ALERT]: When ALERT is set OFF, AIS will disable the alert of active locating devices, and the information will not be listed in the ALERT List. ON is the opposite.

Note:

New message 14 from the same MOB/SART/EPIRB will replace the old one, only update time.

9. System Setting

When selecting the 3rd item in the main menu, [SYSTEM SETTING] menu appears. Seven sub-menus are included in this menu.

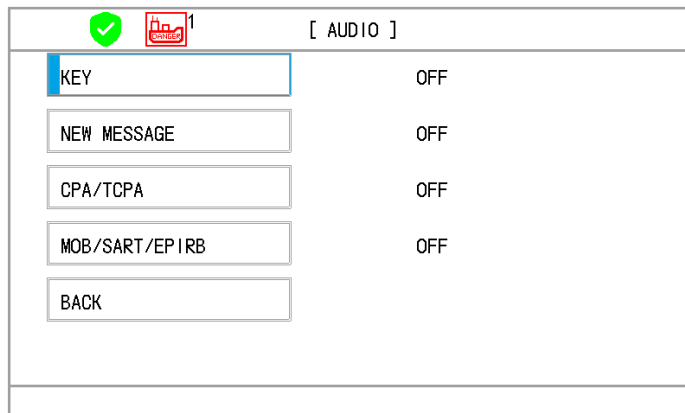


9.1 Language

The menu language can be set as English or Chinese.

9.2 Audio

By Audio setting, the alarm that sounds against message receiving may be enabled or disabled.

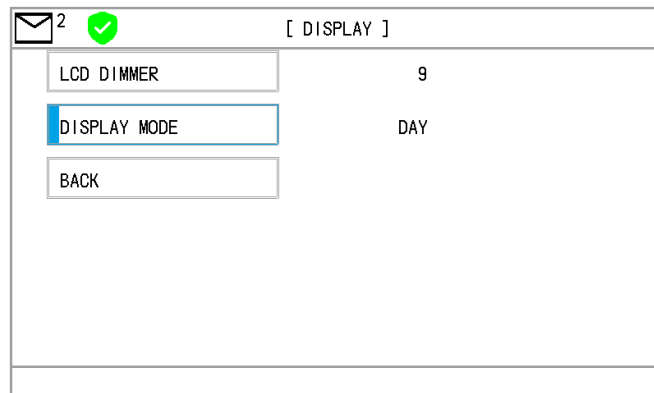


There are a total of 4 buzzer sounds to be set. The meaning of the sounds is as follows:

- KEY: when a key is pressed.
- NEW MESSAGE: when an incoming message is received.
- CPA/TCPA: when a CPA/TCPA for a target is falling into the set value.
- MOB/SART/EPIRB: when a MOB/SART/EPIRB AIS activation message is received.

9.3 Display

The [DISPLAY] menu includes [LCD DIMMER] and [DISPLAY MODE] items.



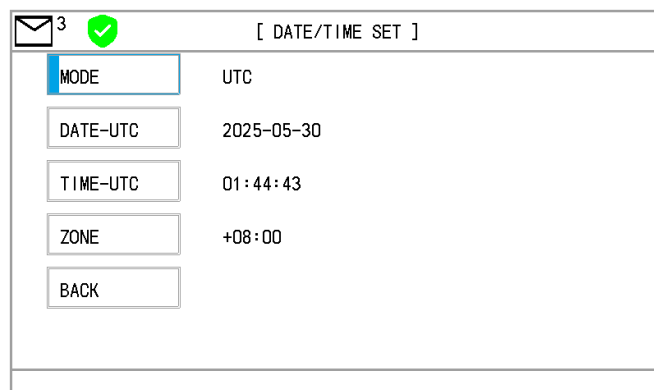
LCD DIMMER: Click to adjust the brightness of the LCD.

DISPLAY MODE: There are **DAY** mode and **NIGHT** mode that can be set.



9.4 Date & Time

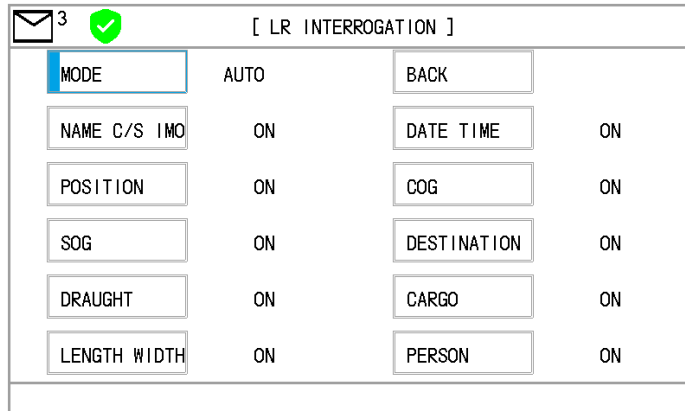
By setting the [DATE/TIME SET], set the current date and time.



9.5 LR Interrogation

The long-range mode is to allow being set by the user to respond automatically or manually to long-range interrogation from such as Inmarsat-C ship earth station. The NSI-1000 UAIS provides a two-way interface for equipment that provides for long-range communication.

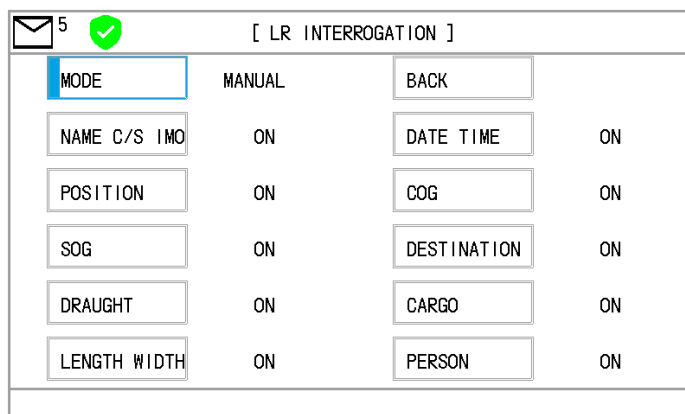
- ① Enter [LR INTERROGATION].



[LR INTERROGATION]			
MODE	AUTO	BACK	
NAME C/S IMO	ON	DATE TIME	ON
POSITION	ON	COG	ON
SOG	ON	DESTINATION	ON
DRAUGHT	ON	CARGO	ON
LENGTH WIDTH	ON	PERSON	ON

- ② To select a desired one between the auto and manual, push the knob to enter or click the current menu. In case of an automatic reply, the response is transmitted with the long-range data type derived from the AIS system automatically.
- ③ To select manual reply to long-range interrogations, push the knob to enter or click the current menu again.

The following screen will be displayed.



[LR INTERROGATION]			
MODE	MANUAL	BACK	
NAME C/S IMO	ON	DATE TIME	ON
POSITION	ON	COG	ON
SOG	ON	DESTINATION	ON
DRAUGHT	ON	CARGO	ON
LENGTH WIDTH	ON	PERSON	ON

In case of manual reply, the operator has to manually reply the interrogation or cancel the reply.

Please refer to **6.4 LR MESSAGE**.

④ The information of NAME.....DRAUGHT can be set ON or OFF.

⑤ Click to return to a higher menu or the main menu.

9.6 LR Broadcast

Class A transmits Message 27 every 3 minutes through the channels alternately. Provided here are the options to enable or disable Long Range Broadcast and the transmitting channel for Message 27.

5 <input checked="" type="checkbox"/> [LR BROADCAST]	
<input type="button" value="TX CHANNEL 1"/>	0075
<input type="button" value="TX CHANNEL 2"/>	0076
<input type="button" value="BACK"/>	

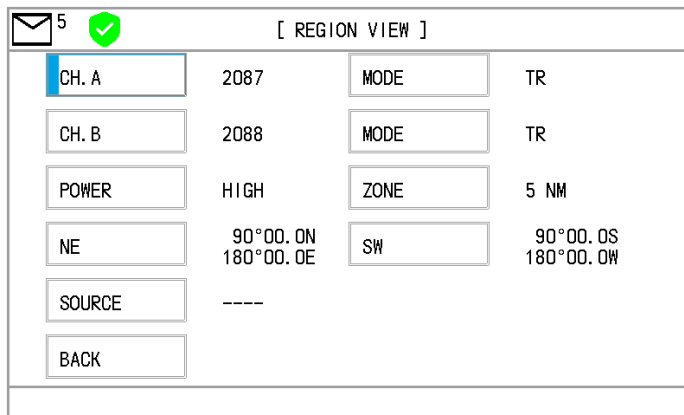
The long-range AIS broadcast Message 27 shall be transmitted only on channel 75 and channel 76.

9.7 Region Management

① Enter [REGION MANAGEMENT]. The following screen will be displayed.

5 <input checked="" type="checkbox"/> [REGION MANAGEMENT]	
<input type="button" value="CURRENT REGION VIEW"/>	
<input type="button" value="REGION LIST"/>	
<input type="button" value="BACK"/>	

② Open [CURRENT REGION VIEW]:



[REGION VIEW]			
CH. A	2087	MODE	TR
CH. B	2088	MODE	TR
POWER	HIGH	ZONE	5 NM
NE	90°00.0N 180°00.0E	SW	90°00.0S 180°00.0W
SOURCE	----		
BACK			

There are no any items to be allowed for setting in this menu and it is only to check output level, channel number and Tx/Rx mode for each channel of the current setting.

③ Open [REGION LIST]:

On the screen, you can check the status of a regional operating area currently registered in the equipment or enabling a new setting for the area. It can be registered up to 8 areas by AIS message from a coast station, DSC message, manual setting or command from ECDIS or PC.

Note:

About these registered areas:

- 1: The status registered by AIS and DSC message within the last 2 hours can't be edited.
- 2: If two or more areas overlap, the older data will be deleted.
- 3: The data older than 5 weeks will be deleted.
- 4: Regional data more than 500 miles away will be deleted.

- 1) Rotate the knob to select the number of a specified area.

Note:

About these registered areas:

In sequence of distance from own ship, the area number from 1 up to 8 can be assigned.

- 2) To edit the channel status for a specified area, push the knob to enter.
- 3) Click or move the cursor to the "CH.A" or "CH.B" by rotating the knob to alternate the channels for a selected area and then push the knob to enter. The channel number and the frequencies for each channel can be referred at Appendix 3.

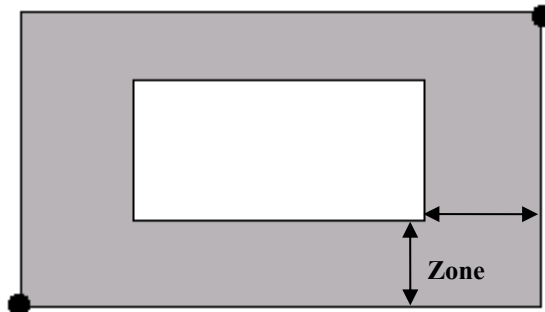
The alteration of the channel can be performed by rotating the knob.

- 4) Click or move the cursor to “**MODE**” followed by each channel by rotating the knob to alternate each channel mode for a selected area and then push the knob to enter continuously until a desired mode is displayed. The mode can be selected to either “**TR**”, “**RX**” or “**OFF**”.
- 5) Click or move the cursor to “**POWER**” by rotating the knob to alternate the output power for a selected area and then push the knob continuously until a desired power is displayed. The output power can be selected to either “**HIGH**” or “**LOW**”.
- 6) Click or move the cursor to “**ZONE**” followed by each channel by rotating the knob to change the zone size for a selected area and then push the knob continuously until a desired size is displayed. The zone size can be selected from 1 up to 8.

Note:

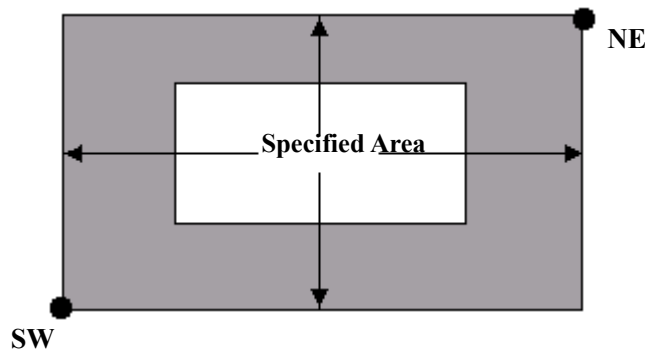
The zone size is entered with a distance represented by the NM.

It can be selected from 1 NM to 8 NM.



- 7) Click or move the cursor to “**NE**” or “**SW**” to fix the position for a selected area by rotating the knob and then push the knob. The position can be entered with north-east coordinates and south-west coordinates.

Enter desired coordinates by clicking the numbers.



Move the cursor to the symbol represented by East, West, South and North by rotating the knob to specify the latitude and longitude, and push the knob continuously until a desired symbol is displayed.

Note:

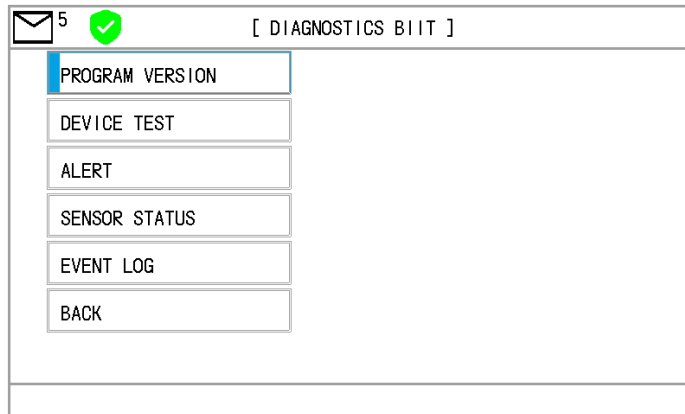
1 : The permitted ranges of a specified area are between 20 NM and 200 NM for each of horizontal, vertical directions.

2 : If two or more areas overlap, the older data will be deleted.

- 8) Click or move the cursor to “**SOURCE**” to select one of the following sources of region management, and then push the knob.
- 1371 MSG 22: ADDRESSED
 - 1371 MSG 22: BROADCAST
 - IEC61162 AIS SENTENCE
 - DSC CH 70 TELECOMMAND
 - OPERATOR MANUAL INPUT
- 9) You can ensure that it is suitable for the area setting by pushing the knob. If it is unsuitable, an appropriate error message will be shown at the bottom of the screen, and if it is suitable, you can exit from the screen to set a channel status by clicking

BACK

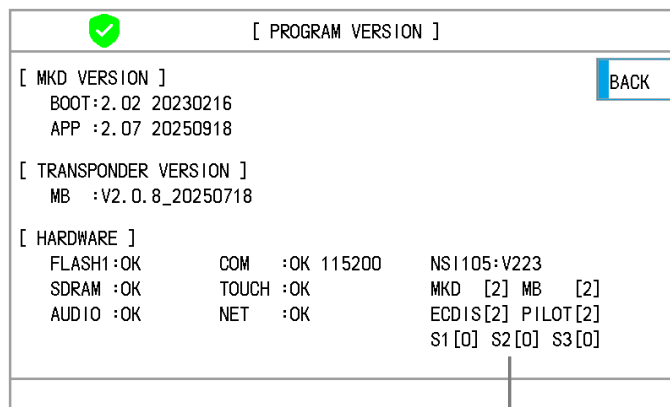
10. Diagnostics



10.1 Program Version

It is to check the software versions at **[DIAGNOSTICS BIIT]** menu.

The following screen will be displayed (for example).



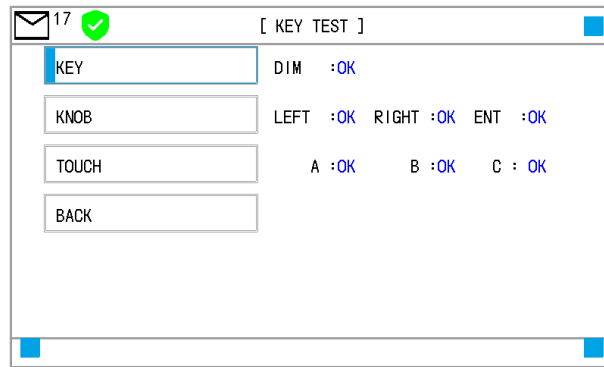
Interface board status:
 2 - Normal
 1 - The format of the sentence received is incorrect
 0 - Sentence not received

10.2 Device Test


10.2.1 Key Test

When any key is clicked, the box corresponding to the key will be filled with a blue color.

Click to return to a higher menu or the main menu.



10.2.2 LCD Check

Press the  button to test the display brightness.

Click [LCD TEST] to enter the test screen, turn the knob continuously to test the LCD.

Press the knob to exit.

10.3 Alert








Select [ALERT] item at [DIAGNOSTICS BIIT].

[ALERT] is used for Bridge alert management. CAM can remotely manage the alerts according to ID through the BAM interface. The current alerts will be synchronized to the BAM. The List of all alerts that could be generated is described in Appendix 5.

When an alert occurs, the buzzer sounds (except for a caution) and the icon of alert appears at the top of the display. Click on the icon to enter the alert list.




Display of icons:

Symbol	Priority	State
	Warning	Active-unacknowledged
		Active-silenced
		Active-acknowledged
		Active-responsibility transferred
		Rectified-unacknowledged
	Caution	Active
	/	No active alerts

10.4 Sensor Status

Select [SENSOR STATUS] item at [DIAGNOSTICS BIIT].

4 		[SENSOR STATUS]	BACK
EPFS :	External	GNSS - BDS	
POS :	POSITION	>10m. RAIM UNUSED	
UTC :	Valid		
SOG :	External		
COG :	External		
HDG :	Invalid		
ROT :	Invalid		

EPFS: [Position source] - [Type of Fixing].

POS: [Position accuracy].

UTC: "Invalid", "Valid".

SOG: "Invalid", "Internal", "External".


COG: "Invalid", "Internal", "External".

HDG : "Invalid", "Valid".

ROT: "Invalid", "Valid".

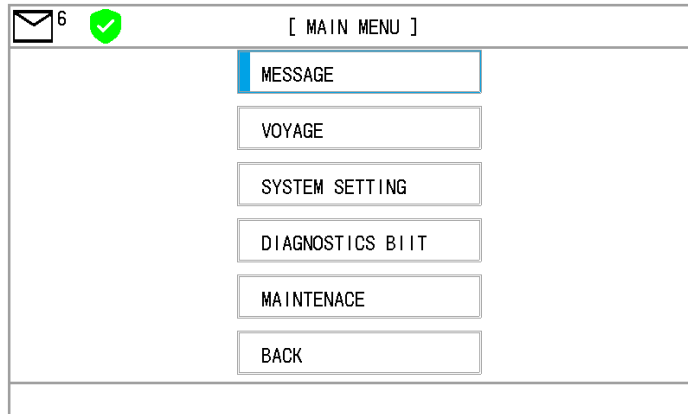
10.5 Event Log

It's to check the history of the POWER ON/OFF and SILENT MODE ON/OFF of the NSI-1000.

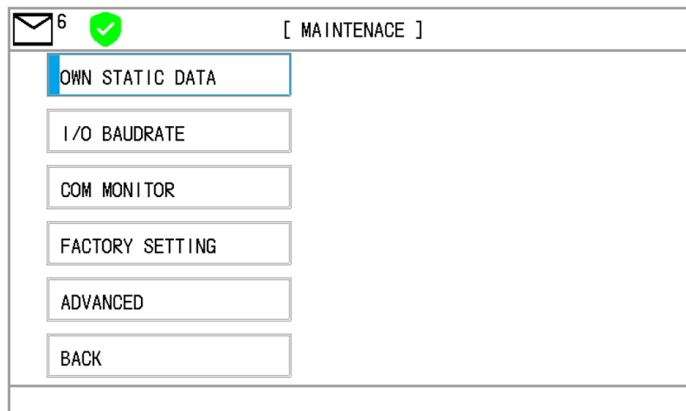
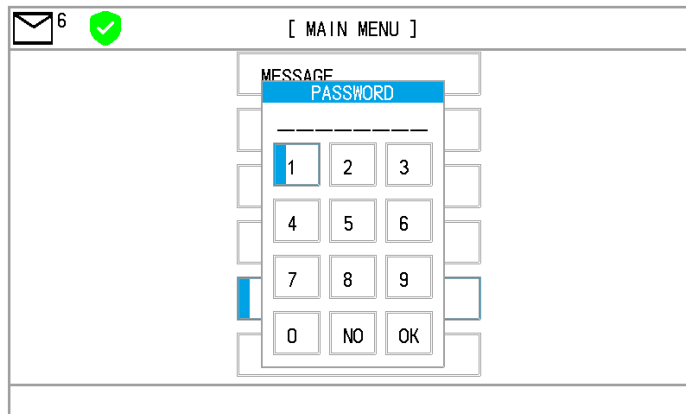
2 		[EVENT LOG]	01/12	BACK
NO	UTC DATE	TIME	STATE	
>01	2025-05-30	01:06:49	SILENT MODE ON	↑
02	2025-05-30	00:58:59	POWER ON	↑
03	2025-05-30	00:33:21	POWER OFF	↑
04	2025-05-30	00:27:12	SILENT MODE OFF	↑
05	2025-05-29	09:28:07	SILENT MODE ON	↓
06	2025-05-29	06:47:50	POWER ON	↓
07	2025-05-29	06:32:38	POWER OFF	↓
08	2025-05-29	04:45:34	POWER ON	↓

11. Maintenance

It's only used for technicians when the equipment is installed.



A password is required to access the sub-menu.



11.1 Set Own Static Data

Click [OWN STATIC DATA], the following screen appears:

NAME	TTEESST
CALL SIGN	NSR
MMSI	451222222
IMO	1234567
SHIP TYPE	CARGO SHIP
ANTENNA POS	INT 018 020 03 05 EXT 020 020 04 06
BACK	A B C D

Own ship static data include **SHIP NAME**, **CALL SIGN**, **MMSI**, **IMO NO**, etc.

Click to save the setting while finishing the entering of the static data or exit the current setting item.

Note:

For **SHIP TYPE**, please refer to [Appendix 1: List of Ship Type].

After all settings are completed, click to save the settings. The above screen will

appear. Click to confirm the saving.

For example:

SET SHIP TYPE

The ship type that has been defined can be selected by the knob, and the undefined ship type should be set up 0-UNDEFINED first, and then set the ship type number between 0~255.

✉ 9 ✔
[OWN STATIC DATA]

NAME	TTEESSTT	
CALL SIGN	NSR	
MMSI	451222222	
IMO	1234567	
SHIP TYPE	UNDEFINED	
ANTENNA POS	INT 018 020 03 05 EXT 020 020 04 06 A B C D	
BACK		

🔊 :00
|

✉ 9 ✔
[OWN STATIC DATA]

NAME	TTEESSTT	<div style="border: 1px solid gray; background-color: #e0f0ff; padding: 2px; font-weight: bold; font-size: 0.8em;">INPUT</div> <table style="margin: 0 auto; border-collapse: collapse;"> <tr><td style="border: 1px solid gray; padding: 2px 5px;">1</td><td style="border: 1px solid gray; padding: 2px 5px;">2</td><td style="border: 1px solid gray; padding: 2px 5px;">3</td></tr> <tr><td style="border: 1px solid gray; padding: 2px 5px;">4</td><td style="border: 1px solid gray; padding: 2px 5px;">5</td><td style="border: 1px solid gray; padding: 2px 5px;">6</td></tr> <tr><td style="border: 1px solid gray; padding: 2px 5px;">7</td><td style="border: 1px solid gray; padding: 2px 5px;">8</td><td style="border: 1px solid gray; padding: 2px 5px;">9</td></tr> <tr><td style="border: 1px solid gray; padding: 2px 5px;">F</td><td style="border: 1px solid gray; padding: 2px 5px;">0</td><td style="border: 1px solid gray; padding: 2px 5px;">OK</td></tr> </table>	1	2	3	4	5	6	7	8	9	F	0	OK
1	2		3											
4	5		6											
7	8		9											
F	0		OK											
CALL SIGN	NSR													
MMSI	451222222													
IMO	1234567													
SHIP TYPE	123													
ANTENNA POS	INT 018 020 03 05 EXT 020 020 04 06 A B C D													
BACK														

🔊 :00
|

SET GNSS ANTENNA POSITION

GNSS antenna position for both internal GNSS and external GNSS should be entered after installation.

✉ 10 ✔
[OWN STATIC DATA]

NAME	TTEESSTT	<div style="border: 1px solid gray; background-color: #e0f0ff; padding: 2px; font-weight: bold; font-size: 0.8em;">INPUT</div> <table style="margin: 0 auto; border-collapse: collapse;"> <tr><td style="border: 1px solid gray; padding: 2px 5px;">1</td><td style="border: 1px solid gray; padding: 2px 5px;">2</td><td style="border: 1px solid gray; padding: 2px 5px;">3</td></tr> <tr><td style="border: 1px solid gray; padding: 2px 5px;">4</td><td style="border: 1px solid gray; padding: 2px 5px;">5</td><td style="border: 1px solid gray; padding: 2px 5px;">6</td></tr> <tr><td style="border: 1px solid gray; padding: 2px 5px;">7</td><td style="border: 1px solid gray; padding: 2px 5px;">8</td><td style="border: 1px solid gray; padding: 2px 5px;">9</td></tr> <tr><td style="border: 1px solid gray; padding: 2px 5px;">F</td><td style="border: 1px solid gray; padding: 2px 5px;">0</td><td style="border: 1px solid gray; padding: 2px 5px;">OK</td></tr> </table>	1	2	3	4	5	6	7	8	9	F	0	OK
1	2		3											
4	5		6											
7	8		9											
F	0		OK											
CALL SIGN	NSR													
MMSI	451222222													
IMO	1234567													
SHIP TYPE	CARGO SHIP													
ANTENNA POS	INT 018 020 03 05 EXT 020 020 04 06 A B C D													
BACK														

A/B:0-511 C/D:0-63
|

- ① Select the column for the internal GNSS or external GNSS antenna.
- ② After selecting the column for internal GNSS antenna, move the cursor to either “A” or “B” or “C” or “D” on the right side of the subject of “INT” by rotating the knob to set the distance and then push the knob.

You can refer to each distance for A、B、C、D on the left bottom of the screen.

- ③ After selecting the column for external GNSS antenna by rotating the knob, move the cursor to either “A” or “B” or “C” or “D” on the right side of the subject of “EXT” by rotating the knob to set the distance, and then push the knob.

- ④ Click to return to the higher menu or the main menu.

Confirm the settings and return to the higher menu after the UPDATE DATA message is shown shortly.

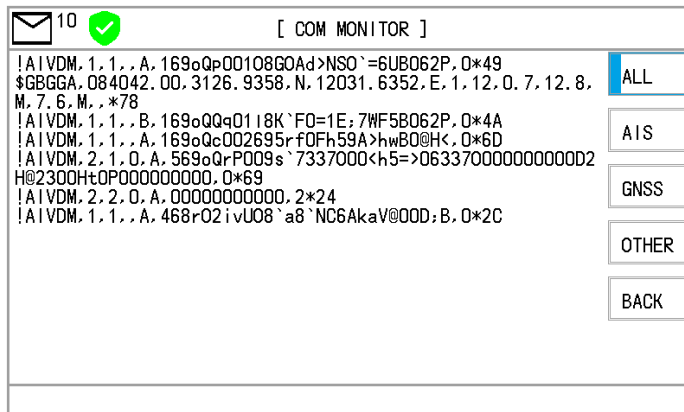
11.2 Set I/O Baudrate

The baud rate for each sensor and output (PILOT/ ECDIS/ LR/ DGPS) can be chosen as 4800/9600/129600/38400bps.

[I/O BAUDRATE]			
<input type="button" value="PILOT"/>	38400	<input type="button" value="ECDIS"/>	38400
<input type="button" value="LR"/>	38400	<input type="button" value="DGNSS"/>	38400
<input type="button" value="SENSOR1"/>	4800	<input type="button" value="SENSOR2"/>	4800
<input type="button" value="SENSOR3"/>	4800	<input type="button" value="BACK"/>	

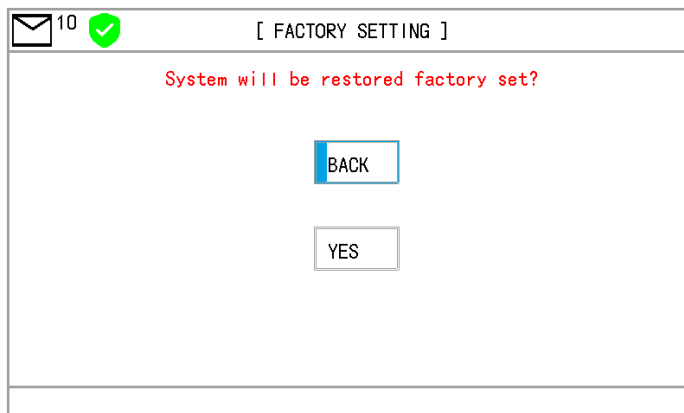
11.3 AIS/GNSS Communication Monitor

It's to check the communication sentences on the I/O ports.



11.4 Restore Factory Setting

It's to restore the system settings to factory settings.



Note: All settings will be cleared if this function is executed.

11.5 Advanced

For factory use only.

12. Check & Troubleshooting

12.1 Periodic Check

The periodic check is necessary to maintain the performance. A monthly maintenance program should be established that includes the minimum items shown in the table below.

Item	Check Point
Connector	Inspect that all connectors on the rear panel of the transponder unit are firmly fitted.
Cable	Inspect the cables. Replace if damaged.
Ground Terminal	Inspect the ground terminal being in rust. If necessary, clean.
Ground Wire	Ensure that the ground wire is firmly fastened.
Transponder Unit /MKD	Dirt and dust should be removed from the transponder unit with a piece of soft dry cloth. Wipe the LCD carefully to prevent scratching by using tissue paper and a LCD cleaner so as to dissolve the dirt and salt. Change paper frequently so the salt or dirt will not scratch the LCD. Do not use solvents such as thinner, acetone or benzene for cleaning. These can remove paint and marks and deform the equipment.

12.2 Troubleshooting

The below troubleshooting table provides common symptoms of troubles and means to rectify them. Even if it is impossible to restore to normal operation, don't attempt to check inside the equipment. Any repairs should be done by a qualified technician.

Symptom	Correction
Power	
Can't turn on the power	<ul style="list-style-type: none"> ● Inspect that the power connector is firmly fitted. ● Inspect whether the power switch on the rear panel of the transponder has been projected. ● Even if it is impossible to restore to normal operation, don't attempt to check inside the equipment. ● Inspect the power supply. ● Inspect fuses.
Transmission and Reception	
Can't transmit or receive	<ul style="list-style-type: none"> ● Inspect that the VHF antenna cable is firmly fastened. ● Inspect the VHF antenna. ● Check MMSI. Can't transmit if MMSI is 000000000.
Position Data	
No Position Data	<ul style="list-style-type: none"> ● Inspect the GNSS antenna. ● Inspect the GNSS antenna cable and connectors.

Appendix 1 List of Ship Type

20	WIG: ALL SHIPS OF THIS TYPE
30	FISHING VESSEL
31	TOWING VESSEL
32	LENGTH OF THE TOW EXCEEDS 200M OR BREADTH EXCEEDS 25M
33	VESSEL ENGAGED IN DREDGING OR UNDERWATER OPERATIONS
34	VESSEL ENGAGED IN DIVING OPERATIONS
35	VESSEL ENGAGED IN MILITARY OPERATIONS
36	VESSEL SAILING
37	PLEASURE CRAFT
40	HSC
50	PILOT VESSEL
51	SEARCH AND RESCUE VESSELS
52	TUGS
53	PORT TENDERS
54	VESSELS WITH ANTI-POLLUTION FACILITIES OR EQUIPMENT
55	LAW ENFORCEMENT VESSELS
58	MEDICAL TRANSPORTS
59	SHIPS ACCORDING TO RESOLUTION NO 18 (MOB-83)
60	PASSENGER SHIP
70	CARGO SHIP
80	TANKER
90	OTHER TYPE OF SHIP

NOTE: WIG: Wing-in-Ground Craft

Appendix 2 Abbreviations

ACK	Acknowledge
AIS	Automatic Identification System
ANT	Antenna
ATON	Aid to Navigation
AUTO	Automatic
AUX	Auxiliary
BDS	BeiDou Navigation Satellite System
BRD	Broadcast
BRG	Bearing
CH	Channel
CLR	Clear
COG	Course over Ground
CPA	Closest Point of Approach
DEL	Delete
DEST	Destination
DG	Dangerous Goods
DGPS	Differential Global Positioning System
DIMS	Dimension
DSC	Digit Selective Calling
DTE	Data Terminal Equipment
ECS	Electronic Chart System
ECDIS	Electronic Chart Display & Information System
EGNOS	European Geo-stationary Navigational Overlay System
EMC	Electronic Magnetic Compatibility
EMG	Emergency
ENG	English
ENT	Enter
EPFS	Electronic Position-fixing Systems
ESC	Escape
ETA	Estimated Time of Arrival
EXT	External
FM	Frequency Modulation
FSK	Frequency Shift Keying
GND	Ground
GLONASS	Global Orbiting Navigation and Safety System
GMSK	Gaussian Minimum Shift Keying
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GYRO	Gyro Compass
HDG	Heading
HS	Harmful Substances

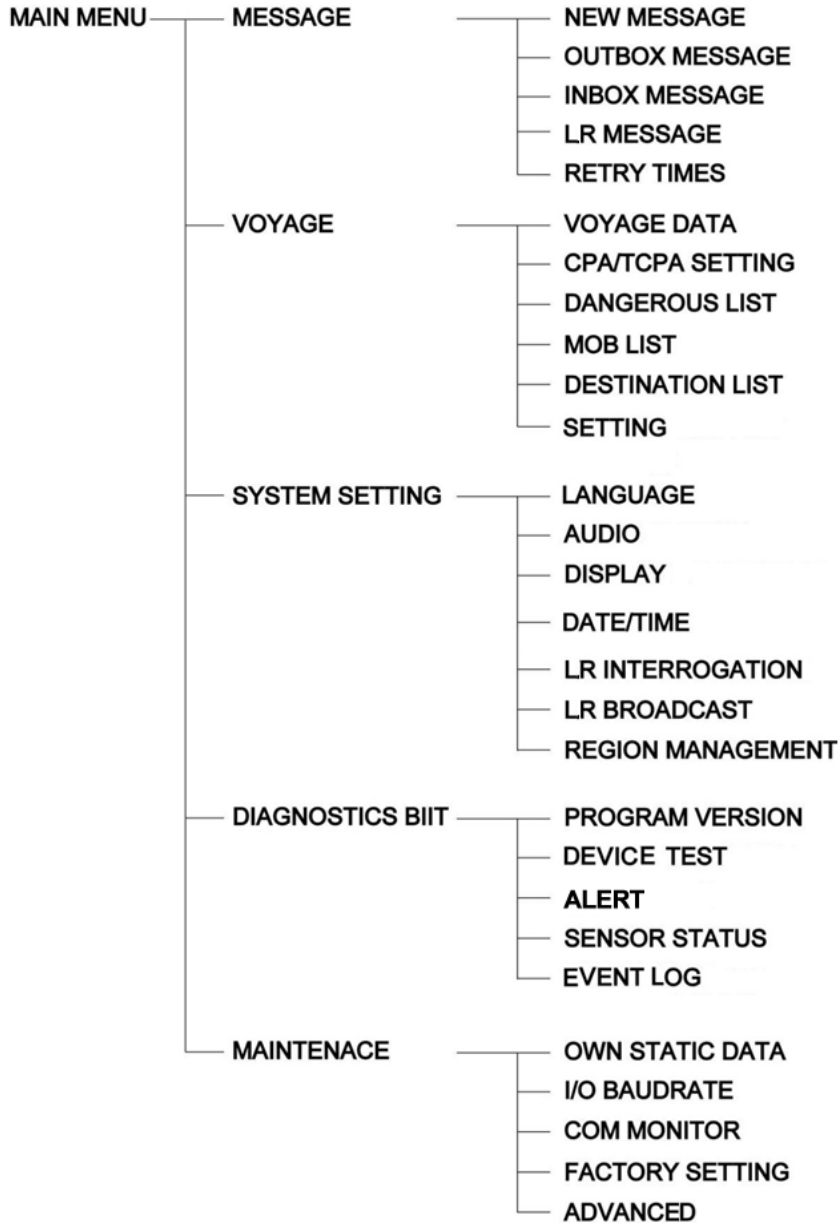
IALA	International Association of Lighthouse Authorities
IEC	International Electrotechnical Commission
IMO	International Maritime Organization
INMARSAT	International Maritime Satellite Organization
INT	Internal
I/O	Input/Output
ITU	International Telecom Union
LAT	Latitude
LCD	Liquid Crystal Display
LEN	Length
LON	Longitude
LR	Long Range
LT	Local Time
MKD	Minimum Keyboard and Display
MMSI	Maritime Mobile Service Identity
MOB	Man Overboard
MSC	Maritime Safety Committee
MSG	Message
NAV	Navigation
NUM	Number
NMEA	National Marine Electronics Association
PI	Presentation Interface
POS	Position
PWR	Power
PREF	Preferred
QLTY	Quality
RNG	Range
ROT	Rate of Turn
RTCM	Radio Technical Commission for Maritime services
RX	Receiving (Receiver)
RXD	Received/Receiving Data
SAR	Search and Rescue
SART	Search and Rescue Transponder
SOG	Speed over Ground
SOLAS	International Convention for Life and Safety at Sea
STBD	Starboard
TCPA	Time to Closest Point of Approach
TDMA	Time Division Multiple Access
TX	Transmitting (Transmitter)
TXD	Transmitted/Transmitting Data
UTC	Coordinated Universal Time
VHF	Very High Frequency

Appendix 3 VHF Frequency Table

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1001	156.0500	1208	156.4125	2002	160.7000	2206	160.9125
1003	156.1500	1209	156.4625	2003	160.7500	2207	160.9625
1005	156.2500	1210	156.5125	2004	160.8000	2218	161.5125
1006	156.3000	1211	156.5625	2005	160.8500	2219	161.5625
1007	156.3500	1212	156.6125	2006	156.3000	2220	161.6125
1018	156.9000	1213	156.6625	2007	160.9500	2221	161.6625
1019	156.9500	1214	156.7125	2008	156.4000	2222	161.7125
1020	157.0000	1215	156.7625	2009	156.4500	2223	161.7625
1021	157.0500	1216	156.8125	2010	156.5000	2224	161.8125
1022	157.1000	1217	156.8625	2011	156.5500	2225	161.8625
1023	157.1500	1218	156.9125	2012	156.6000	2226	161.9250
1024	157.2000	1219	156.9625	2013	156.6500	2227	161.9750
1025	157.2500	1220	157.0125	2014	156.7000	2228	162.0125
1026	157.3000	1221	157.0625	2015	156.7500	2260	160.6375
1027	157.3500	1222	157.1125	2016	156.8000	2261	160.6875
1028	157.4000	1223	157.1625	2017	156.8500	2262	160.7375
1061	156.0750	1224	157.2125	2018	161.5000	2263	160.7875
1063	156.1750	1225	157.2625	2019	161.5500	2264	160.8375
1064	156.2250	1226	157.3125	2020	161.6000	2265	160.8875
1065	156.2750	1227	157.3625	2021	161.6500	2266	160.9375
1066	156.3250	1228	157.4125	2022	161.7000	2278	161.5375
1067	156.3750	1260	156.0375	2023	161.7500	2280	161.6375
1068	156.4250	1261	156.0875	2024	161.8000	2281	161.6875
1069	156.4750	1262	156.1375	2025	161.8500	2282	161.7375
1070	156.5250	1263	156.1875	2026	161.9125	2283	161.7875
1071	156.5750	1264	156.2375	2027	161.9625	2284	161.8375
1072	156.6250	1265	156.2875	2028	162.0000	2285	161.8875
1073	156.6750	1266	156.3375	2060	160.6250	2286	161.9375
1074	156.7250	1267	156.3875	2061	160.6750	2287	161.9625
1075	156.7750	1268	156.4375	2062	160.7250	2288	162.0125
1076	156.8250	1269	156.4875	2063	160.7750		
1077	156.8750	1270	156.5375	2064	160.8250		
1078	156.9250	1271	156.5875	2065	160.8750		
1079	156.9750	1272	156.6375	2066	160.9250		
1080	157.0250	1273	156.6875	2078	161.5250		
1081	157.0750	1274	156.7375	2079	161.5750		
1082	157.1250	1275	156.7875	2080	161.6250		
1083	157.1750	1276	156.8375	2081	161.6750		
1084	157.2250	1277	156.8875	2082	161.7250		
1085	157.2750	1278	156.9375	2083	161.7750		
1086	157.3250	1280	157.0375	2084	161.8250		
1087	157.3750	1281	157.0875	2085	161.8750		
1088	157.4250	1282	157.1375	2086	161.9250		
1201	156.0625	1283	157.1875	2087	161.9750	AIS 1	
1202	156.1125	1284	157.2375	2088	162.0250	AIS 2	
1203	156.1625	1285	157.2875	2201	160.6625		
1204	156.2125	1286	157.3375	2202	160.7125		
1205	156.2625	1287	157.3875	2203	160.7625		
1206	156.3125	1288	157.4125	2204	160.8125		
1207	156.3625	2001	160.6500	2205	160.8625		

Frequency in MHz

Appendix 4 Menu Tree



Appendix 5 Alerts

ID	Title	Additional information	Prio	Cat	Escal	Ins/BIIT
3108	Locating device	Check AIS targets	W	B	W	14
3062	General fault	Check AIS equipment	W	B	W	6
3008	Transceiver fail	Not transmitting, check AIS	W	B	W	1
		Not receiving, check AIS	W	B	W	3, 4
3015	Lost position	Own ship position not transmitted	W	B	W	26
3116	Impaired radio	Reduced coverage (antenna VSWR)	C	B	-	2
		Ch1 inoperative, check AIS	C	B	-	3
		Ch2 inoperative, check AIS	C	B	-	4
		DSC inoperative	C	B	-	5
3113	Sync in fallback	Check AIS for UTC time synchronisation	C	B	-	3
3003	Lost ext EPFS	Check external position sensor	C	B	-	25
3119	Missing COG	Not transmitting COG	C	B	-	30
	Missing SOG	Not transmitting SOG	C	B	-	29
	Missing Heading	Not transmitting Heading	C	B	-	32
	Missing ROT	Not transmitting Rate of Turn	C	B	-	35
3013	Doubtful GNSS	Int/Ext GNSS position mismatch	C	B	-	9
	Doubtful heading	Difference with COG exceeds limit	C	B	-	11
3019	Wrong NavStatus	Check NavStatus setting	C	B	-	10
3009	Lost MKD	Cannot display safety related messages	C	B	-	8

Note: All the alerts are not support responsibility transfer

Ins/BIIT: Instance of an BAM alert, unique alarm number of legacy alert;

Prio: Alert priority: W – Warning, C - Caution

Cat: Alert category;

Escal: W - An unacknowledged warning will be repeated as warning after 3 minutes.

For legacy alert, ALR will output to alert interfaces. The alert is described below:

BIIT	Description text
14	AIS: Active locating device
6	AIS: General failure
1	AIS: Tx malfunction
3	AIS: Rx channel 1 malfunction
4	AIS: Rx channel 2 malfunction
26	AIS: No position sensor in use
2	AIS: VHF Antenna VSWR exceeds limit
5	AIS: Rx Channel 70 malfunction
7	AIS: UTC sync invalid
9	AIS: Internal/external GNSS position mismatch
10	AIS: NavStatus incorrect
11	AIS: Heading sensor offset
25	AIS: External EPFS lost
29	AIS: No valid SOG information
30	AIS: No valid COG information
32	AIS: Heading lost/invalid
35	AIS: No valid ROT information
8	AIS: MKD connection lost

Mapping between BAM alert states and ALR alert states:

Priority of BAM alert	BAM alert state		ALR alert state	
	State	Description	Flags ^a	Description
Caution	N	Normal	V,V	Inactive, unacknowledged
	A	Active	A,A	Active, acknowledged
Warning or Alert	N	Normal	V,V	Inactive, unacknowledged
	V	Active, unacknowledged	A,V	Active, unacknowledged
	S	Active, silenced	A,A	Until silence period ends ^b
	A	Active, acknowledged	A,A	Active, acknowledged
	O	Responsibility transferred	A,A	Active, acknowledged
	U ^c	Rectified, unacknowledged	V,V	Inactive, unacknowledged ^c

^a ALR alert state flags in the order of appearance in ALR sentence (first is condition, second is acknowledgement state).

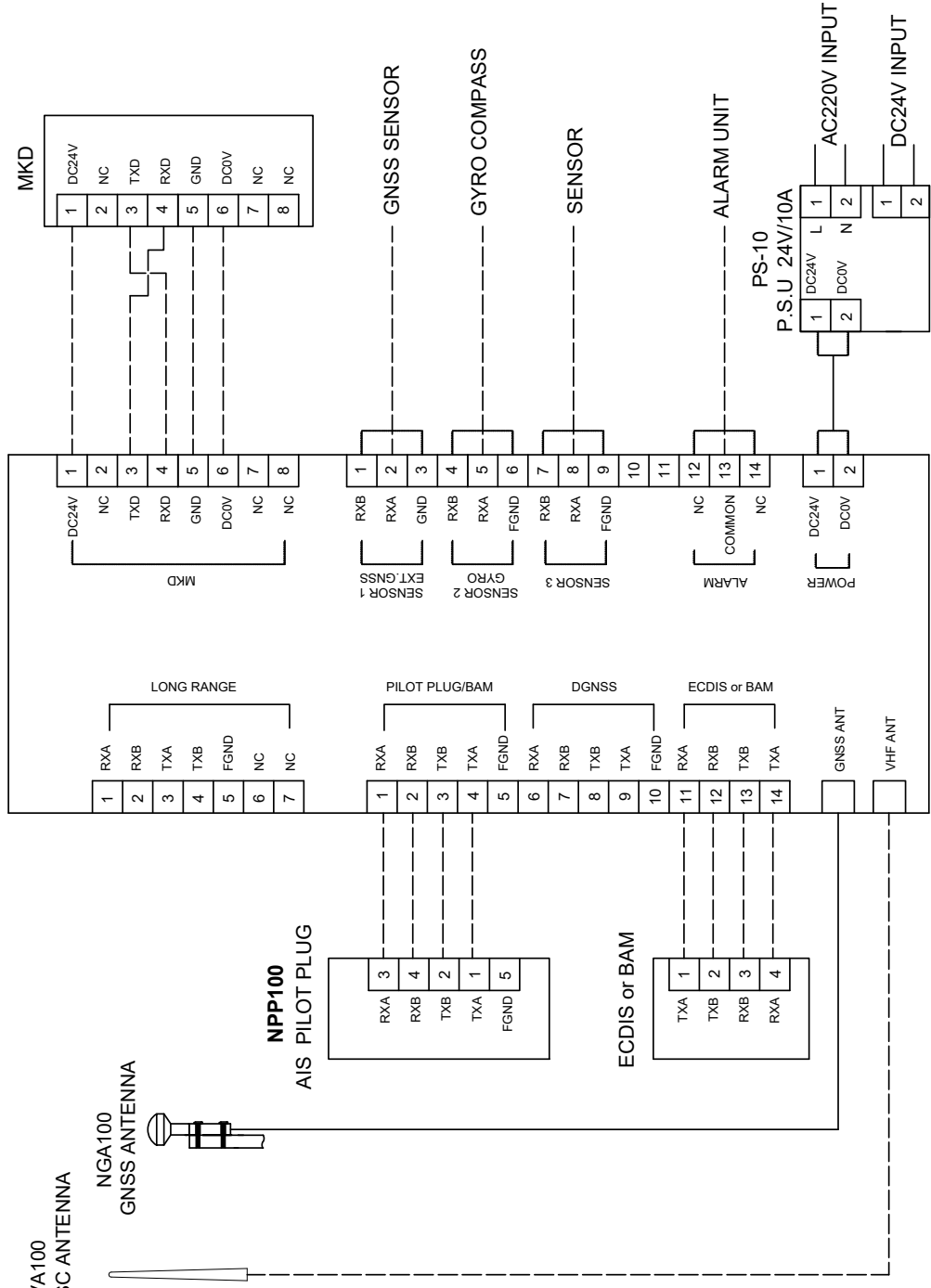
^b When silence period ends, alert state is transitioned to "Active, unacknowledged".

^c None of the alerts required by this document are required to use state Rectified, unacknowledged.

Appendix 6 Installation Drawings

Drawing No.	Description
NSI1000-ID-001	NSI-1000 AIS SYSTEM DIAGRAM
NSI1000-ID-002	NSI-1000 AIS SYSTEM BLOCK DIAGRAM
NSI1000-ID-003	NSI-1000 AIS SYSTEM WIRING DIAGRAM
NSI1000-ID-004	NSI-1000 TRANSPONDER SIZE DRAWING
NSI1000-ID-005	NSI-1000 MKD SIZE DRAWING
NSI1000-ID-006	NSI-1000 MKD MOUNTING DRAWING (TABLE TYPE)
NSI1000-ID-007	NSI-1000 MKD MOUNTING DRAWING (FLUSH TYPE)
NSI1000-ID-008	NPP100 AIS PILOT PLUG LAYOUT
NSI1000-ID-009	NGA100 GNSS ANTENNA MOUNTING DRAWING
NSI1000-ID-010	PS-10 PSU SIZE DRAWING (24V/10A)

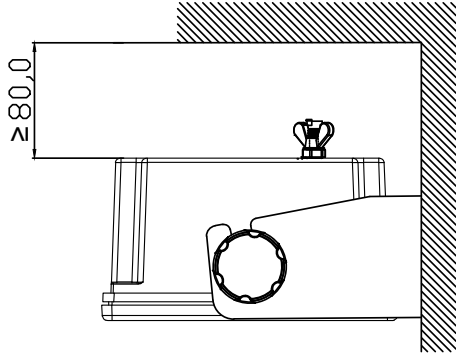
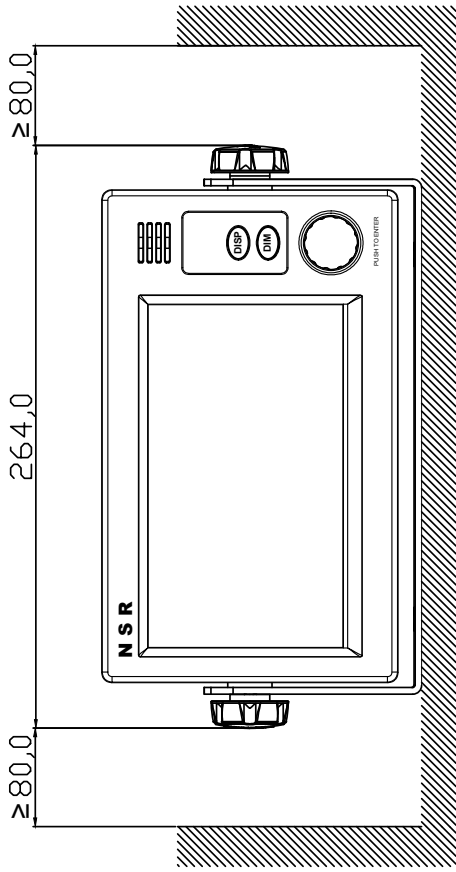
NO.	DATE	REVISION & DESCRIPTION	DESIGNED	CHECKED



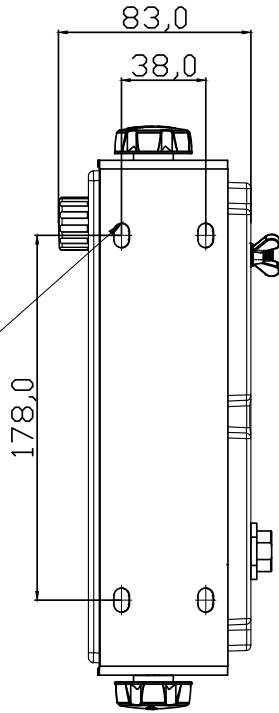
NSI-1000 AIS TRANSPONDER

APPLICATION		NSI-1000 AIS SYSTEM WIRING DIAGRAM			
DATE	ITER	DATE	ITER	DATE	ITER
APPROVAL	SCALE	DATE	ITER	DATE	ITER
CHECKED	DRAWING		NSI1000-1D-003		
DATE					





4-7x11 SLOT, FITTING HOLE



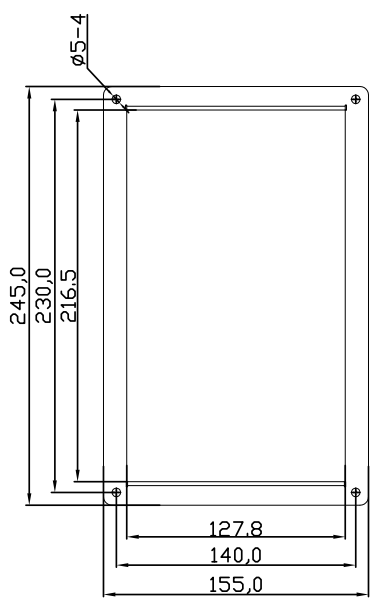
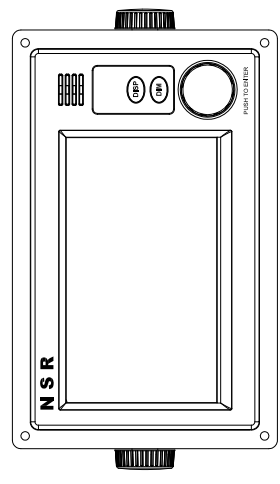
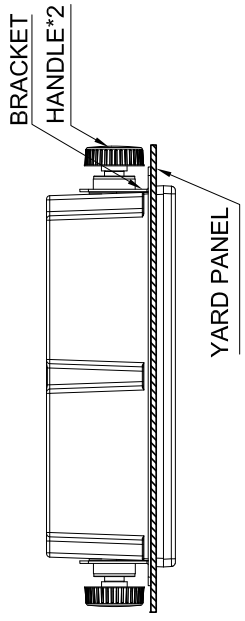
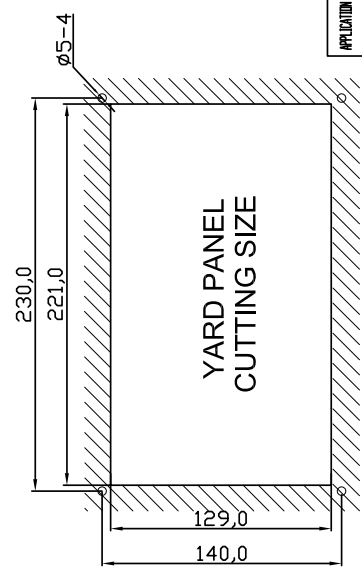
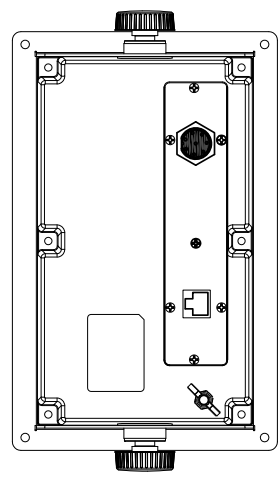
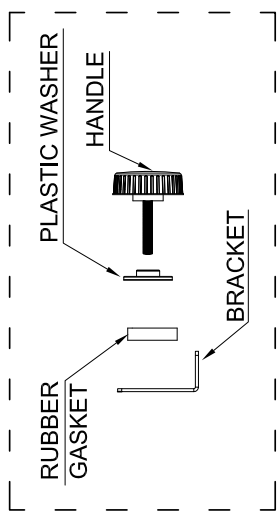
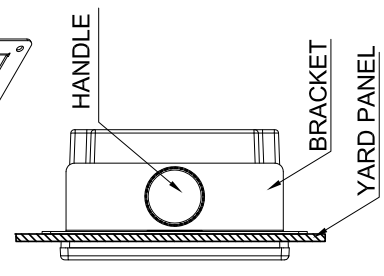
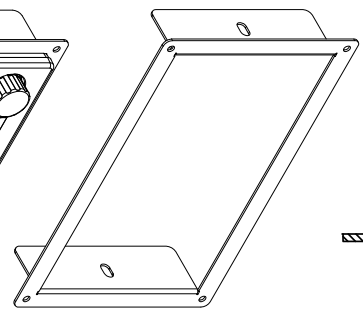
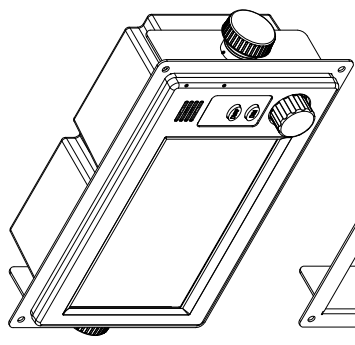
NOTE: TABLE TYPE

1. USE SELF-TAPPING SCREWS M5X20 FOR FIXING THE UNIT.
2. 80MM IS MINIMUM SPACE FOR OPERATION AND CABLING.

NO.	DATE	REVISION & DESCRIPTION	CHECKED	DRAWING

APPLICATION		NSI-1000 MKD MOUNTING DRAWING (TABLE TYPE)			
DATE	ITER	SCALE	UNIT	IN. FORM	DATE
APPROVAL					
CHECKED					
DRAWING					
NO. FILE	NSI1000-ID-006				
NSR NEW SUNRISE CO., LTD.					

NO.	DATE	REVISION & DESCRIPTION	DESIGNER	CHECKER

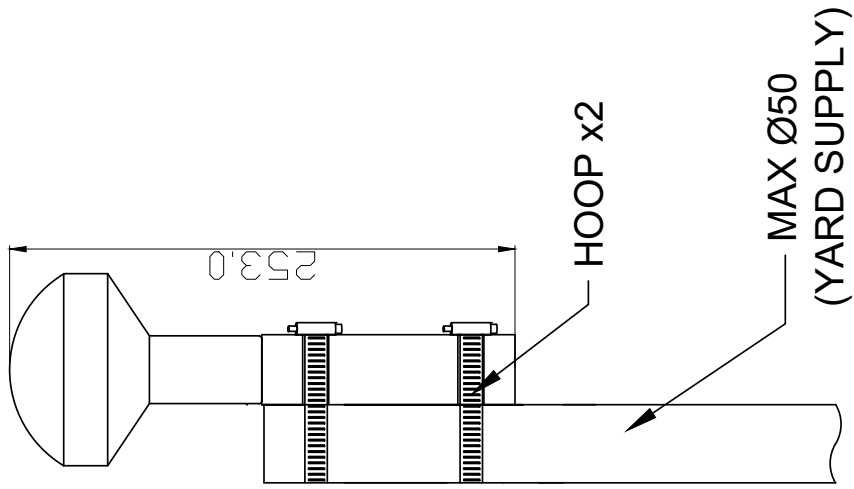


MOUNTING BRACKET SIZE

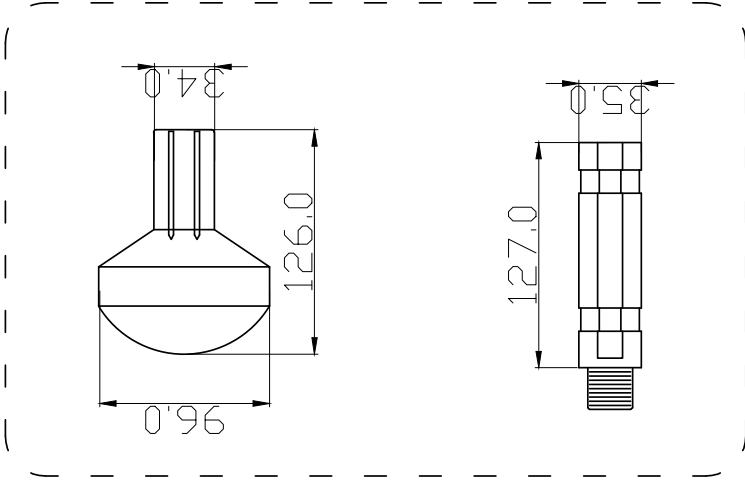
APPLICATION										NSI-1000 MKD MOUNTING DRAWING (FLUSH TYPE)										
DATE	ITEM	SCALE	UNIT	PROJ. NO.	DESIGNER	CHECKER	DRAWING NO.	NO. IN	NSI1000-ID-007		DATE	SCALE	UNIT	PROJ. NO.	DESIGNER	CHECKER	DRAWING NO.	NO. IN	NSI1000-ID-007	

NSR
NEW SUNRISE CO., LTD.

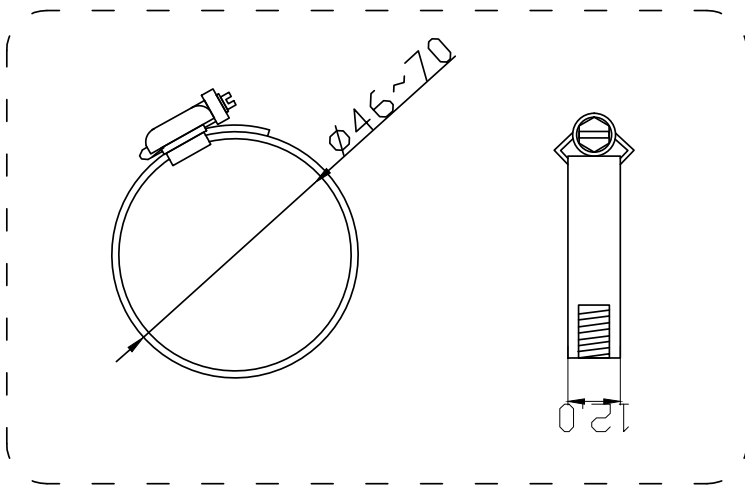
NGA100
GNSS ANTENNA




ANTENNA & MOUNT POLE



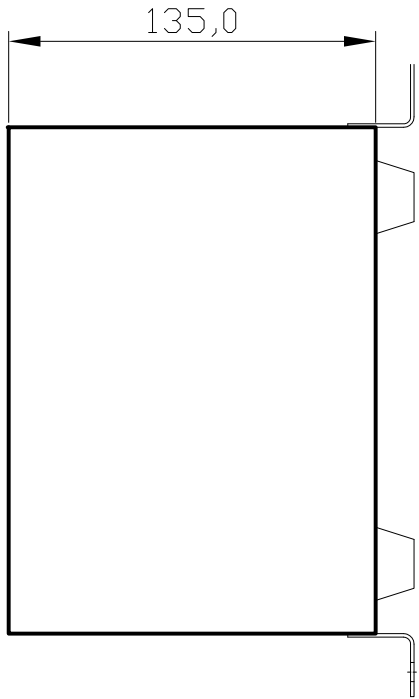
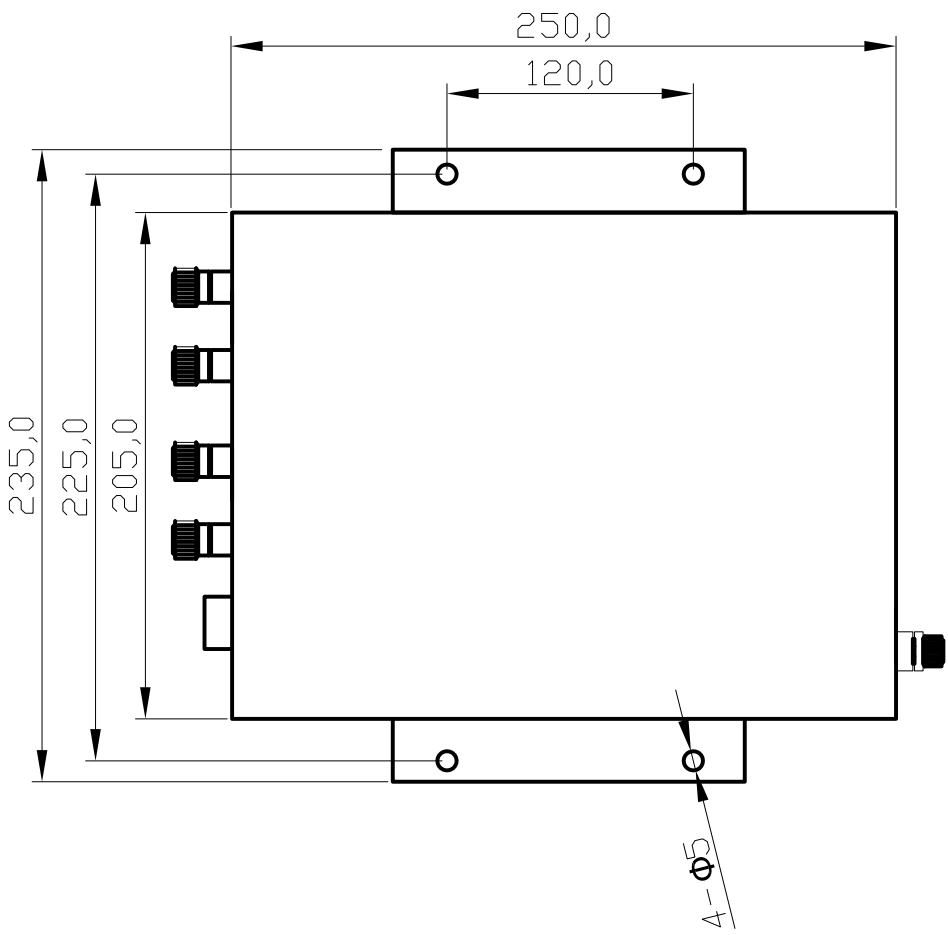
HOOP SIZE



NO.	DATE	REVISION & DESCRIPTION	CHECKED	DRAWING

APPLICATION: NGA100 ANTENNA SIZE&MOUNTING DRAWING									
DATE	ITER	SCALE	UNIT	IN. FORM	PROJ. NO.	DESIGN	DATE	BY	CHK
APPROVAL	CHECKED	DRAWING	DATE	BY	NSI1000-ID-009				
					 NSR NEW SUNRISE CO., LTD.				

NO.	DATE	REVISION & DESCRIPTION	DESIGNER
			SPRINGER



INPUT AC 220V/DC 24V 50HZ
 INPUT DC 24V
 OUTPUT DC 24V 10A

APPLICATION	PS-10 PSU SIZE DRAWING (24V/10A)										
DATE	ITEM	SCALE	UNIT	PROJ.	DESIGNER	CHECKER	DATE	DATE	DATE	DATE	DATE
NSR	NEW SUNRISE CO., LTD.										
NSR1000-ID-010											

Copyright by NEW SUNRISE CO., LTD. (NSR)

www.nsrmarine.com

info@nsrmarine.com

December, 2025