

SIMRAD®

V5043 Class A AIS Transceiver

Operator manual

English



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The warranty card is supplied as a separate document. In case of any queries, refer to the brand website of your unit or system: www.navico-commercial.com

About this manual

Product features

Features described and illustrated in this document may vary from your unit due to continuous development of the software.

More information

Document version 001

This document was prepared using software version 2.0.X

For the latest version of this document in supported languages, visit: www.navico-commercial.com.

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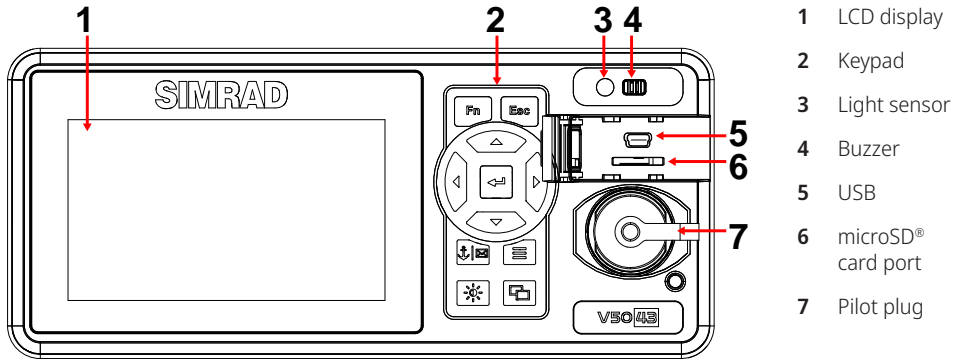
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OPERATION

Front panel overview



- 1 LCD display
- 2 Keypad
- 3 Light sensor
- 4 Buzzer
- 5 USB
- 6 microSD® card port
- 7 Pilot plug

Keypad description

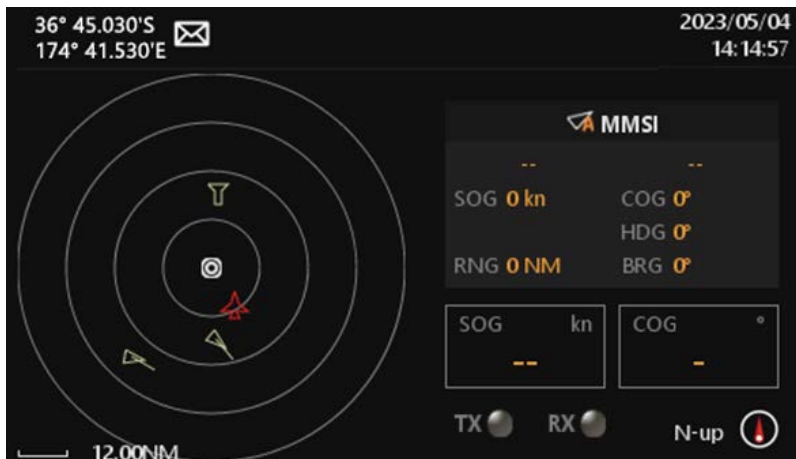
Item	Icon	Name	Function
1		Function	<ul style="list-style-type: none"> • Radar view: Select chart orientation and type of target to show • Target list: Select sort method and what type of target to show
2		ESC	<ul style="list-style-type: none"> • Menu: Go back to the previous level • Long Press: Go to Alert list
3		Voyage/SRM	<ul style="list-style-type: none"> • Short Press: Go to Voyage • Long Press: Go to Send SRM
4		Menu	<ul style="list-style-type: none"> • Go to Menu • Long Press: Capture a screenshot and save it to the microSD® card.
5		Screen brightness	<ul style="list-style-type: none"> • Quick switch of screen brightness (5 levels) • Long Press: Change screen brightness to 1st level (screen protection)
6		DISP	<ul style="list-style-type: none"> • Short Press: Display modes rotating • Long Press: Go to User customize
7		Enter	<ul style="list-style-type: none"> • Confirm the currently selected item
8		Arrow keys	<ul style="list-style-type: none"> • Move the selection cursor • Radar view: <ul style="list-style-type: none"> • Up-Down: change scale • Right-Left: select target • Ship detail: <ul style="list-style-type: none"> • Right-Left: change page

DISPLAY MODES

For quick access, users can cycle through display modes by pressing the  button.

Radar view









Displays all targets on Radar View, refer to *Radar view on page 8*.



AIS target list

Shows all received ship data, refer to *Target List on page 37*.



Name/MMSI	AGE	BRG	RNG	1/12
 BARLIAN T1201	23s	125	4.31	
 TB SOL 1010	12s	325	5.57	
 440982000	9s	27	12.52	
 477770700	3m 10s	164	1.84	
 CRYSTAL RIVER	1s	59	2.50	
 STAR ADMIRAL	10m 23s	210	7.85	
 525009342	33s	188	2.50	
 538008570	2m 13s	19	3.56	
 563051600	50s	12	9.85	

Dangerous target list

Shows all dangerous AIS targets presently, refer to *Dangerous Target List on page 44*.

36° 45.030'S 2023/05/04
174° 41.530'E 14:18:32

Dangerous Target List

	Name/MMSI	CPA	TCPA	1/2
⚓	BARLIAN T1201	5	10	
⚓	TB SOL 1010	10	15	

GNSS satellite information

Shows the GNSS satellite current usage status, refer to *GNSS Status on page 41*.

36° 45.030'S 2022/03/08
174° 41.530'E 11:01:21

GNSS Status

Antenna Altitude 2.39	SOG 9.8	COG 123	No Fix
PDOP 2.13	HDOP 1.22	VDOP 1.22	
No. SV/SU 12 / 3	UTC Time 03/08 11:01	Local Time 03/08 11:01	

Radar view

Radar View displays own ship and target ships' status, and their correlations. It is a proportional chart scale showing the current ratio displayed.

The distance between the inner and outer circles (1 grid) is the number displayed on the scale at left bottom. You can adjust the scale to display ships in different distances.










Radar View supports three ship orientation modes:

- **N-up** — North up — The orientation is fixed and true north is always pointing up.
- **H-up** — Head up — The orientation is determined by the direction of own ship's bow.
- **C-up** — Course up — The orientation is determined by the own ship's traveling course.

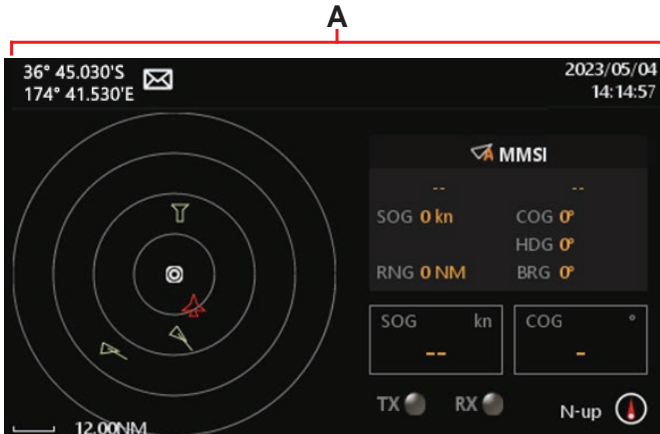
Target symbol description













Symbols for each AIS target displayed on the **Radar View** are described as below:

Own ship		White	Own ship icon.
AIS target		White	Ship equipped with AIS system in the surrounding sea will appear on the Radar View as an AIS target.
Selected Target		White flashing colored frame	Use the arrow keys to select any target on the Radar View. After selection, press  and the detailed information on each target can be viewed.
Dangerous Target		Red	When distance to a ship is smaller than CPA/TCPA, the target will be changing color to RED. Use the arrow keys to select the dangerous target and to view its detailed information.
AtoN (real)		Green plus sign	The icon will be displayed if any AIS AtoN (Aids to Navigation) real station is in the range of reception.
AtoN (virtual)		Green plus sign and undercut	The icon will be displayed if any AIS AtoN (Aids to Navigation) virtual station is in the range of reception.
SAR		Green	The icon will be displayed if any SAR air plane is in the range of reception.
SART		Green cross	The icon will be displayed if any SART message is sent out.
Base station		Green	The icon will be displayed when any AIS base station is in the reception range.

Status bar

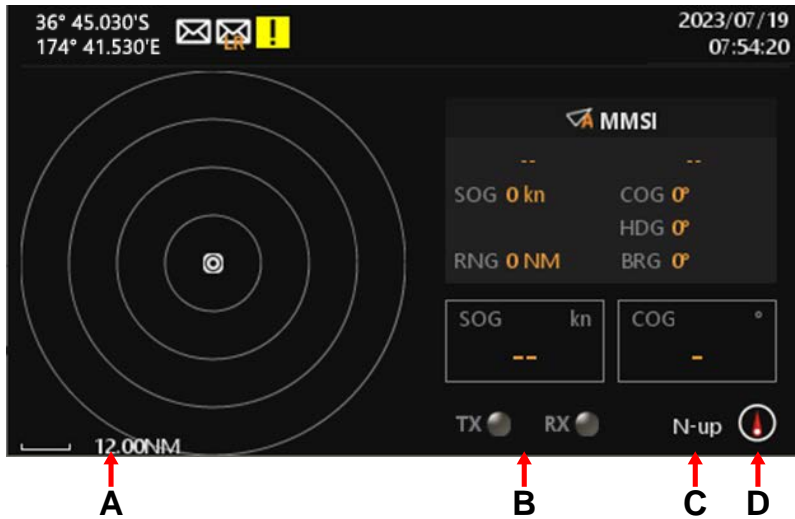
The **Status bar** constantly indicates own ship position, GPS status, SRM, ALR (alert state), and Date (YYYY/MM/DD) and time. It will indicate IL (Inland) and/or B (Blue Sign) when the system is running **INLAND** mode.








	Inbox SRM: Unread incoming SRM
	LR inbox: UnACK long-range interrogation
	Alert state: Active — unacknowledged
	Alert state: Active — silenced
	Alert state: Rectified — unacknowledged
	Alert state: Active — acknowledged
	Caution: Active — caution
	Indicate the system is running INLAND mode
	Low RF Tx power mode
	Indicate Blue Sign device is connected
	Indicate the system is running in silent mode
	Indicate microSD® card detected

Transmission and reception bar

The **Transmission and Reception bar**, at bottom of **Radar view**, constantly displays real time status of AIS transmission and reception, and ship orientation mode.

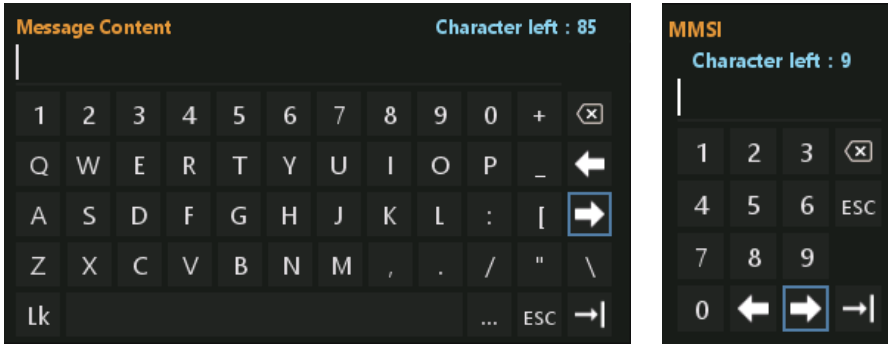


A	Scale	0.05 NM ~ 24 NM	
B	Indicators		<ul style="list-style-type: none">  No flash — No transmission or reception  Flash green — AIS message received  Flash orange — AIS message transmission
C	Ship orientation mode	N-up C-up H-up	North up Course up Head up
D	Compass		Indicates North direction

KEYBOARD

The keyboard will pop up when getting into **AIS Settings**, **Send SRM**, etc. pages.

The following two keyboards are used when entering text and the right one is only for entering numbers.



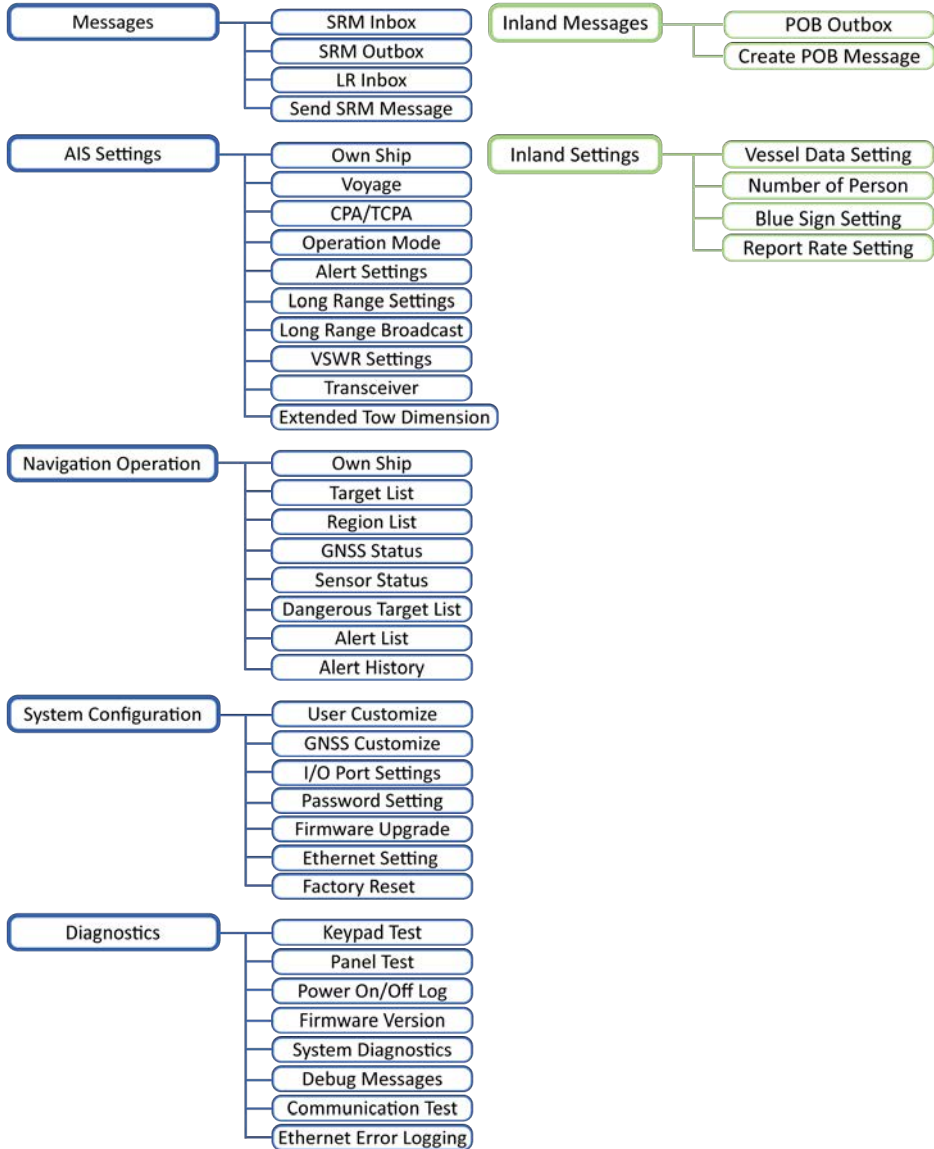
When the keyboard displays, you can use physical arrow keys on the device's front panel to select the characters.

	Use to mode the caret index
	Confirm the entered value. → Note: You can also press for 2 seconds.
	Delete a single character
	Close the keyboard → Note: You can also press .
	Change the keyboard character. → Note: The keyboard character will change back after entering one character.
	Lock the keyboard character

MENU TREE OVERVIEW

Press  to enter the main Menu.

There are 5 menu choices, and additional 2 menu choices for Inland mode. Each menu holds related sub-menu as depicted below.




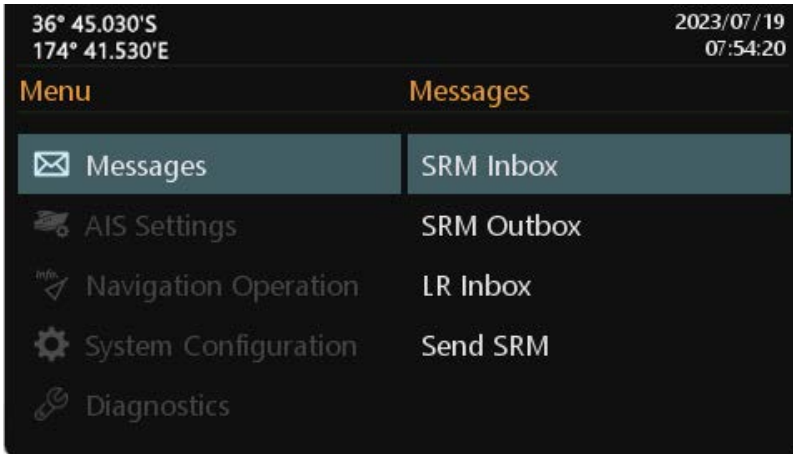
Menu Item Brief Description

Messages	
SRM Inbox	Log of safety related messages (SRM) received
SRM Outbox	Log of safety related messages (SRM) sent
LR INBOX	Log of received inquiry messages from long-range interrogation
Send SRM	Send SRM
AIS settings	
Own Ship	Your vessel setting
VOYAGE	Navigation setting
CPA / TCPA	CPA / TCPA setting
Operation Mode	Configure AIS mode to SOLAS or INLAND, and SART Test Mode
Alert Settings	Enable or disable Alert
Long Range Settings	Long Range settings
Long Range Broadcast	Long Range broadcast channel setting
VSWR Settings	VSWR (voltage standing wave ratio) setting
Transceiver	Configure silent mode and RF Tx power condition and External switch function
Extended Tow Dimension	Setting extended dimension values used by towing vessels. (When Navigation status is set to 12)
Navigation operation	
Own Ship	Your vessel information
Target List	Navigation status and boat information of other AIS-equipped vessels.
Region List	Regional information status
GNSS Status	Display GNSS statuses
Sensor Status	Display sensor statuses
Dangerous Target List	Dangerous ship list
Alert List	Display all activated alert.
Alert History	Log of activated alert

System configuration	
User Customize	Personalization settings
GNSS Customize	GNSS settings
I/O Port Settings	I/O port settings
Password Setting	Password change
Firmware Upgrade	Firmware upgrade
Ethernet Setting	Ethernet setting
Factory Reset	Restore all setting to default
Diagnostics	
Keypad Test	Button key test
Panel Test	LCD panel test
Power On/Off Log	Device activated log
Firmware Version	Firmware version
System Diagnostics	System diagnostics
Debug Messages	Debug messages
Communication Test	Test communication link
Ethernet Error Logging	Display Ethernet Error Logging
Inland messages	
POB Outbox	Log of Person On Board message (RFM55 or IFM16) sent
Create POB Message	Create Person On Board message (RFM55 or IFM16)
Inland settings	
Vessel Data Setting	Configure vessel data
Number of Person	Set number of persons
Blue Sign Setting	Set blue sign settings
Report Rate Setting	Set report rate settings

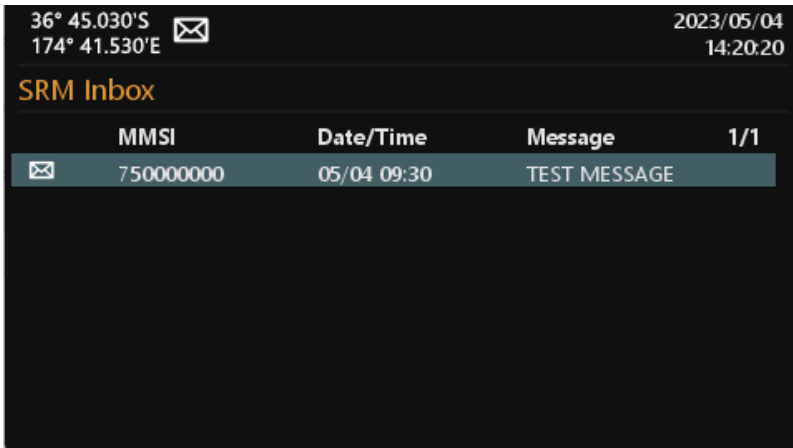
MESSAGES

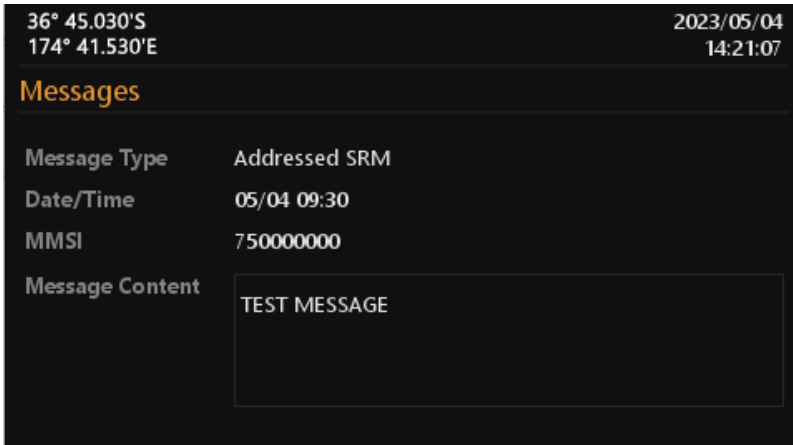
When a SRM (Safety Related Messages) from other AIS equipped vessels is received, the status bar will display , the new message icon.



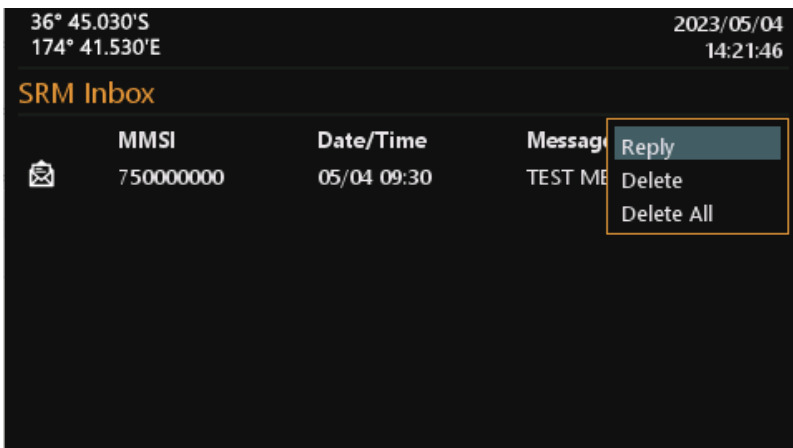
SRM Inbox

You can read received SRM under Inbox. Use   to traverse the message list and highlight your choice. Read the message content by pressing .











When pressing **Fn**, the system will show three options. You can choose to **reply** to the highlighted message, **delete** it or **delete all** messages in **SRM Inbox**. Press **↵** to confirm your choice.



SRM Outbox

You can read all sent SRM under Outbox. Use   to traverse the message list and highlight your choice. Read the message content by pressing . In the Tx column, you can see three different icons:  means the device is still sending the message. After sending the message, the Tx column will show , that means the message has been successfully sent, if there is a failure, it will show .

36° 45.030'S 2023/05/04
174° 41.530'E 14:22:19



SRM Outbox

MMSI	Message	Date/Time	Tx	1/3
751000000	TEST MESSAGE	05/4 09:59	<input type="checkbox"/>	
751000001	TEST MESSAGE	05/4 09:58	<input checked="" type="checkbox"/>	
751000002	TEST MESSAGE	05/4 09:57	<input type="checkbox"/>	

36° 45.030'S 2023/05/04
174° 41.530'E 14:22:55





Messages

MMSI	22222222	Destination MMSI	751000000
Date/Time	05/4 09:59	ACK	NO
Message Type	default		
Message Content	TEST MESSAGE		




When pressing , system will show 2 options. You can choose to **Delete** it or **Delete all** messages in SRM Outbox. Press  to confirm your choice.


Long Range Inbox

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 normal AIS operation range. LONG RANGE Inbox holds all received Long Range Interrogation messages.

36° 45.030'S		2023/05/04		
174° 41.530'E		14:49:26		
LR Inbox				
MMSI	Name	Date/Time	ACK	1/2
750000000	LR-Name-0	05/04 09:59		
750000001	LR-Name-1	05/04 09:58		

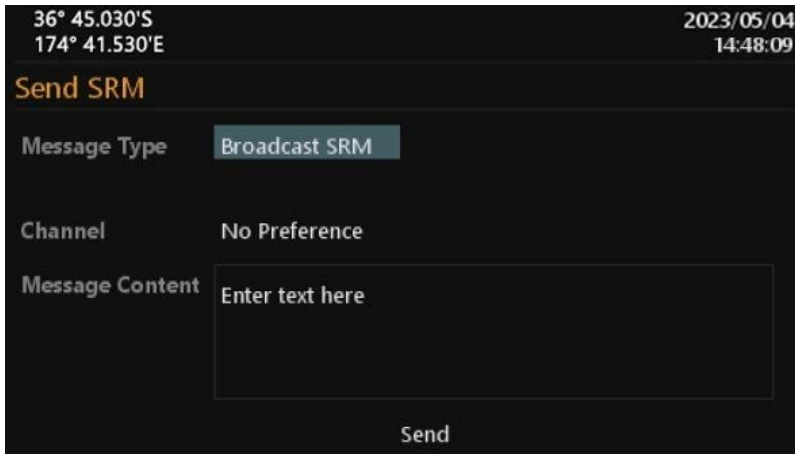
36° 45.030'S	2023/05/04		
174° 41.530'E	15:01:40		
Messages			
Request MMSI	750000000	ACK	NO
Request Name	LR-NAME-0		
Date/Time	05/04 09:59		
Interrogation Area			
Latitude(NE)	20.383333		
Longitude(NE)	123.96667		
Latitude(SW)	19.583334		
Longitude(SW)	123.04995		

Use   to traverse the message list and highlight your choice. Read the message content by pressing .

When pressing , system will ask whether the highlighted message should be acknowledged. Press  to confirm your choice.

Send SRM

This submenu allows the users to compose a Safety Related Message (SRM). Maximum length for the message is 85 characters. **Message Type** gives you the option to send the broadcast message or the addressed message. If the user chooses to send the addressed message, the system will show **MMSI** below the **Message Type**.



36° 45.030'S
174° 41.530'E

2023/05/04
14:48:09

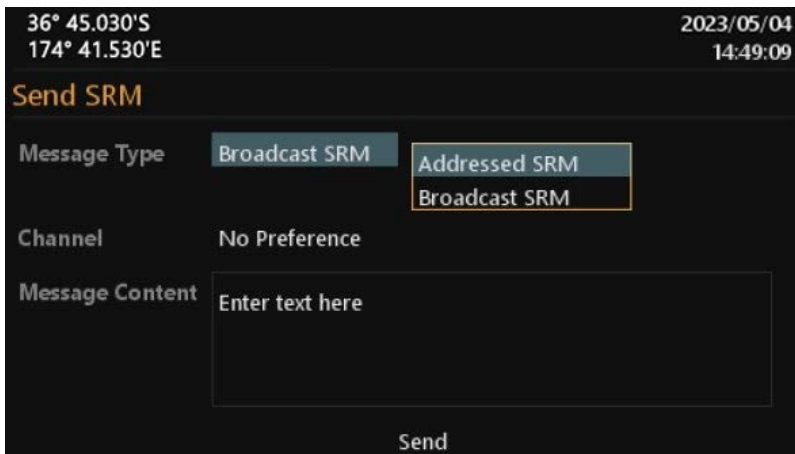
Send SRM

Message Type **Broadcast SRM**

Channel No Preference

Message Content
Enter text here

Send



36° 45.030'S
174° 41.530'E

2023/05/04
14:49:09

Send SRM

Message Type **Broadcast SRM** **Addressed SRM**
Broadcast SRM

Channel No Preference

Message Content
Enter text here

Send

36° 45.030'S 2023/05/04
 174° 41.530'E 14:49:43

Send SRM

Message Type **Addressed SRM**

MMSI 000000000

Channel No Preference

Message Content
 Enter text here

Send

36° 45.030'S 2023/05/04
 174° 41.530'E 14:50:20

Send SRM

Message Type Addressed SRM

MMSI **000000000**

Channel No Preference

Message Content
 Enter text here

Send

MMSI
 Character left : 9

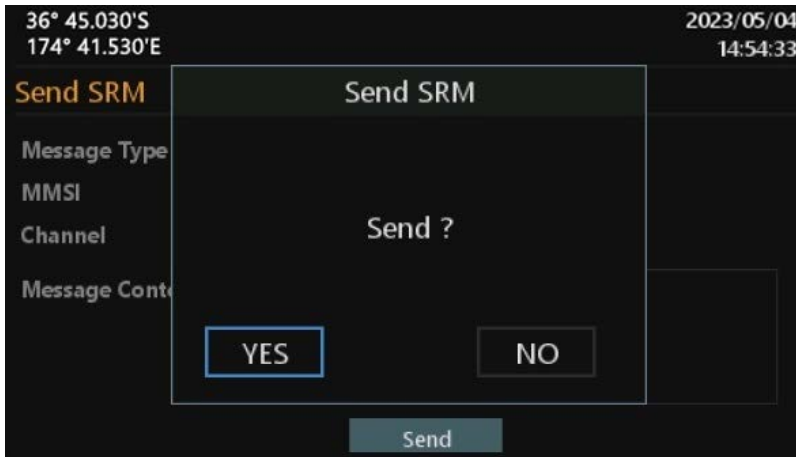
1	2	3	⌫
4	5	6	ESC
7	8	9	
0	⬅	➡	➤

After entering the MMSI number, choose the **Channel**. It gives you the option to send message through channel A, B or both A&B. By **No Preference**, which is the default option, the system will select the channel automatically. Then, compose the message.

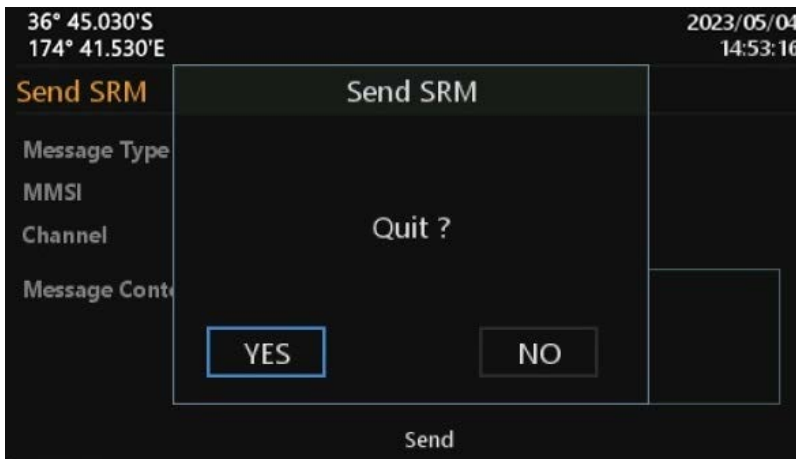
The screenshot shows a dark-themed interface for sending an SRM. At the top, coordinates are displayed as 36° 45.030'S and 174° 41.530'E, and the date/time is 2023/05/04 14:51:19. The title is 'Send SRM'. Below this are four fields: 'Message Type' (Addressed SRM), 'MMSI' (22222221), 'Channel' (No Preference), and 'Message Content' (Enter text here). A dropdown menu is open for the 'Channel' field, showing options: 'No Preference', 'Only Channel A', 'Only Channel B', and 'Both Channel A & B'. A 'Send' button is at the bottom.

The screenshot shows the 'Send Message Content' screen. At the top, coordinates are 36° 45.030'S and 174° 41.530'E, and the date/time is 2023/05/04 15:07:58. The title is 'Send Message Content' with a character count of 'Character left : 85'. Below the title is a virtual keyboard with rows of letters and symbols. The keyboard includes a numeric row (1-0, +, X), a QWERTY row (Q-W-E-R-T-Y-U-I-O-P, _, ←), an ASDFGHJKL row (A-S-D-F-G-H-J-K-L, :, [, →), a ZXCVBNM row (Z-X-C-V-B-N-M, , , /, ", \), and a bottom row (Lk, ..., ESC, →).

To send the message, press the send button on the bottom of the view and the system will ask whether to send the message. Select **YES** to send and return to Messages submenu, **NO** to cancel and stay at this view.

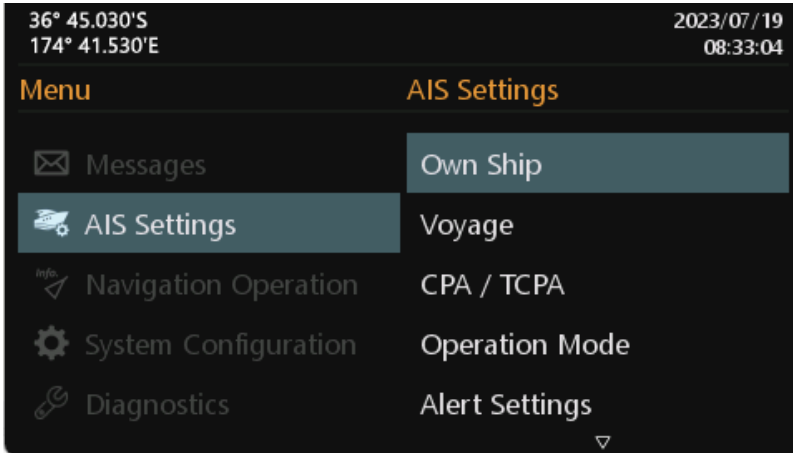


To leave this page, press **Esc** and the system will ask whether to leave this view. Select **YES** to leave, **NO** to stay at this view. For simple use, press **Esc** two times and the system will return to the Messages submenu.



AIS SETTINGS

This menu list provides access to settings that are required during installation of the transponder. There are a total of 9 submenus.



Own Ship

This section is password protected and can only be saved using the password.

The following information about the vessel should be correctly set up by installation prior to operation.


- MMSI
- Ship Name — limited to 20 characters
- IMO
- Call Sign — vessel radio call sign (limited to 7 characters)
- Position of internal GPS antenna — giving the location of the GNSS antenna connected to the AIS transceiver (integrated internal GPS receiver)
- Position of external GPS antenna — giving the location of the GNSS antenna connected to any external position source connected to the AIS transceiver
- Length and Beam — measured length and width of the ship (**INLAND** mode only)

36° 45.030'S 2023/05/04
174° 41.530'E 16:18:01

Own Ship SAVE

MMSI Ship Name --
IMO Call Sign --

Internal Antenna Position (m)
A -- B -- C -- D --
External Antenna Position (m)
A -- B -- C -- D --



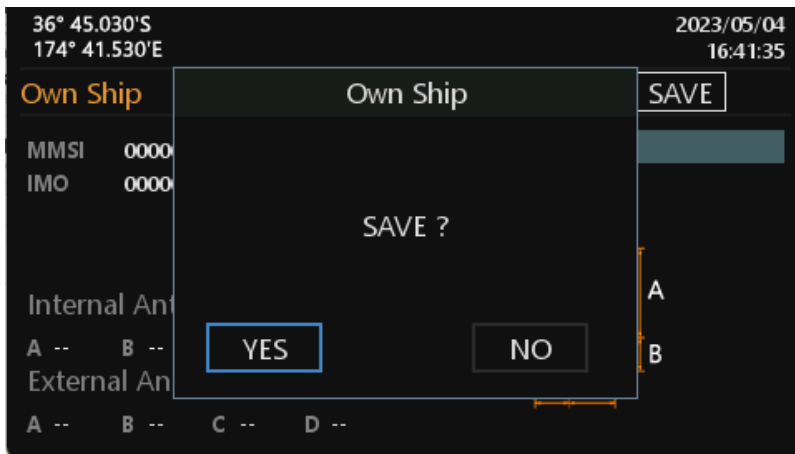
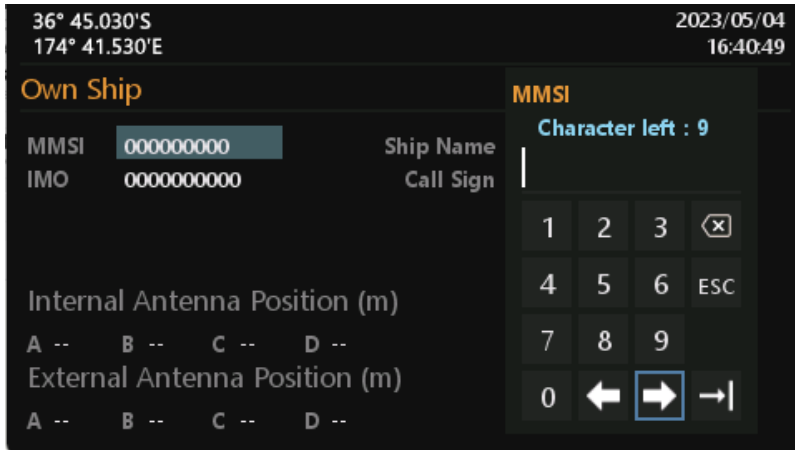
36° 45.030'S IL 2023/05/04
174° 41.530'E 16:39:23

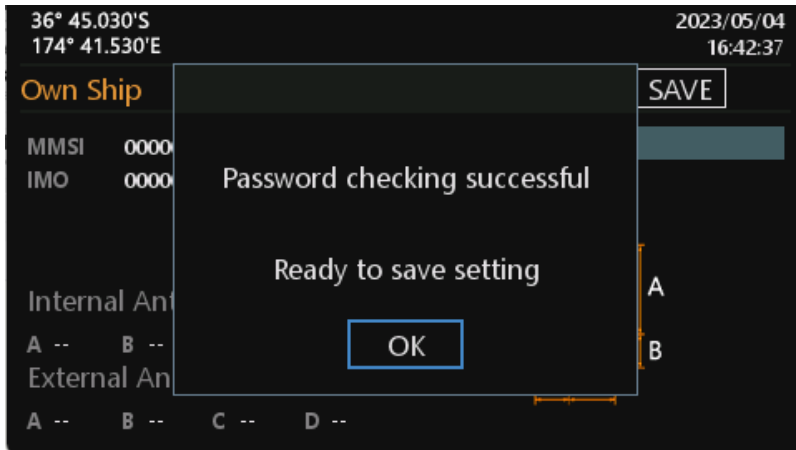
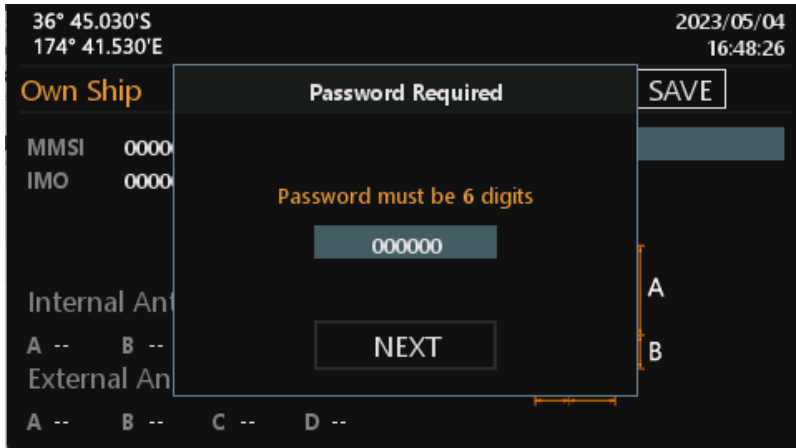
Own Ship(Inland) SAVE

MMSI Ship Name --
IMO Call Sign --

Length and Beam (m)
LS -- BS --
Internal Antenna Position (m)
A -- B -- C -- D --
External Antenna Position (m)
A -- B -- C -- D --







Voyage

In this submenu the following navigational information can be configured:

- Destination — Ship's next destination port (limited to 20 characters).
- ETA Date — Estimated date of arrival at destination (using UTC time).
- ETA Time — Estimated time of arrival at destination (using UTC time).
- Ship Type — use direction keys to select the type of vessel from the list.
- Ship Cargo — use direction keys to select the type of vessel from the list .
- Navigation status — use direction keys to select the suitable status from the list.
- Person — the number of person on board.

36° 45.030'S	2023/05/05	
174° 41.530'E	09:33:34	
Voyage	SAVE	
Destination	--	
ETA Date	mm/dd	Set1
ETA Time	hh:mm	Set2
Ship Type	30 - Vessel Fishing	Set3
Ship Cargo	0 - All ships of this type	Set4
Navigation Status	15 - Undefined	Set5
Draught(m)	25.5	
Person	8191	

⚠ WARNING: If Ship Type is Tanker, by regulation, whenever the ship navigation status is "Moored", the transponder's transmission power is automatically changed to 1W for safety measures.

At the right side of the view, you can see a block (Set1~Set5) when pressing **Fn**, you can input the setting name and then the system will save the current voyage setting to this Set.

Next time, if you want to use the same setting, just select the Set, you saved, and press **↑**. The system will apply the setting to the current voyage value.

36° 45.030'S 2023/05/05
174° 41.530'E 09:46:50

Voyage SAVE

Destination	--	
ETA Date	mm/dd	Set1
ETA Time	hh:mm	Set2
Ship Type	30 - Vessel Fishing	Set3
Ship Cargo	0 - All ships of this type	Set4
Navigation Status	15 - Undefined	Set5
Draught(m)	25.5	
Person	8191	

36° 45.030'S 2023/05/05
174° 41.530'E 09:54:05

Voy **Input the setting name** Character left : 7

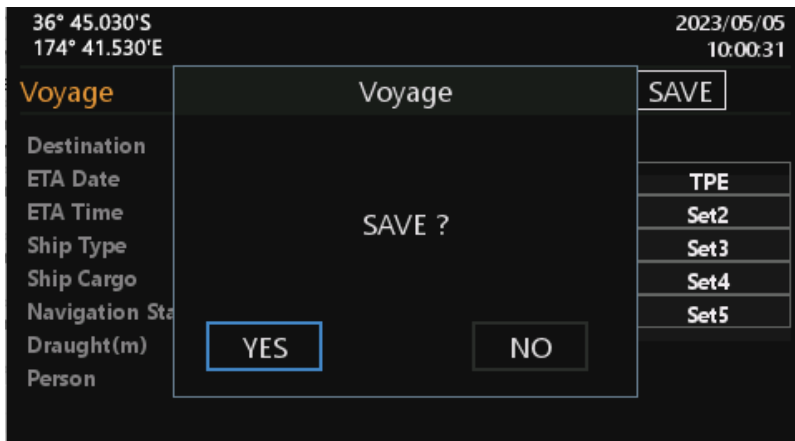
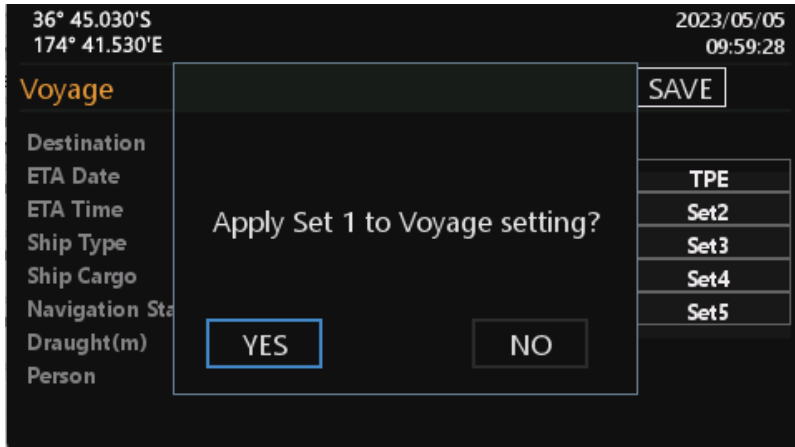
Des TPE

ETA	1	2	3	4	5	6	7	8	9	0	+	⌫
Ship	Q	W	E	R	T	Y	U	I	O	P	_	⬅
Nav	A	S	D	F	G	H	J	K	L	:	[➡
Dra	Z	X	C	V	B	N	M	,	.	/	"	\
Pers	Lk											ESC ➡

36° 45.030'S 2023/05/05
174° 41.530'E 09:55:37

Voyage SAVE

Destination	--	
ETA Date	mm/dd	TPE
ETA Time	hh:mm	Set2
Ship Type	30 - Vessel Fishing	Set3
Ship Cargo	0 - All ships of this type	Set4
Navigation Status	15 - Undefined	Set5
Draught(m)	25.5	
Person	8191	



CPA/TCPA

In this submenu the closest point of approach (CPA) and time to CPA (TCPA) can be set. The vessels with insufficient CPA and TCPA will be displayed in the dangerous list and radar view with red color.


- CPA — in nautical miles
- TCPA — in minutes

36° 45.030'S
174° 41.530'E
2023/05/05
10:56:47

CPA / TCPA SAVE

CPA (NM) 5

TCPA(min) 10

To save the setting, select the SAVE button in the view and press . The system will ask whether the changes should be saved. Select YES to save or NO to discard and return to AIS settings submenu.

Operation mode

You can configure the transponder to operate in **SOLAS** or **INLAND** mode. Each mode has specific submenu and menu options. Displaying the SART Test on the V5043 screen can be enabled or disabled by configuration setting (ON/OFF) as well.

36° 45.030'S
174° 41.530'E
2023/05/05
11:15:12

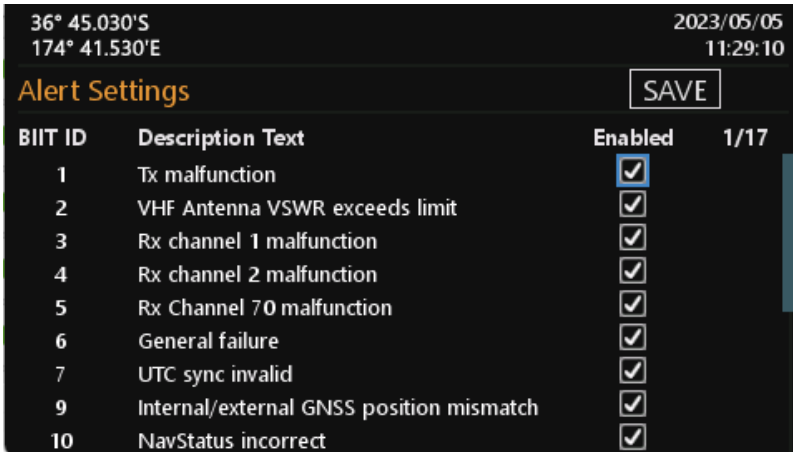
Operation Mode SAVE

AIS Mode SOLAS

SART Test Mode OFF

Alert Settings

This submenu can be used to enable or disable ALF sentence. For instance, if an ALF sentence is not enabled, the corresponding alarm would not activate.



36° 45.030'S
174° 41.530'E
2023/05/05
11:29:10

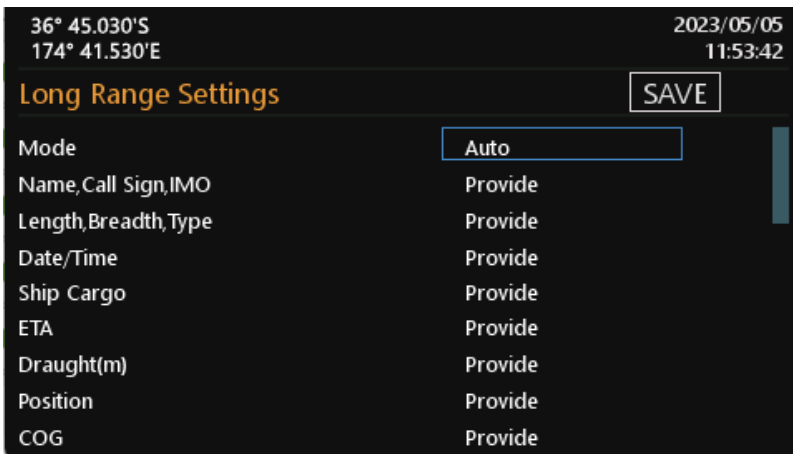
Alert Settings SAVE

BIIT ID	Description Text	Enabled	1/17
1	Tx malfunction	<input checked="" type="checkbox"/>	
2	VHF Antenna VSWR exceeds limit	<input checked="" type="checkbox"/>	
3	Rx channel 1 malfunction	<input checked="" type="checkbox"/>	
4	Rx channel 2 malfunction	<input checked="" type="checkbox"/>	
5	Rx Channel 70 malfunction	<input checked="" type="checkbox"/>	
6	General failure	<input checked="" type="checkbox"/>	
7	UTC sync invalid	<input checked="" type="checkbox"/>	
9	Internal/external GNSS position mismatch	<input checked="" type="checkbox"/>	
10	NavStatus incorrect	<input checked="" type="checkbox"/>	

Long Range Settings

This section is password protected and can only be saved using the password. This option provides user choices to auto-response remote interrogation and settings of the response information.

You can either set **Mode** to **Auto** or **Manual**. The setting for the rest of information is either **Provide** or **Not Provide**.



36° 45.030'S
174° 41.530'E
2023/05/05
11:53:42

Long Range Settings SAVE

Mode	Auto
Name, Call Sign, IMO	Provide
Length, Breadth, Type	Provide
Date/Time	Provide
Ship Cargo	Provide
ETA	Provide
Draught(m)	Provide
Position	Provide
COG	Provide

Long Range Broadcast

This section is password protected and can only be saved using the password.

Class A transmits Message 27 every 3 minutes through the channels alternately. Provided here are the options to change the transmitting channel for Message 27.

→ *Note: Default values are 75 or 76.*

36° 45.030'S	2023/05/08
174° 41.530'E	09:50:52
Long Range Broadcast SAVE	
Long Range AIS Broadcast Channel 1	75
Long Range AIS Broadcast Channel 2	76

VSWR Settings

The VSWR setting function allows the fine-adjustment of VSWR threshold according to the cable length and VHF antenna characteristics.

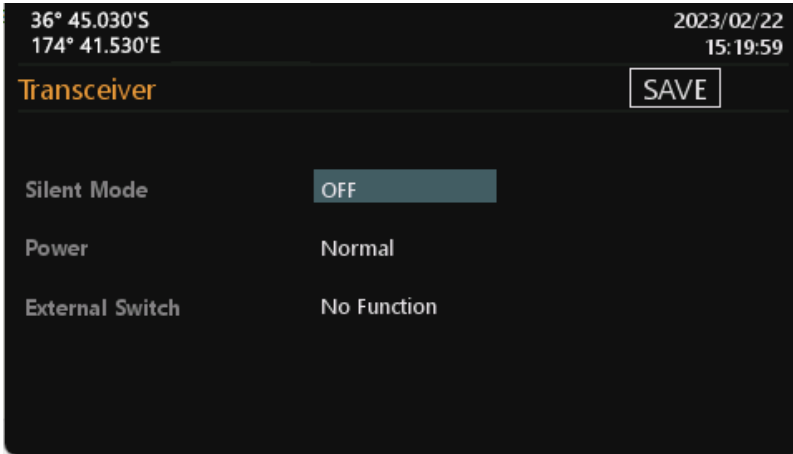
36° 45.030'S	2023/05/08
174° 41.530'E	09:56:00
VSWR Settings SAVE	
System VSWR	0.000 V
Available Threshold Range	0.0 ~ 3.3 V
VSWR Threshold	1.30

Transceiver

This section is password protected and can only be accessed using the password.

The submenu allows the users to switch on or off the transmission and enable to switch the transmission power between 12.5W, as "normal", and 1W.

The External Switch (**SOLAS Mode Only**) allows the user to set "No Function" and "Low TX Power Mode" function for "BLUE_SIGN" connector on Junction Box.



Extended Tow Dimension

This option provides users to set extended dimension values used by towing vessels.

Under the following two conditions, this option will appear in the menu:

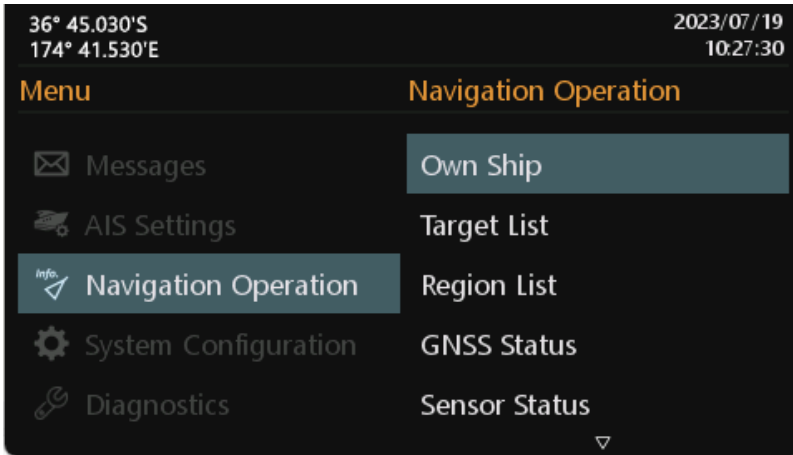
- 1 AIS operation mode is **INLAND** mode or
- 2 in **SOLAS** mode, and the Navigational Status is 12 = power-driven vessel pushing ahead or towing alongside.



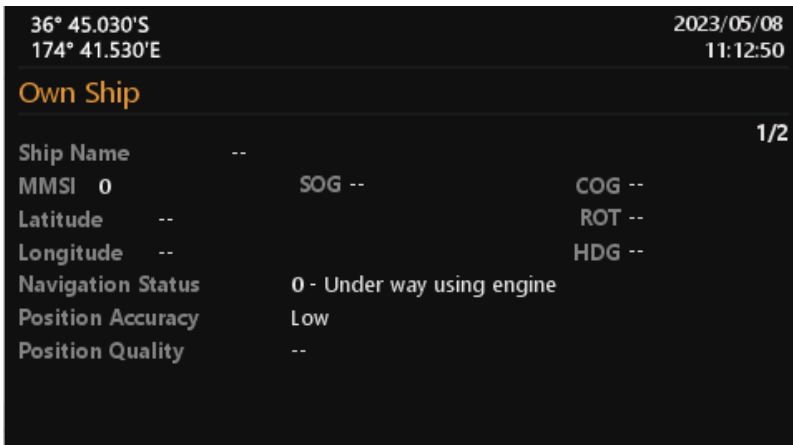
NAVIGATION OPERATION

Own ship

This option displays the full information on your ship, including both dynamic and static data. Use direction keys to change between dynamic and static information.



Static data and Dynamic data



36° 45.030'S		2023/05/08	
174° 41.530'E		11:13:42	
Own Ship			
Call Sign	--	EPFD	Undefined
IMO	0	RAIM	--
Ship Type	0		
Ship Cargo	0 - All ships of this type		
Destination	--		
ETA	--	Draught(m)	0.0
Dimension	--	Person	0
Manoeuvre indicator	Not available	DTE	Not available

Inland Vessel Information

The following information is only available under INLAND mode.










36° 45.030'S		2023/05/08	
174° 41.530'E		11:15:43	
Own Ship			
ENI	--	Quality of Speed	Low
Ship Length(m)	0.0	Quality of Course	Low
Ship Beam(m)	0.0	Quality of Heading	Low
ERI Ship Type	--		
Blue cones	0	Crew members	0
Draught(m)	0.0	Passengers	0
Load Status	Loaded	Shipboard personnel	0
Blue Sign	Disabled	Persons on Board	0

Target List

This option displays all received AIS information of other vessels including dynamic and static information.

Use direction keys to select AIS target and then press  to go through dynamic and static information of the selected vessel.

There are two pages of ship details for **SOLAS** mode and another one page for **INLAND** mode.

36° 45.030'S		2023/05/08		
174° 41.530'E		11:26:50		
Target List				
Name/MMSI	AGE	BRG	RNG	1/12
 BARLIAN T1201	23s	125	4.31	
 TB SOL 1010	12s	325	5.57	
 440982000	9s	27	12.52	
 477770700	3m10s	164	1.84	
 CRYSTAL RIVER	1s	59	2.50	
 STAR ADMIRAL	10m23s	210	7.85	
 525009342	33s	188	2.50	
 538008570	2m13s	19	3.56	
 563051600	50s	12	9.85	

36° 45.030'S		2023/05/08	
174° 41.530'E		11:28:19	
Target Detail			
Ship Name	--		
MMSI	--	SOG --	COG --
Latitude	--		ROT --
Longitude	--		HDG --
Navigation Status	0 - Under way using engine		
Position Accuracy	Low		
Position Quality	--		BRG --
CPA (NM)	--	TCPA(min) --	RNG --

1/2

Use direction keys to continue reading the dynamic and static information of the selected vessel.
 Additional inland information is available under **INLAND** mode.

36° 45.030'S
174° 41.530'E
IL
2023/05/08
13:30:53

Target Detail

ENI	--	Quality of Speed	Low
Ship Length(m)	0.0	Quality of Course	Low
Ship Beam(m)	0.0	Quality of Heading	Low
ERI Ship Type	--		
Blue cones	--	Crew members	0
Draught(m)	0.0	Passengers	0
Load Status	Loaded	Shipboard personnel	0
Blue Sign	Disabled	Persons on Board	0

3/3

Sorting vessels

In the list, press **Fn** will open the pop-up window and user can sort the list according to vessels' MMSI, direction (BRG), or distance (RNG). Also user can choose what kinds of ship type whether should be displayed in the target list.


In the screenshot of the Target List, one subtitle has different color between others indicates the current sorting method.

36° 45.030'S
174° 41.530'E
2023/05/08
13:31:50

Target List

Sorting	Filter
<input checked="" type="checkbox"/> MMSI	<input checked="" type="checkbox"/> All
<input type="checkbox"/> BRG	<input checked="" type="checkbox"/> Base Station
<input type="checkbox"/> RNG	<input checked="" type="checkbox"/> SAR
	<input checked="" type="checkbox"/> Class A
	<input checked="" type="checkbox"/> Class B
	<input checked="" type="checkbox"/> AtoN

Region List

The region list displays all saved region areas. Use direction keys to traverse the list. Press  enables you to read the highlighted region information.

36° 45.030'S	2023/05/08				
174° 41.530'E	15:05:53				
Region List					
In Use	LAT(NE)	LO(NE)	LAT(SW)	LO(SW)	1/1
<input type="checkbox"/>	23° 30.0000'N	121° 30.0000'E	19° 30.0000'N	122° 30.0000'E	

36° 45.030'S	2023/05/08		
174° 41.530'E	15:06:39		
Region Detail			
Latitude(NE)	20° 30.0000'N	Power	High
Longitude(NE)	123° 30.0000'E	Source	ACA sentence
Latitude(SW)	19° 30.0000'N	TX/RX Mode	TxA/TxB/RxA/RxB
Longitude(SW)	122° 30.0000'E		
Only Channel A	2022	Bandwidth	0
Only Channel B	2061	Bandwidth	0
Transition Zone(NM)	5		

Editing or Adding region content

You can add or modify the region area setting by pressing **Fn** at the region list page. Use direction keys to select the field to edit, then press **←** to enter the value.

36° 45.030'S 2023/05/08
174° 41.530'E 15:12:25

Region List

In Use	LAT(NE)	LON(NE)	LAT(SW)	LAT(SW) 1/1
<input type="checkbox"/>	23° 30.0000'N	121° 30.0000'E	19° 30.0000'N	<ul style="list-style-type: none">AddEditDelete

36° 45.030'S 2023/05/08
174° 41.530'E 15:12:47

Region Detail

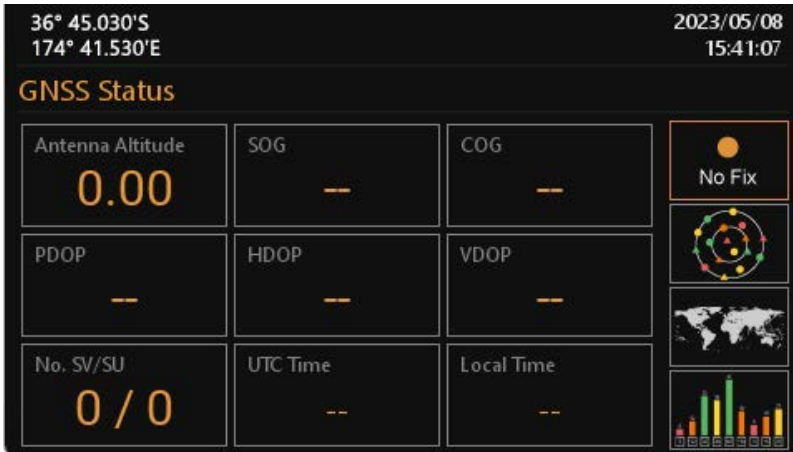
SAVE

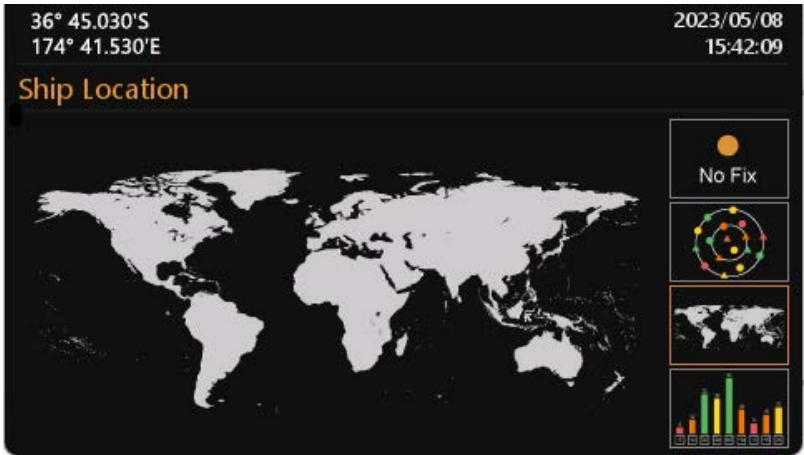
Latitude(NE)	00° 00.0000'N	Power	High
Longitude(NE)	000° 00.0000'E	Source	Manual input
Latitude(SW)	00° 00.0000'N	TX/RX Mode	TxA/TxB/RxA/RxB
Longitude(SW)	000° 00.0000'E		
Only Channel A	0	Bandwidth	0
Only Channel B	0	Bandwidth	0
Transition Zone(NM)	0		

GNSS Status

In this submenu the following GNSS information is displayed:

- GNSS Status — show device's GNSS data
- GNSS Constellation — GNSS source location distribution
- Ship Location
- Satellite Signal to Noise Ratio — GNSS source signal magnitude





Sensor Status

36° 45.030'S	2023/05/08
174° 41.530'E	15:53:34
Sensor Status	
Position Status	External DGNSS in use
Position Quality	Position > 10m
UTC Status	Invalid
COG Status	Invalid
SOG Status	Invalid
Heading Status	Invalid
ROT Status	Invalid

Display sensor statuses:

Sensor	Status
Position Status	External position source other than GNSS Internal GNSS in use External GNSS in use Internal DGNSS in use (corrected; beacon) Internal DGNSS in use (corrected; Message 17) External DGNSS in use
Position Quality	No position Manual position Dead reckoning position Valid position with no time stamp Position > 10 m Position with RAIM > 10 m Position <= 10 m Position with RAIM <= 10 m Outdated position > 200 m
UTC Status	Valid / Invalid (see Note)
COG Status	Internal COG / External COG / Invalid
SOG Status	Internal SOG / External SOG / Invalid
Heading Status	Valid / Invalid
ROT Status	Valid / Other ROT / Invalid
<p>➔ <i>Note: When the AIS is not connected with internal GPS, UTC is lost and time is unsynchronized, then the V5043 will continue operation using indirect or semaphore synchronization.</i></p>	

Dangerous Target List

With the setup of closest point of approach (CPA) and time to CPA (TCPA), this submenu provides an efficient way to monitor vessels with insufficient CPA and TCPA. The dangerous targets can also be observed on radar view (with red color).



Use direction keys to traverse the list and press  to read information of the selected vessel.





	Name/MMSI	CPA	TCPA	1/2
	BARLIAN T 1201	5	10	
	TB SOL 1010	10	15	



Alert List

V5043 features SART/MOB alarm that can appear any time during operation.

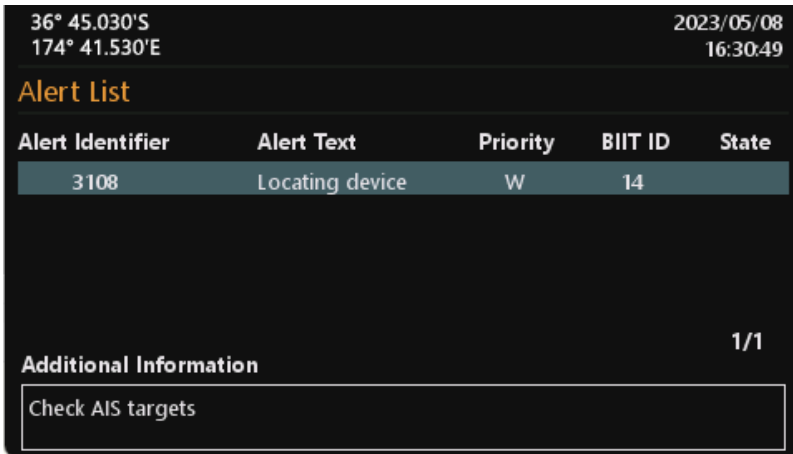
When SART/MOB message is received, the  or  icon will appear in the status bar with beeping sounds twice from the buzzer.

There are 2 ways to access the Alert List: either through Main Menu/Navigation Operation/Alert List or use the hot key by holding  for 3 seconds and the system will enter the **Alert List** screen.

Another hot key in the **Alert List**, by pressing  you can select the alert between the first and the last. The list shows all current AIS alerts and their status. Use direction keys to navigate the list.

You can acknowledge (ACK) the alert message by pressing . The system will ask for confirmation if the chosen alert should be acknowledged. If the alert has not been acknowledged, an indication icon  will appear in the status bar until all acknowledgments are made.

The transponder performs a function self-check continuously. If a self-check fails an alarm will occur. The Appendix shows all possible alarm scenarios.



36° 45.030'S 2023/05/08
174° 41.530'E 16:30:49

Alert List

Alert Identifier	Alert Text	Priority	BIIT ID	State
3108	Locating device	W	14	

1/1

Additional Information

Check AIS targets

Table — BAM Alert Instance

Alert ID	Alert text	Additional information	Prio	Cat	Escal	BIIT ID
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	34
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		7
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:**

- Alert priority (Prio): W (Warning) C (Caution)
- BIIT ID 1 is generated if there is a malfunction in the transmitter hardware or the MMSI is set to "0".

Table — Alert state and audible announcements for warnings






Alert state	Visual presentation	Audible announcement
V: active – unacknowledged		2 short audible signals and repeated as a warning after 3 minutes
S: active – silenced		None
A: active – acknowledged		None
U: rectified – unacknowledged		None

Table — Alert state and audible announcements for cautions

Alert state	Visual presentation	Audible announcement
A: active		None

Alert History

This submenu lists all recorded alarm and its time of occurrence.

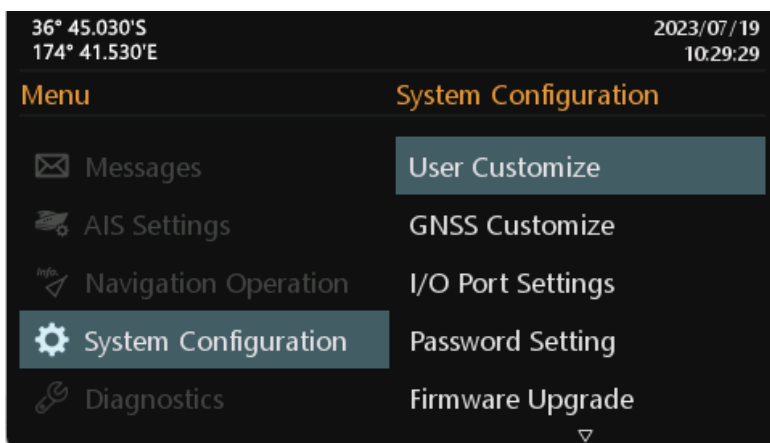
36° 45.030'S		2023/05/08	
174° 41.530'E		16:47:32	
Alert History			
Alert Identifier	BIIT ID	Text	Date/Time
3108	14	Locating device	05/08 16:40

SYSTEM CONFIGURATION

System configuration provides access to user configurable preferences for V5043. All user settings are stored within the transponder and will be maintained even if the power supply is switched off.

After the setting is done, press **SAVE** button in the view and the system will ask whether the changes should be saved.

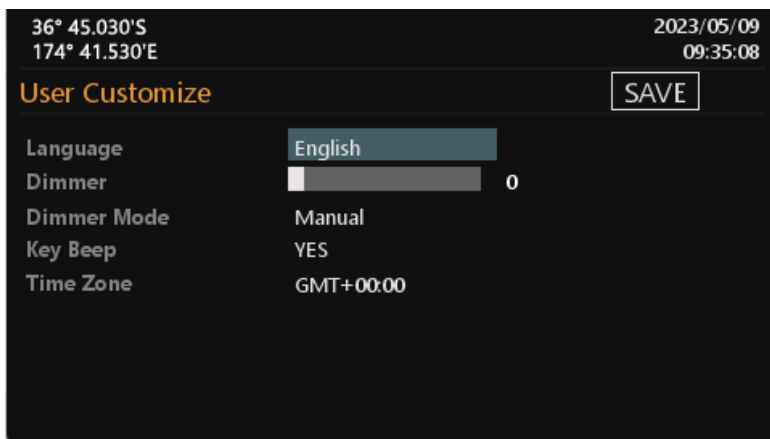
Select **YES** to save or **NO** to discard and return to the **System Configuration** submenu.



User Customize

Customize provides personalization settings:

- Language — select the user interface language from the available language options
- Dimmer — brightness setting from 0 (low) to 10 (high)
- Dimmer Mode — set the mode to **Auto** or **Manual**
- Key Beep — turn on or off the key beep
- Time Zone — set the time zone



GNSS Customize

This submenu allows the user to change the supplied voltage of the GNSS antenna between 3.3 V or 5 V and choose the **GNSS system**. You can also switch the **Operating Altitude**.

36° 45.030'S
174° 41.530'E
2023/05/09
09:37:56

GNSS Customize SAVE

GNSS Antenna Feeding Voltage 3.3V

Operating Altitude At sea level

GNSS System

GPS GLONASS BeiDou Galileo

I/O Port Settings

This option provides an overview of baud rates and checksum on all ports.

36° 45.030'S
174° 41.530'E
2023/12/12
15:43:27

I/O Port Settings SAVE

Port	Baud Rate	Checksum
PILOT (front)	38400	Required
PILOT (rear)	38400	Required
DISP	38400	Required
Long Range(LR)	38400	Required
DGNSS	38400	Required
Sensor 1	4800	Required
Sensor 2	4800	Required
Sensor 3	4800	Required
USB		Required

Password Setting

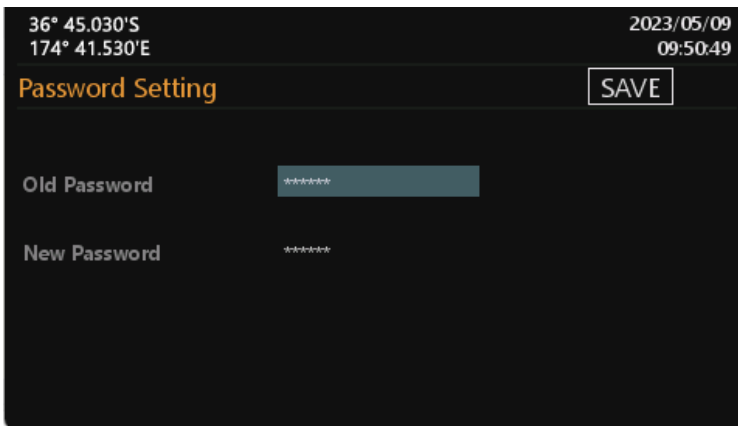
This submenu enables users to change user password. Certain important information stored within the transponder can only be changed with the password.

Password is required to access the following chapters:

- Own ship — contains information about MMSI, vessel name, IMO, call sign and dimension.
- Long Range Settings
- Long Range Broadcast
- Transceiver — enables the option to activate/deactivate AIS transmission
- I/O Port Settings — about baud rate configuration of sensors

Use direction keys to select **Old Password**, **New Password** and then press  to enter value.

To save the settings, press SAVE button in the view and the system will ask whether the changes should be saved. Select YES to save or NO to discard and return to System Configuration submenu.



The screenshot shows a dark-themed interface for 'Password Setting'. At the top left, it displays coordinates '36° 45.030'S' and '174° 41.530'E'. At the top right, it shows the date '2023/05/09' and time '09:50:49'. The title 'Password Setting' is in orange, and a 'SAVE' button is in the top right. Below the title, there are two input fields: 'Old Password' and 'New Password', both containing masked characters (asterisks).

Firmware Upgrade

This option provides users to upgrade the transponder firmware version.



The screenshot shows a dark-themed interface for 'Firmware Upgrade'. At the top left, it displays coordinates '36° 45.030'S' and '174° 41.530'E'. The title 'Firmware Upgrade' is in white. Below the title, there is a table with four columns: 'Select', 'Device', 'Old version', and 'New version'. The 'New version' column shows '0/0'. Below the table, it says 'Estimated time 0m0s'. A message 'Please insert micro_SD card into the device.' is displayed above a progress bar. At the bottom, there is a 'Start' button.

Select	Device	Old version	New version
			0/0

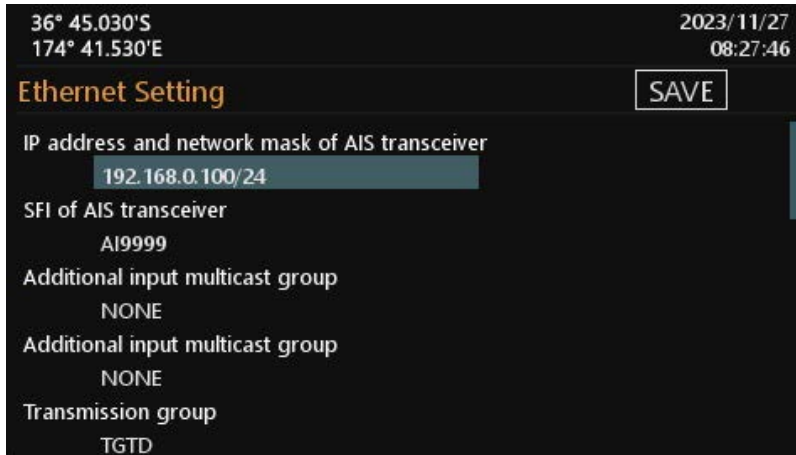
Estimated time 0m0s

Please insert micro_SD card into the device.

Start

Ethernet Setting

The default IP address and Mask is **192.168.0.100/24**. Input groups NAVD, TGTD and SATD are always enabled.



In this submenu the following Ethernet settings can be configured:

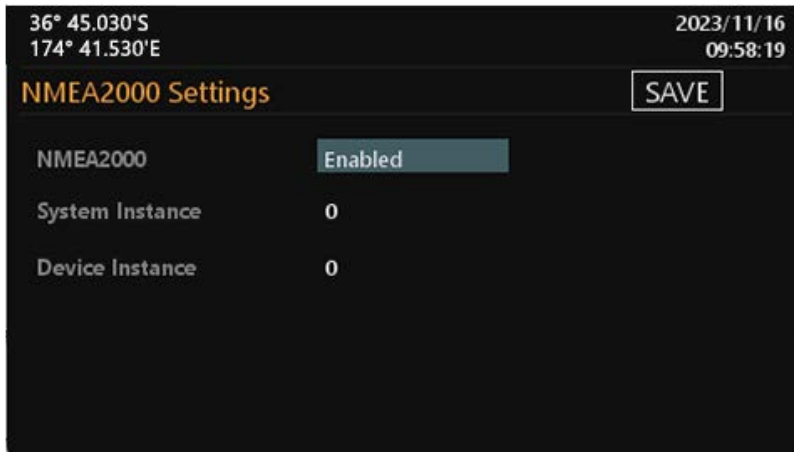
- IP address and network mask of AIS transceiver. Valid IP address ranges are shown as below:
 - 10.0.0.0 ~ 10.255.255.255 (10/8 prefix)
 - 172.16.0.0 ~ 172.31.255.255 (172.16/12 prefix)
 - 192.168.0.0 ~ 192.168.255.255 (192.168/16 prefix)
- SFI (System Function ID) of AIS transceiver — SFI Range for AIS is **AI0000 ~ AI9999**. If SFI is **AI9999** (default), V5043 will not send data to Ethernet.
- Additional input multicast group — This setting is used for additional input groups.
- Transmission group
- SFI for Primary position sensor
- SFI for Secondary position sensor
- SFI for Primary SOG/COG sensor
- SFI for Secondary SOG/COG sensor
- SFI for Primary heading sensor
- SFI for Secondary heading sensor
- SFI for Primary ROT sensor
- SFI for Secondary ROT sensor
- SFI for Primary AIS Control
- SFI for Secondary AIS Control
- SFI for Primary alert command source
- SFI for Secondary alert command source

Table – Input transmission groups with applicable sentences

Tx group	Multicast address	Port	Typical talker ID	Typical sentences	Message type
NAVD	239.192.0.4	60004	GA, GP, GN, LC, IN, HE, TI	DTM, GBS, GNS, RMC, VBW, VTG, GGA, GLL HDT, THS, ROT	SBM
NAVD	239.192.0.4	60004	EC, EI, IN	ABM, ACA, AIR, BBM, SSD, VSD	CRP
TGTD	239.192.0.2	60002	RA	ABM, ACA, AIR, BBM, SSD, VSD	CRP
SATD	239.192.0.3	60003	HE	HDT, THS	SBM
PROP	239.192.0.8	60008	Proprietary	PAMC	SBM

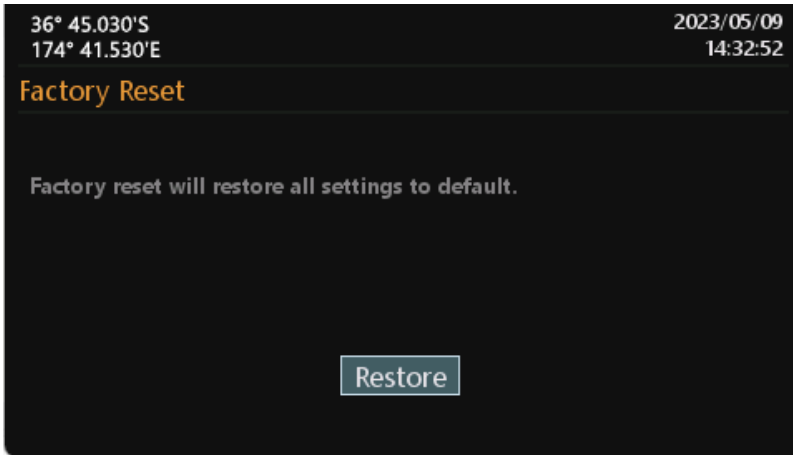
NMEA 2000® Settings

This page provides users with the option to enable or disable NMEA 2000®, as well as configure **System Instance** and **Device Instance** settings.



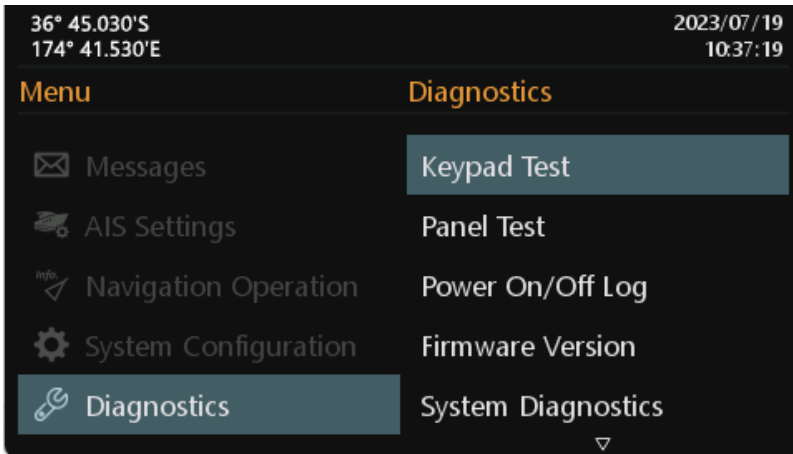
Factory Reset

This page allows the user to restore the default factory settings. It will restore the system preference settings and AIS settings.



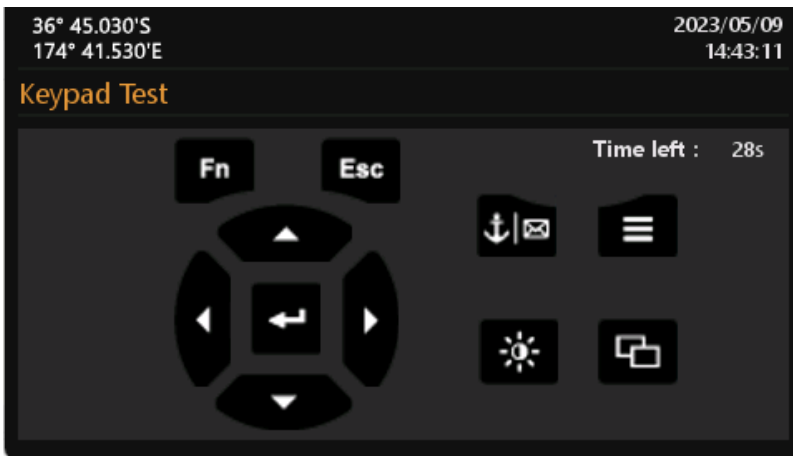
DIAGNOSTICS

This submenu provides users to check system statuses. There are a total of seven check options.








Keypad Test

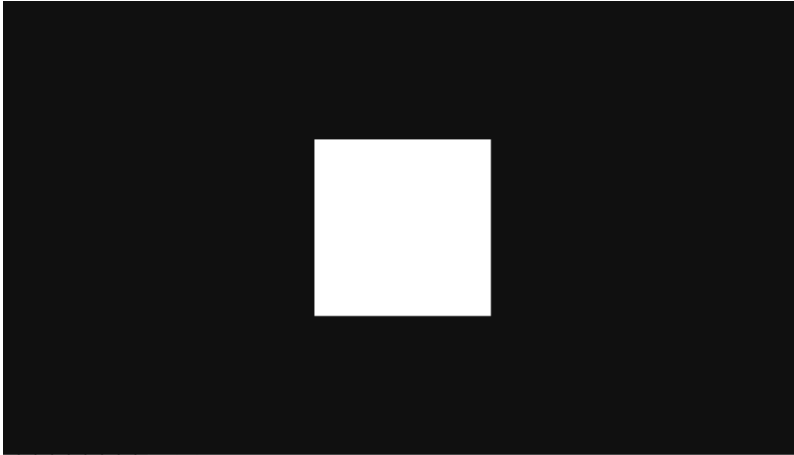
This option provides keyboard testing. Pressing button during testing, a corresponding button on the screen will response. After all buttons are tested, a message will indicate. Press OK to exit. To quit test without completing, wait for 30 seconds and the system will return to the Diagnostics submenu.



Panel Test

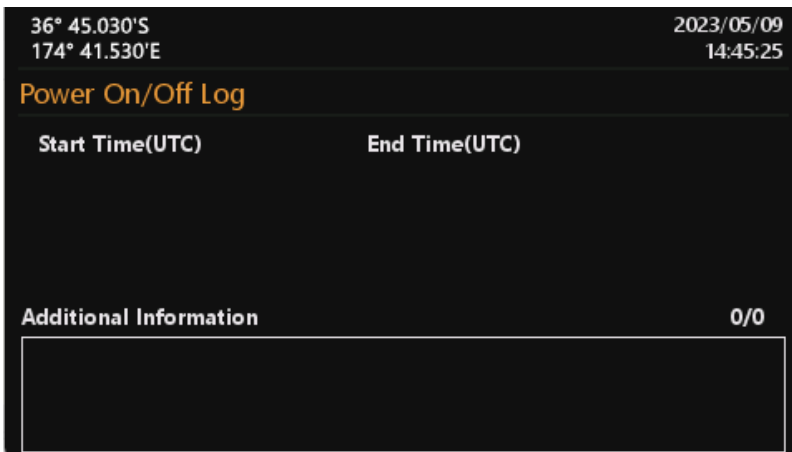
In the submenu, users can test the brightness of the screen.

Use   to switch the white cube between different sizes. Use   to test different stages of brightness. To exit the function, press .



Power On/Off Log

This option provides activation and silent mode history. (Any event less than 15 minutes would not be recorded in the history)




Firmware Version

Provide model name, transponder firmware, display firmware, etc.

36° 45.030'S	2023/05/09
174° 41.530'E	14:47:08
Firmware Version	
Product	V5043 CLASS A AIS TRANSCEIVER
Transponder Firmware	--
Display Firmware	--
Company	Navico Inc.
Website	https://www.navico-commercial.com
S/N	--

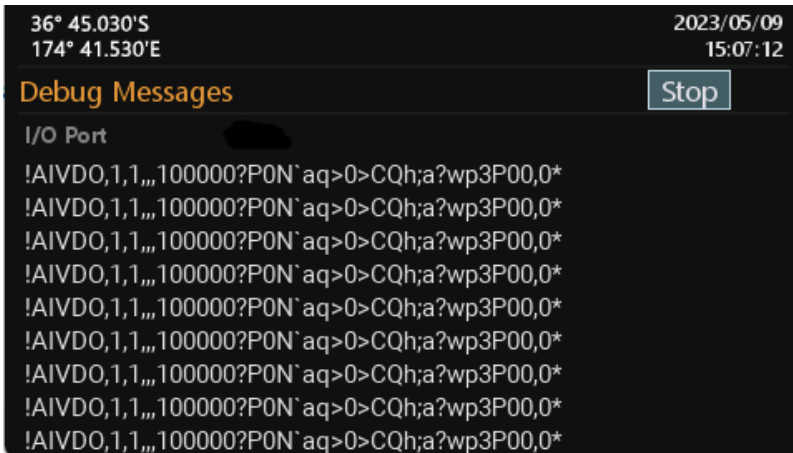
System Diagnostics

This option provides users to simply check the transponder condition. Press  the system will reset the time and count value.

36° 45.030'S	2023/05/09
174° 41.530'E	15:01:33
System Diagnostics	
Start Time :	2023/05/09 15:01:18
Is vessel MMSI valid?	—
Is GNSS position fixed?	—
System VSWR	0.003 V
Received messages channel A	0
Received messages channel B	0
Transmitted messages channel A	0
Transmitted messages channel B	0

Debug Messages

This page displays NMEA 0183 sentences output by AIS.



Communication Test

Communication between V5043 and other Class A device can be tested. The procedure starts by transmitting Message 10 to an addressed Class A MMSI. The addressed MMSI, once received Message 10, will return Message 11. The test is then complete when the transponder successfully receives the Message 11.

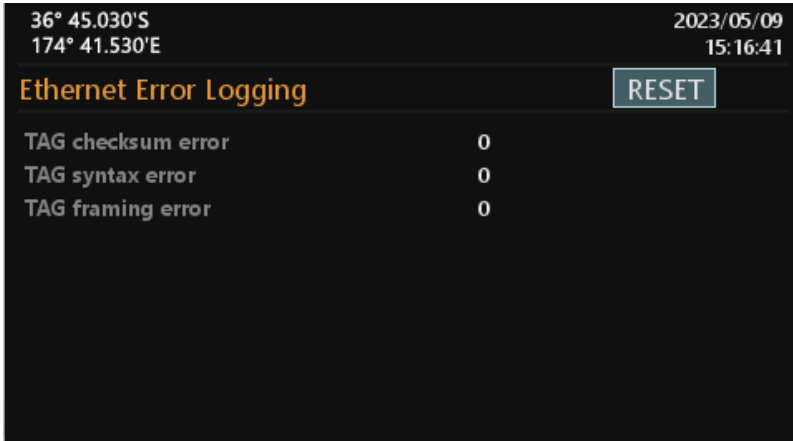


Press **Fn** to start the communication test. The system will show a target list that only has targets with Class A type. Use direction keys to select a target and then press **↩** to start the transmission of Message 10.

Ethernet Error Logging

This option provides users to check the counts of errors detected in processing datagrams containing IEC 61162-1 sentences from Ethernet.

- TAG checksum error;
- TAG syntax error (line length, use of delimiters, invalid characters);
- TAG framing error (incorrect start or termination of TAG block);

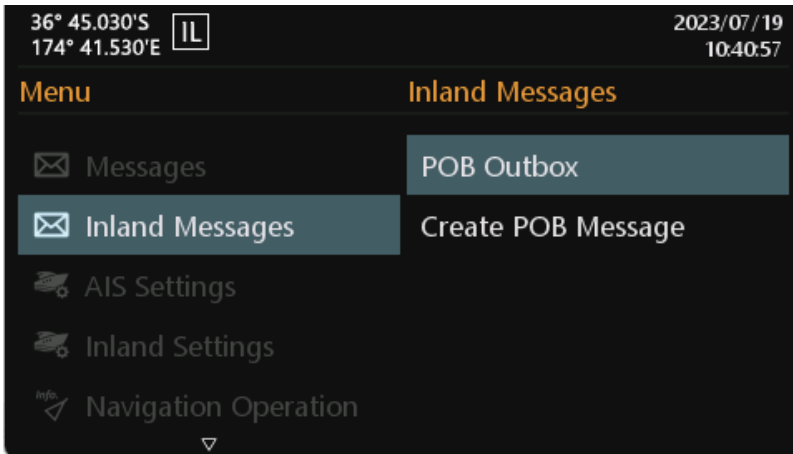


The screenshot displays a dark-themed interface for Ethernet Error Logging. At the top left, the coordinates 36° 45.030'S and 174° 41.530'E are shown. At the top right, the date 2023/05/09 and time 15:16:41 are displayed. The main title 'Ethernet Error Logging' is in orange text, with a 'RESET' button to its right. Below the title, a table lists three error types with their respective counts, all of which are 0.

TAG checksum error	0
TAG syntax error	0
TAG framing error	0


INLAND AIS OPERATION

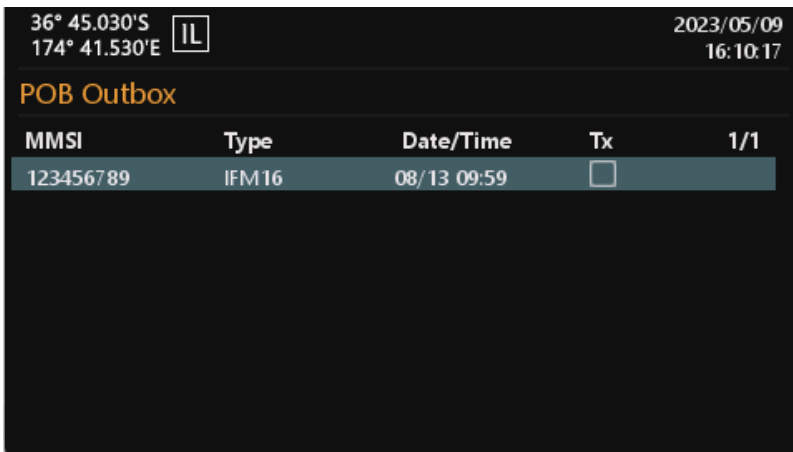
Inland Messages



POB Outbox

The submenu displays log of sent Number of person on board (RFM55/IFM16) messages. The SOLAS Mode sends the total number of persons on board as a binary message with international IFM16. The INLAND Mode (IWW) version sends a message with number of crew, personnel and passengers as a binary message with inland branch RFM55 or IFM16.

Use direction keys to select a message and press  to display message content.



Create POB Message

In this submenu users can compose number of person on board (RFM55/IFM16) messages. Number of person onboard can be configured in Inland Settings.

When "Broadcast SRM" is selected, just omit the Destination MMSI. The Data Type provides the option either to send the data in RFM55 or IFM16. Channel gives you the option to send the message through channel A, B, A&B, or No Preference. By No Preference, which is the default option, the system will select the channel automatically.

36° 45.030'S IL 2023/05/09
174° 41.530'E 16:14:38

Create POB Message Send

Destination MMSI	000000000	Data Type	RFM55
Message Type	Broadcast SRM	Channel	No Preference

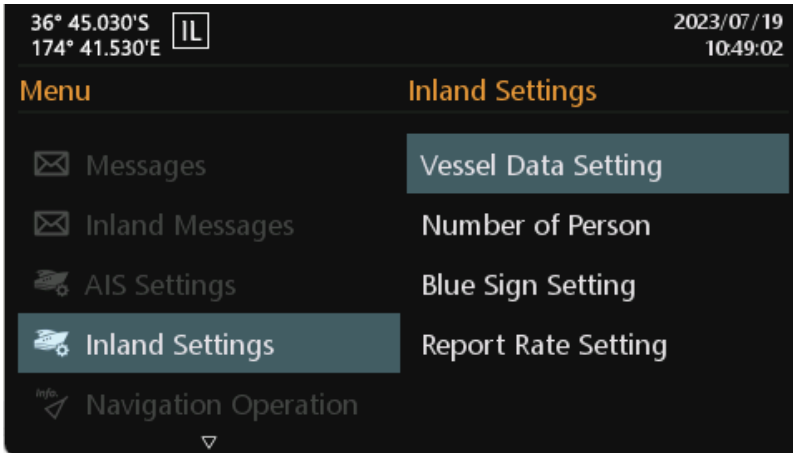
Inland Persons Information

Crew members	0	Shipboard personnel	0
Passengers	0		

SOLAS Persons Information

Number of Person	0
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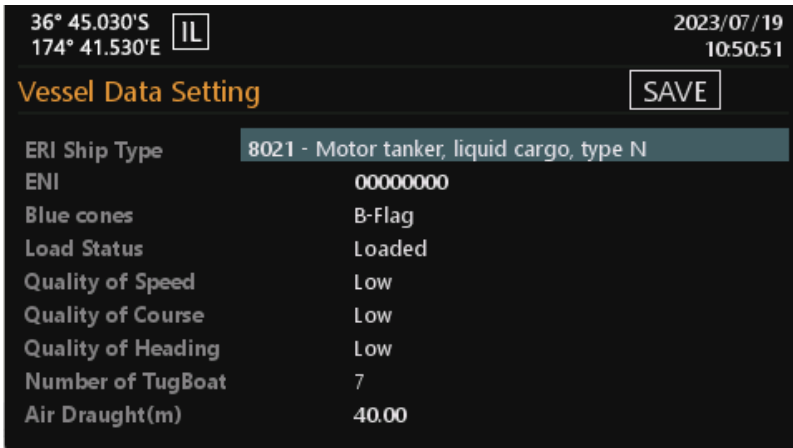
INLAND SETTINGS



Vessel Data Setting

Inland related vessel data can be set in this submenu:

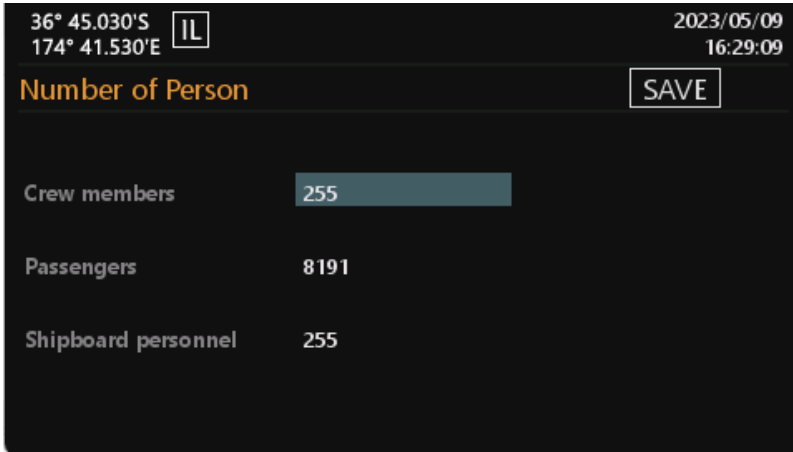
- ERI Ship Type — ERI classification code and description.
- ENI — European Number of Identification or European Vessel Identification Number
- Blue cones — The number of blue cones or blue flag status for the cargo (1, 2 or 3 blue cones, or B-Flag (blue flag)).
- Load Status — **Loaded, Unloaded, Unknown**
- Quality of Speed, Course, Heading — will be shown as **High** when the target vessel is using an approved sensor to generate this data, or **Low** if the data is derived from internal GNSS only.
- Number of Tugboat — The number of assisting tugboats (from 0 to 6 or unknown).
- Air Draught (m) — The air draught of the vessel (vessel's highest point to waterline).



Number of Person

This submenu provides Number of Person (RFM55) setting.

The number of crew (0 to 254 or unknown), passengers (0 to 8190 or unknown) and other shipboard personnel (0 to 254 or unknown).



36° 45.030'S 174° 41.530'E IL 2023/05/09 16:29:09

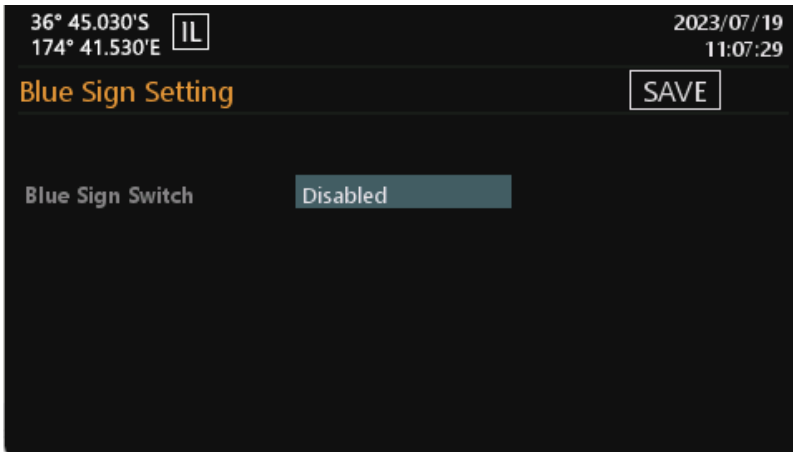
Number of Person

SAVE

Crew members	255
Passengers	8191
Shipboard personnel	255

Blue Sign Setting

Blue Sign information helps you recognize the approaching vessels in your inland waterway area. A “blue sign” switch may optionally be connected to the AIS transceiver during installation. This setting enables or disables the blue sign switch on the Junction Box.



36° 45.030'S 174° 41.530'E IL 2023/07/19 11:07:29

Blue Sign Setting

SAVE

Blue Sign Switch	Disabled
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Report Rate Setting

Set V5043's report rate. Selectable report rates are Auto/ 30 SEC./ 15 SEC./ 10 SEC. etc.

The screenshot shows a dark-themed user interface for setting the report rate. At the top left, the coordinates $36^{\circ} 45.030'S$ and $174^{\circ} 41.530'E$ are displayed, along with a small box containing the letters 'IL'. At the top right, the date $2023/07/21$ and time $15:05:27$ are shown. The title 'Report Rate Setting' is centered at the top in orange text, with a 'SAVE' button to its right. Below the title, the 'Report Rate' is set to 'Auto', which is highlighted with a teal bar.

Report Rate
Auto



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