

Raymarine®



LIGHTHOUSE SPORT

VERSION 3.10.XX

Advanced operation instructions

English (en-US)
Date: 01-2020
Document number: 81388-4
© 2020 Raymarine UK Limited

Trademark and patents notice

Raymarine, Tacktick, Clear Pulse, Truzoom, SeaTalk, SeaTalk^{hs}, SeaTalkng, and **Micronet**, are registered or claimed trademarks of Raymarine Belgium.

FLIR, LightHouse, DownVision, SideVision, RealVision, HyperVision, Dragonfly, Element, Quantum, Axiom, Instalert, Infrared Everywhere, The World's Sixth Sense and **ClearCruise** are registered or claimed trademarks of FLIR Systems, Inc.

All other trademarks, trade names, or company names referenced herein are used for identification only and are the property of their respective owners.

This product is protected by patents, design patents, patents pending, or design patents pending.

Fair Use Statement

You may print no more than three copies of this manual for your own use. You may not make any further copies or distribute or use the manual in any other way including without limitation exploiting the manual commercially or giving or selling copies to third parties.

Software updates



Check the Raymarine website for the latest software releases for your product.
www.raymarine.com/software

Product documentation



The latest versions of all English and translated documents are available to download in PDF format from the website: www.raymarine.com/manuals.
Please check the website to ensure you have the latest documentation.

Publication copyright

Copyright ©2020 Raymarine UK Ltd. All rights reserved.

Contents

Chapter 1 Important information	11
Disclaimers	11
Open source license agreements	11
Warranty registration	11
Technical accuracy	12
Chapter 2 Document and product information	13
2.1 Product documentation	14
Applicable software version	14
Compatible displays	14
User manuals Print Shop	15
Chapter 3 General information	17
3.1 Document conventions	18
3.2 Databoxes	18
Editing databoxes	19
Data items	19
3.3 Menu types	23
Controls and settings	24
Chapter 4 Set up	25
4.1 Display controls	26
Switching on and off at the breaker	27
Switching active app	27
4.2 Getting started	28
Startup wizard	28
First power up Limitation on Use acknowledgement	29
Configuring transducer settings	29
Identifying engines	30
Performing a settings or factory reset	30
Importing user data	30
4.3 Shortcuts	30
Taking a screenshot	31
Adjusting brightness	31
Changing the display's color theme	32
Disabling and enabling sonar ping	32
Disabling and enabling radar transmission	32
4.4 Memory card compatibility	32
Removing MicroSD card from its adaptor	33
Inserting a MicroSD card	34
Removing the MicroSD card	34
4.5 Software updates	34

Identify display variant and software version.....	35
Identifying connected products	35
Updating display software using a memory card.....	36
Updating software using an internet connection.....	36
4.6 User data import and export.....	37
Saving user data	37
Importing user data.....	38
4.7 EV-1 heading sensor.....	38
Manually adjusting an EV-1 heading sensor	38
Restarting calibration	39
Locking compass calibration	39
4.8 Multiple data sources (MDS)	39
Data sources menu.....	40
Manually assigning a data source.....	40
4.9 Pairing a Quantum™ radar scanner.....	41

Chapter 5 Homescreen 43

5.1 Homescreen overview	44
Accepting the Limitations on Use	45
Available apps	45
Assigning app pages to Quicklaunch buttons	47
5.2 Customizing app pages.....	47
5.3 Creating a new app page.....	48
5.4 Satellite navigation / positioning	48
GPS/GNSS status	48
GPS / GNSS settings	49
5.5 Status area	50
Status area icons	50
5.6 Timer	50
Using the count down timer.....	51
Using the count up timer	51
5.7 Alarms	51
Acknowledging alarms	52
5.8 Settings menu.....	52
Selecting display language.....	53
Boat details.....	54
Units of measure.....	54

Chapter 6 Waypoints, Routes and Tracks 57

6.1 Waypoints.....	58
Placing a waypoint (Quick method)	58
Placing a waypoint at your vessel's location.....	58
Placing a waypoint (Detailed method)	59

Moving a waypoint.....	59
Waypoint management.....	60
Waypoint sharing	64
6.2 Routes.....	64
Creating a Route	64
Autorouting	66
Route management	66
6.3 Tracks	68
Creating a track	68
Converting a track to a route	69
Track management.....	69
6.4 User data import and export.....	70
Saving user data	71
Importing user data.....	71

Chapter 7 Chart app..... 73

7.1 Chart app overview	74
Chart app controls	75
Selecting a chart card.....	76
Chart modes	76
View and motion.....	77
Vessel details.....	78
Viewing object information.....	78
7.2 Automatic Identification System (AIS) support.....	79
AIS target context menu	80
AIS dangerous targets	80
AIS vectors.....	81
AIS targets list.....	81
AIS Settings	82
AIS target symbols.....	83
7.3 Navigation	84
Autopilot command	84
Navigating to a waypoint or point of interest.....	84
Restarting cross track error (XTE)	85
Following a Route	86
Creating a track	87
7.4 Find nearest	87
Search using find nearest.....	89
7.5 RealBathy™	89
Setting up and creating RealBathy contours	90
7.6 Tides mode	91
Using animation controls	91

Selecting a date for tide animations	92
Tide station information	92
Current station information	94
Displaying tide or current graphs	95
7.7 Chart settings menu	95
7.8 SonarChart™ Live	99
Enabling SonarChart Live	99
Chapter 8 Fishfinder app	101
8.1 Fishfinder app overview	102
Opening the Fishfinder app	103
Fishfinder channels — Element™ HV displays	104
Fishfinder channels — Element™ S displays	105
8.2 Fishfinder app controls	106
RealVision™ 3D app controls	106
Placing a Waypoint in the Fishfinder app	107
8.3 Sonar scroll back	107
Playing back sonar history	108
8.4 Fishfinder sensitivity controls	108
8.5 Configuring transducer settings	109
8.6 Fishfinder settings menu	110
Chapter 9 Dashboard app	117
9.1 Dashboard app overview	118
Switching data page	118
Hiding and showing data pages	119
9.2 Navigation and sailing dials	119
Switching between TWS and AWS sailing dials	120
9.3 Rolling road	120
9.4 Customizing existing data pages	121
9.5 Data items	122
9.6 Dashboard app settings menu	125
Boat details	125
Units of measure	126
Advanced settings menu	127
Chapter 10 Radar app	129
10.1 Adding the Radar app icon to the homescreen	130
Pairing a Quantum™ radar scanner	130
10.2 Opening the Radar app	131
Putting the radar into standby	133
Powering down your radar scanner	133
10.3 Radar app overview	133

Compatible radar scanners.....	134
Radar app controls.....	134
Radar app context menu	135
10.4 Radar modes	135
10.5 Automatic Identification System (AIS) support.....	136
AIS target context menu	136
AIS dangerous targets	137
AIS vectors.....	137
AIS targets list.....	138
AIS Settings	138
AIS target symbols.....	139
10.6 Range and bearing.....	140
VRM (Variable Range Marker) / EBL (Electronic Bearing Line).....	141
10.7 Guard zone alarm.....	143
Adjusting the guard zone alarm.....	143
10.8 Sensitivity controls.....	144
10.9 Radar settings menu	145
Bearing alignment.....	148
Chapter 11 Troubleshooting	149
11.1 Troubleshooting	150
11.2 Power up troubleshooting	151
Performing a power on reset.....	151
11.3 GPS / GNSS troubleshooting.....	153
11.4 Sonar troubleshooting.....	154
11.5 Wi-Fi troubleshooting	156
Chapter 12 Technical support.....	159
12.1 Raymarine product support and servicing.....	160
Identify display variant and software version.....	161
Viewing product information	161
12.2 Learning resources.....	163
Appendix A Compatible autopilot controllers	165
Appendix B NMEA 2000 PGNs	167
Appendix C Document change history	169

Chapter 1: Important information



Warning: Product installation and operation

- This product must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury, damage to your vessel and/or poor product performance.
- Raymarine recommends certified installation by a Raymarine approved installer. A certified installation qualifies for enhanced product warranty benefits. Contact your Raymarine dealer for further details, and refer to the separate warranty document packed with your product.



Warning: Ensure safe navigation

This product is intended only as an aid to navigation and must never be used in preference to sound navigational judgment. Only official government charts and notices to mariners contain all the current information needed for safe navigation, and the captain is responsible for their prudent use. It is the user's responsibility to use official government charts, notices to mariners, caution and proper navigational skill when operating this or any other Raymarine product.



Warning: Sonar operation

- NEVER operate the sonar with the transducer out of the water.
- NEVER touch the transducer face when the sonar is powered on.
- SWITCH OFF the sonar if divers are likely to be within 7.6 m (25 ft) of the transducer.

Disclaimers

Raymarine does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Raymarine.

This product uses digital chart data, and electronic information from Global Navigation Satellite Systems (GNSS) which may contain errors. Raymarine does not warrant the accuracy of such information and you are advised that errors in such information may cause the product to malfunction. Raymarine is not responsible for damages or injuries caused by your use or inability to use the product, by the interaction of the product with products manufactured by others, or by errors in chart data or information utilized by the product and supplied by third parties.

This product supports electronic charts provided by third party suppliers which may be embedded or stored on memory card. Use of such charts is subject to the supplier's End-User Licence Agreement.

Open source license agreements

This product is subject to certain open source license agreements. Copies of the license agreements can be found on the Raymarine website: www.raymarine.com/manuals/.

Warranty registration

To register your Raymarine product ownership, please visit www.raymarine.com and register online.

It is important that you register your product to receive full warranty benefits. Your unit package includes a bar code label indicating the serial number of the unit. You will need this serial number when registering your product online. You should retain the label for future reference.

Technical accuracy

To the best of our knowledge, the information in this document was correct at the time it was produced. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and this document. Please check the Raymarine website (www.raymarine.com) to ensure you have the most up-to-date version(s) of the documentation for your product.

Chapter 2: Document and product information

Chapter contents

- [2.1 Product documentation on page 14](#)

2.1 Product documentation

The following documentation is applicable to your product:

All documents are available to download in PDF format from the Raymarine website www.raymarine.com.

Description	Part number
LightHouse Sport Basic operation instructions	81384
LightHouse Sport Advanced operation instructions (This document)	81388
Element HV Installation instructions	87360

Applicable software version

Product software is updated regularly to add new features and improve existing functionality.

This document has been updated to reflect displays running version 3.10.10 of the LightHouse™ Sport operating system.

Check the website for the latest software and user manuals:

- www.raymarine.com/software
- www.raymarine.com/manuals

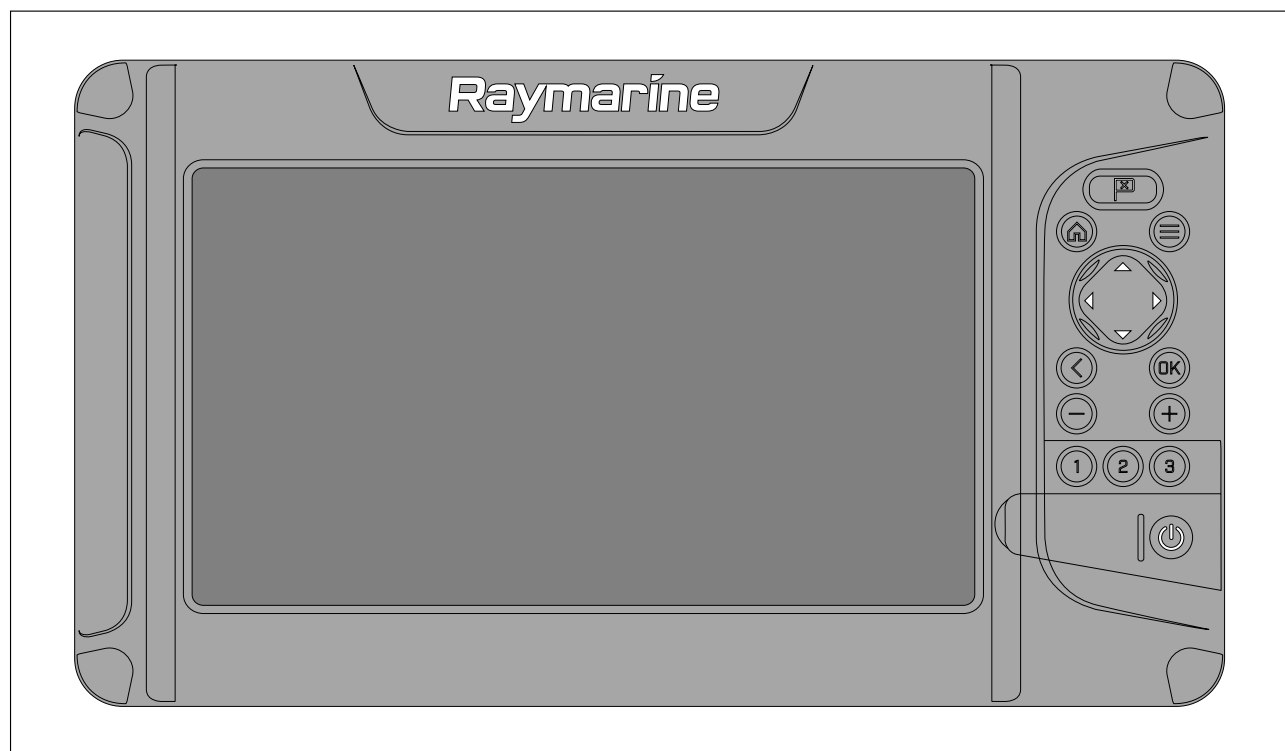
New features

The following new features have been added to this software release.

- Ice fishing activity and fishfinder modes added.

Compatible displays

The LightHouse™ Sport operating system is compatible with the displays listed below.



Part number	Description
E70532	Element™ 7 HV — HyperVision™ sonar / GPS combo with Wi-Fi.
E70531	Element™ 7 S — Conical sonar / GPS combo with Wi-Fi.
E70534	Element™ 9 HV — HyperVision™ sonar / GPS combo with Wi-Fi.
E70533	Element™ 9 S — Conical sonar / GPS combo with Wi-Fi.

Part number	Description
E70536	Element™ 12 HV — HyperVision™ sonar GPS combo with Wi-Fi.
E70535	Element™ 12 S — Conical sonar GPS combo with Wi-Fi.

User manuals Print Shop

Raymarine provides a Print Shop service, enabling you to purchase a high-quality, professionally-printed manual for your Raymarine product.

Printed manuals are ideal for keeping onboard your vessel, as a useful source of reference whenever you need assistance with your Raymarine product.

Visit <http://www.raymarine.co.uk/view/?id=5175> to order a printed manual, delivered directly to your door.

For further information about the Print Shop, please visit the Print Shop FAQ pages: <http://www.raymarine.co.uk/view/?id=5751>.

Note:

- Accepted methods of payment for printed manuals are credit cards and PayPal.
- Printed manuals can be shipped worldwide.
- Further manuals will be added to the Print Shop over the coming months for both new and legacy products.
- Raymarine user manuals are also available to download free-of-charge from the Raymarine website, in the popular PDF format. These PDF files can be viewed on a PC / laptop, tablet, smartphone, or on the latest generation of Raymarine multifunction displays.

Chapter 3: General information

Chapter contents

- [3.1 Document conventions on page 18](#)
- [3.2 Databoxes on page 18](#)
- [3.3 Menu types on page 23](#)

3.1 Document conventions

The following conventions are used throughout this document:

- **Highlight** — The term ‘highlight’ refers to using the **Directional pad** to highlight an item.
- **Select** — The term ‘select’ refers to using the **Directional pad** to highlight an item, and then pressing the **OK** button to select the item.
- **Scroll** — The term ‘scroll’ refers to using the **Directional pad** to move up or down a menu to an item that is not currently shown onscreen.
- **Adjust** — The term ‘adjust’ is used to denote using the **Directional pad** to change a numeric value or slider bar control.
- **Enable** — The term ‘enable’ refers to using the **Directional pad** to highlight a toggle switch and press **OK** to activate the switch (when activated the switch background will turn green and the toggle is positioned to the right).
- **Disable** — The term ‘disable’ refers to using the **Directional pad** to highlight a toggle switch and press **OK** to deactivate the switch (when deactivated the switch background will turn gray and the toggle is positioned to the left).

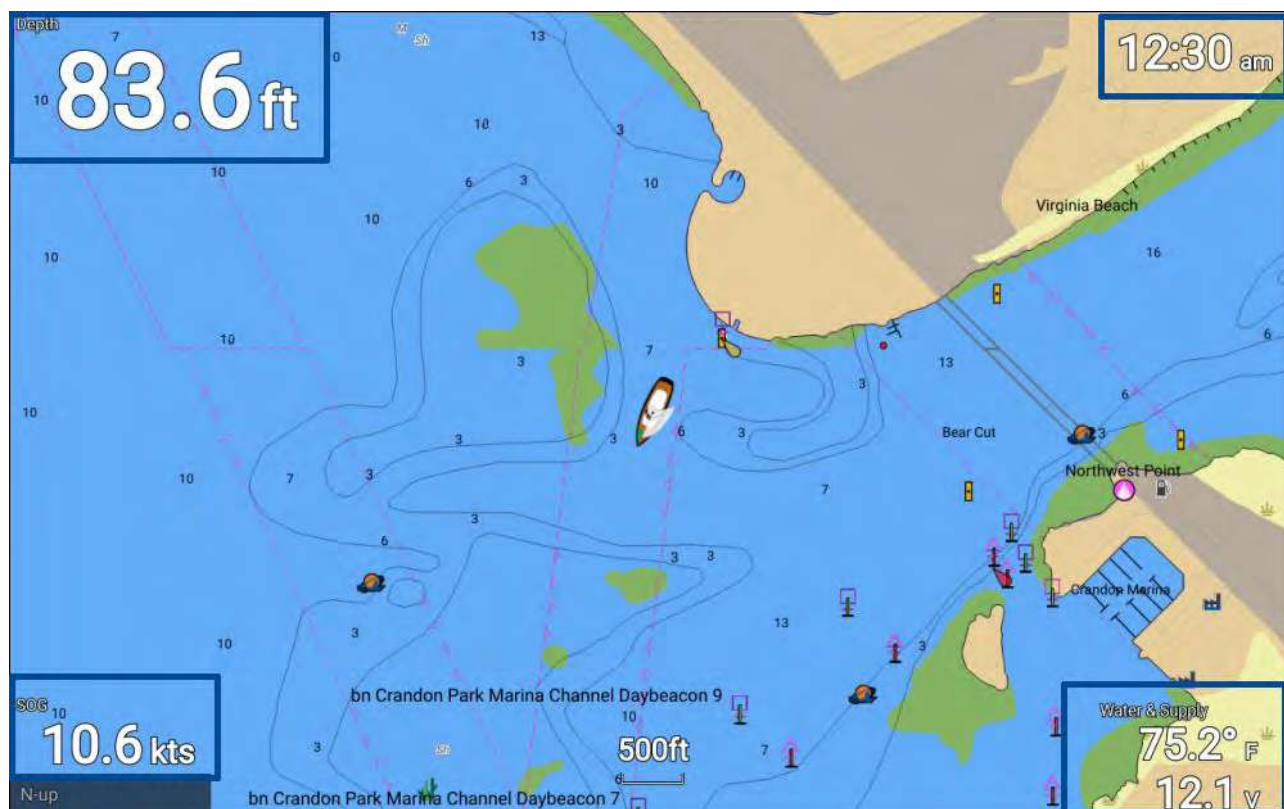


The term ‘select the **Settings** menu’ refers to selecting the settings icon found at the bottom of app menus.

3.2 Databoxes

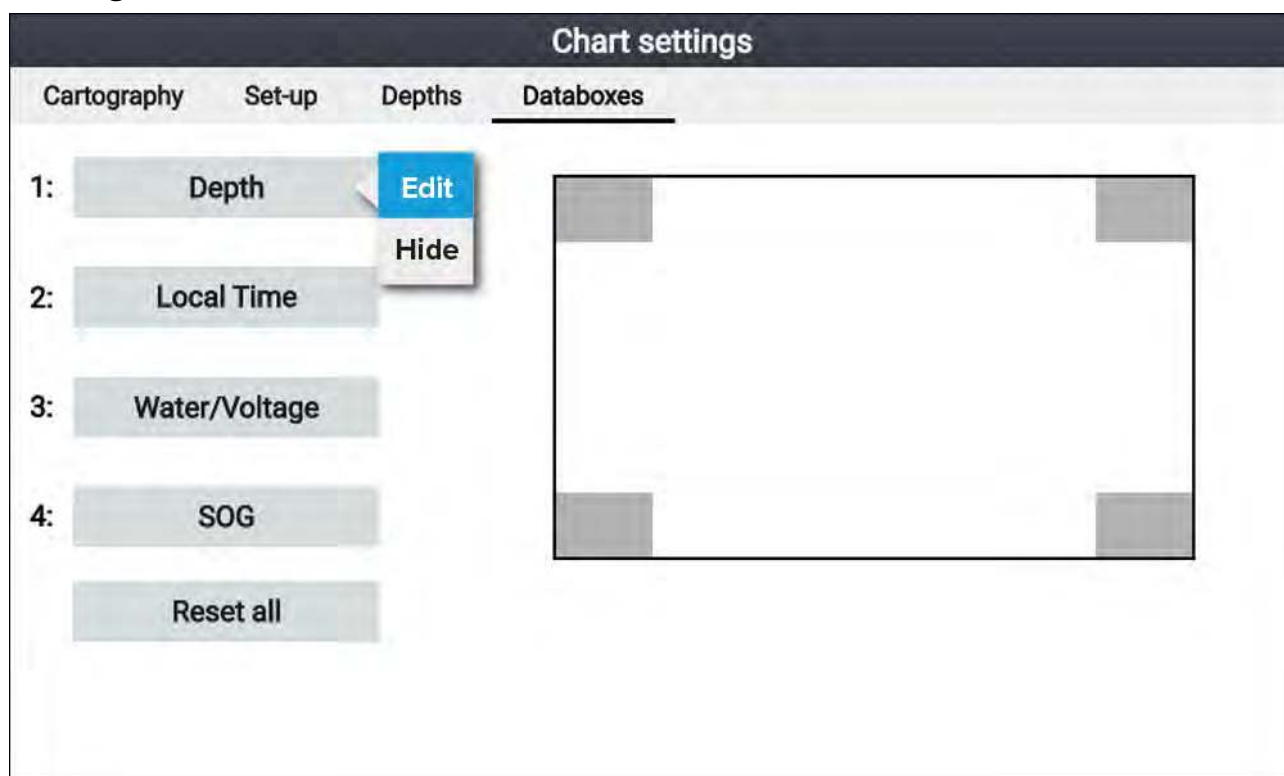
System data is overlaid onto the Chart, and Fishfinder apps using databoxes located around the edge of the app screen.

Example (Chart databoxes)



Databoxes can be edited or shown and hidden from the app menu: **Menu > Settings > Databoxes**.

Editing databoxes



With the app displayed and in focus.

1. Press the **Menu** button.
2. Select the **Settings** icon.
3. Select The **Databoxes** tab.
4. Select the databox you want to edit.
The pop-over menu is displayed.
5. Select **Edit** to change the data item that is displayed in the databox.
6. Select the Data item category.
7. Select the data item.
8. Press the **Menu** button to return to the app screen.

Note:

To remove or display the databox, selecting **Hide** or **Show** from the pop-over menu.

Data items

The following data items can be displayed in Databoxes.

Note:

Where more than 1 data source is available for a data item, based on the specified Boat details (**Homescreen > Settings > Boat details**), then data items will be available for each data source.

Category	Data item
Battery • Battery 1 • Battery 2 • Battery 3	• Time till zero charge • State of charge • Battery temperature • Battery voltage • Battery current
Boat	• Fresh water (%) • Live well (%) • Gray water (%)

Category	Data item
	• Black water (%)
Depth	• Depth
Display	• Supply voltage
Distance	• Trip (season) • Trip (month) • Trip (day) • Ground Log
Engine • Port engine • Starboard engine • All engines	• Engine hours • Engine RPM (Revolutions per minute) • Boost pressure • Oil temperature • Oil pressure • Alternator • Coolant pressure • Coolant temperature • Engine load • Engine trip • Fuel flow • Fuel flow (inst) • Fuel flow (avg) • Fuel pressure • Gear • Trans oil pressure • Trans oil temperature
Fuel • Tank 1 • Tank 2 • All Tanks	Tank 1 and Tank 2: • Fuel level (%) All Tanks: • Engine economy total • Fuel flow total • Time to empty • Distance to empty • Fuel used (season) • Fuel used (trip) • Est. fuel remaining • Total fuel (%)

Category	Data item
Environment	• Max water temp • Min water temp • Water temp • Set • Drift • Water & Supply (Water temp and supply voltage) • Sunrise/set
GPS	• Course over ground • Average SOG (Average Speed Over Ground) • Maximum SOG • SOG • Vessel position • Course over ground SOG
Heading	• Heading
Navigation	• Route ETA (Route Estimated Time of Arrival) • Route TTG (Route Time To Go) • Active waypoint • Waypoint TTG • Estimated arrival time • Distance to waypoint • Cross track error • Bearing to waypoint • Wpt info (Waypoint information)
Speed	• VMG to waypoint (Velocity Made Good to Waypoint) • VMG to windward (Velocity Made Good to Wind) • Avg speed • Max speed • Speed thru water
Time	• Time • Date • Time and Timer
Wind	• Cardinal • Beaufort • Ground wind direction • True wind direction • Minimum true wind angle • Maximum true wind angle • True wind angle • Maximum true wind speed • Minimum true wind speed • True wind speed

Category	Data item
	• Minimum app wind angle • Maximum app wind angle • App wind angle • Minimum app wind speed • Maximum app wind speed • App wind speed

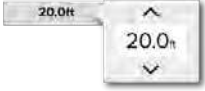
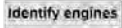
3.3 Menu types

The different types of menu available in LightHouse™ Sport are shown below.

	App menus - Each app includes a menu. Menus provide access to the app's features and settings. - The menu is displayed on the right side of the screen when the Menu button is pressed. - From a single app page, pressing the Back button or the Menu button will close the app menu. - From a multi-app splitscreen page, pressing the Back button will close the app menu and return to the multi-app page view. - From a multi-app splitscreen page, pressing the Menu button will close the app menu, maintaining the app in fullscreen page view. - Menu options that include a '>' symbol will open a menu page or related menu options for that item.
	Menu pages and tabs - Menu pages are accessed from app menu options and icons on the homescreen. - Menu pages are fullscreen pages containing menu options and settings, menu pages are usually set out in tabs with each tab containing options relevant to the tab's title. - Selecting tab titles will display the contents for that tab. - Pressing the Back button will return you to the previous menu.
	Context menus - Context menus are available in the Chart and Fishfinder apps. Context menus are accessed by highlighting an object or location on the app screen and pressing the OK button. - Context menus provide context-sensitive information and options. - Selecting more options will display further contextual menu options. - Pressing the Back button or the Menu button will close context menus.
	Pop-over menus - Pop-over menus are available on the homescreen, in apps and from menu pages. Pop-over options provide access to further menu options and settings. - Pressing the Back button will close pop-over menus.

Controls and settings

Common menu controls and options are detailed below.

	Toggle switch
	- Toggle switches are used to enable (switch on) or disable (switch off) various features and settings. - When enabled (switched on) the white circle will be moved right and the switch's background will be filled Green.
	Setting field Setting fields show the selected value for that control. Selecting a setting field will display the available options relevant to the options available. Depending on field selected the options could be in the following formats: - Pop-over options (selection list) - Numeric value control (as shown) - Onscreen keyboard - File browser - Selection list (full page)
	Setting button Setting buttons are available on Menu pages and Notification / Alarm messages to access further settings or confirm setting changes.
	Page down - Further options are available off screen. - Scroll Down to display these options.

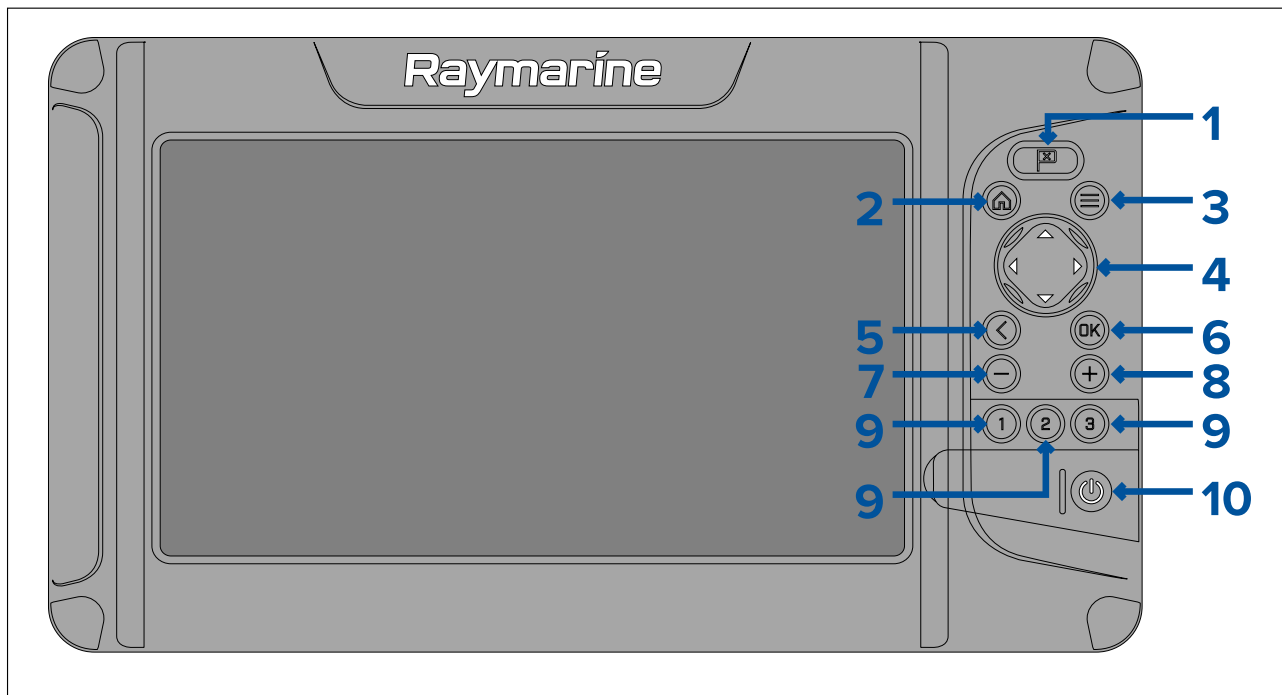
Chapter 4: Set up

Chapter contents

- 4.1 Display controls on page 26
- 4.2 Getting started on page 28
- 4.3 Shortcuts on page 30
- 4.4 Memory card compatibility on page 32
- 4.5 Software updates on page 34
- 4.6 User data import and export on page 37
- 4.7 EV-1 heading sensor on page 38
- 4.8 Multiple data sources (MDS) on page 39
- 4.9 Pairing a Quantum™ radar scanner on page 41

4.1 Display controls

The buttons available on Element™ displays and their function are detailed below.



1. **Waypoint**

- Press to place a waypoint at your vessel's position (unless cursor mode is active in the Chart or Fishfinder app).
- Press to place a waypoint at the cursor's position in the Chart and Fishfinder apps (when in cursor mode).

2. **Home**

- Press to display the Homescreen.

3. **Menu**

- Press to open Homescreen menus and app menus.
- Press and hold for approximately 2 seconds to switch which app has focus in a multi app page.
- Press to close Homescreen menus and app menus.

4. **Directional pad** (8-axis directional controls)

- Use to navigate Homescreen and menus.
- Press any direction to activate cursor mode in the Chart and Fishfinder apps.
- Use to position the cursor in the Chart and Fishfinder apps.

5. **Back**

- Return to previous menu or dialog.

6. **OK** — Confirms menu selections, opens context menus

- Press to confirm a currently highlighted option.
- Press to open context sensitive menus in the Chart and Fishfinder apps.

7. **Minus** (Zoom / Range out)

- Press to increase the area displayed onscreen in the Chart app.
- Press to decrease the zoom level in the Fishfinder app, when in Zoom mode.
- Press to revert to scrolling mode from lowest zoom level in the Fishfinder app.

8. **Plus** (Zoom / Range in)

- Press to decrease the area displayed onscreen in the Chart app.
- Press once to initiate Zoom mode in the Fishfinder app, subsequent presses will increase the zoom level.

9. **Quicklaunch 1 / Quicklaunch 2 / Quicklaunch 3**

- Press to open the assigned app page.
- Press and hold to assign the quick launch button to the app page currently highlighted on the Homescreen.

10. **Power**

- Power on — Press and hold until the display beeps (approximately 2 seconds).
- Shortcuts menu — Press once to open the shortcuts menu.
- Power off — Press and hold until the display turns off (approximately 5 seconds).
- Power off — Press to open the Shortcuts menu and then select **Power down display**.

Switching on and off at the breaker

When powered off the display will still consume a small amount of power.

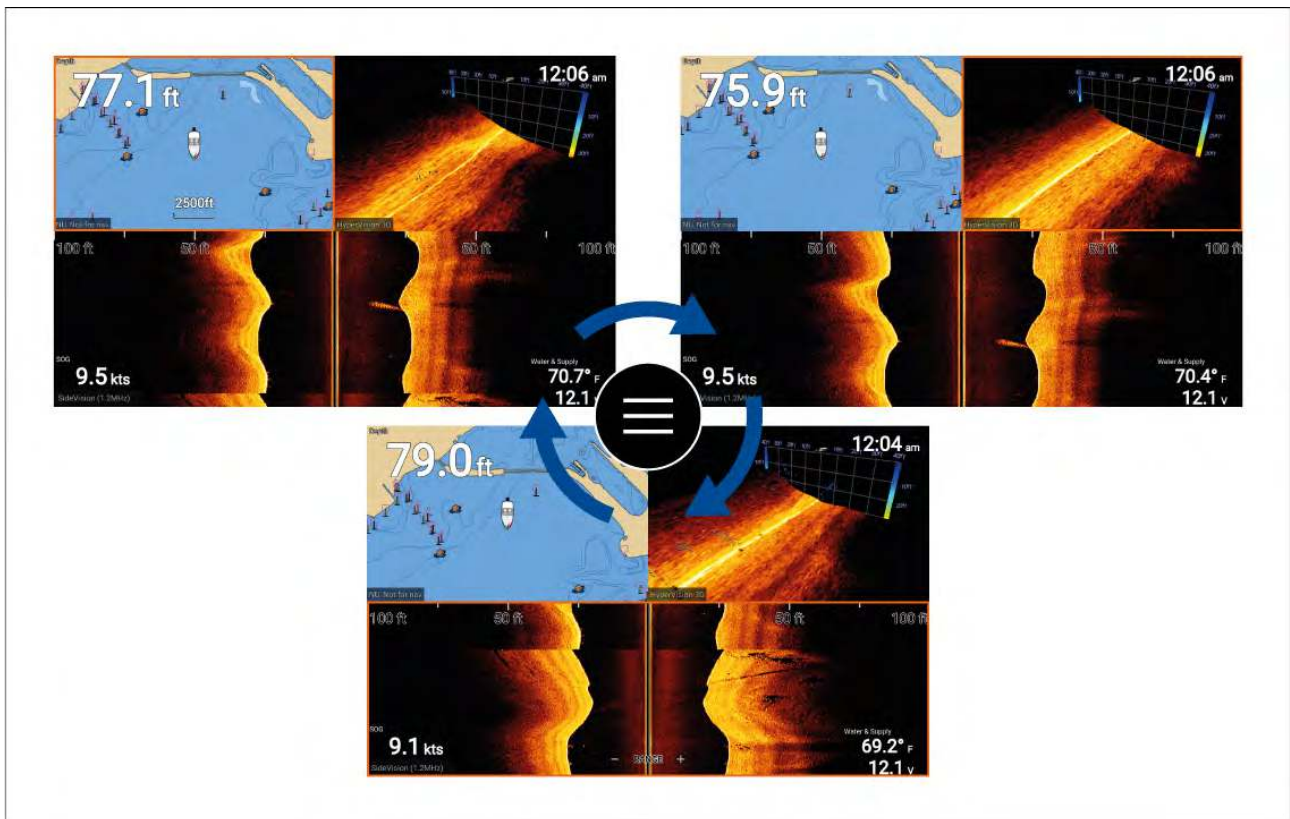
If you wish to ensure that the display is not consuming any power then it must be switched off at the breaker or have the power cable unplugged.

When the breaker is switched back on or the power cable is reconnected the display will remain powered off, until switched back on using the **Power** button.

Switching active app

On app pages that contain more than 1 app you can select which app has the current focus (i.e.: which app responds to your control).

Press and hold the **Menu** button to move focus to the next app.



In addition to pressing and holding on the **Menu** button you can also switch app focus from the app menu. With a multi app page displayed:

1. Press the **Menu** button.
2. Highlight the **Switch to** option.
3. In app pages with more than 2 apps, use the **Right** and **Left** buttons to highlight the app you want to make active.
4. Press the **OK** button.
5. Press the **Back** button to close the menu.

4.2 Getting started

Startup wizard

The first time the display is powered up, or after a **Factory reset** the startup wizard is displayed.

The startup wizard guides you through the configuration of important display settings.

The settings included in the startup wizard are listed below:

- **User interface language** — for a list of available user interface languages see: [User Interface languages](#)
- **Activity** — activity selection determines default settings and homescreen app page icons:
 - Fishing (inland)
 - Fishing (coastal)
 - Fishing (ice)
 - Motor cruising
 - Sailing
 - Paddle
 - Other
- ***Boat details** — boat details include important safety related settings:

Note: * Boat details are skipped when the **Fishing (ice)** activity is selected. If required, boat details can be configured manually from the **Boat details** settings tab.

- Safety clearances
- Number of engines
- Number of tanks
- Number of batteries
- Sonar transducer selection
- Radar selection

Important

- Ensure you select the correct **Sonar transducer**.
- Ensure that the **Radar installed** option is enabled if you intend to connect a Quantum™ radar scanner to the display.

Changing activity type

To change the selected activity type after the startup wizard has finished a factory reset must be performed.

1. Backup your user data before performing a factory reset..

For details on exporting you user data refer to: [p.37 – Saving user data](#)

2. Perform a factory reset.

*For instructions on performing a factory reset refer to:
[p.30 – Performing a settings or factory reset](#)*

3. follow the startup wizard instructions, selecting your new activity.
4. Import your user data.

For instructions on importing your user data refer to: [p.30 – Importing user data](#)

First power up Limitation on Use acknowledgement

After you have completed the Startup wizard the Limitation on Use (LoU) disclaimer is displayed.

Limitations on Use

This product is intended to be used only as an aid to navigation. It is the captain's responsibility to use official government charts, notices to mariners, caution, sound judgment and proper navigational skill when operating their vessel or using this or any other Raymarine product.

1. I acknowledge the above warning, accept the limitations of this product and the electronic charts, and assume total responsibility for and risk associated with using this product.
2. I have read the documentation for this product and the end-user license agreement for any chart I intend to use and agree to be bound by their terms.

NOAA, United States Geological Survey, United States Army Corp of Engineers, Florida Department of Wildlife, Natural Earth. This product has been produced by or for Raymarine and includes data provided by the Canadian Hydrographic Service of the Department of Fisheries and Oceans. The incorporation of data sourced from the Canadian Hydrographic Service of the Department of Fisheries and Oceans within this product does NOT constitute an endorsement by the Canadian Hydrographic Service or the Department of Fisheries and Oceans of this product. Contains information licensed under the Open Government License – Ontario.

OK

You must read and agree to the terms in order to use your display.

Selecting **OK** means you have accepted the terms of use.

Configuring transducer settings

For systems with a transducer connected, as part of setting up your system for the first time it is important that you correctly configure your transducer.

Transducer configuration settings are available from the **Fishfinder app**.

Settings

Sonar Display **Transducer** Sounder Fish detection Databoxes

Transducer: HV 3D Xdcr

Display depth as:

☐ Below keel

☐ Below waterline

☒ Below transducer

HV Transducer alignment: Forwards

TEMPERATURE READING

Enable temperature sensor: ☒

Current temperature: 22.3°C Calibrate temp

1. Select **Transducer** from the Fishfinder app's **Settings** menu: **Menu > Settings > Transducer**

2. If your installation required you to install an all-in-one transducer backwards (e.g.: this may occur when connecting the transducer to a trolling motor), then select **Backwards** from the **HV transducer alignment** option. This ensures that the port and starboard channels appear correctly orientated onscreen, otherwise keep the default setting: **Forwards**.
3. Select where you want your depth measurements taken from:
 - i. Below transducer (default) — No offset required
 - ii. Below keel — Enter the distance between the transducer face and the bottom of the keel.
 - iii. Below waterline — Enter the distance between the bottom of your keel and the waterline.
4. You can configure temperature settings as follows:
 - i. Enable or disable temperature readings as required.
 - ii. If enabled, check the temperature reading against the actual water temperature.
 - iii. If the current reading requires adjustment, select **Calibrate temp** and enter the difference between your 2 readings.

Identifying engines

Engine data can be shown on your display, if your engines are transmitting the relevant supported data on the same network as your display. If your system has mislabelled your engines then you can correct this using the Engine identification wizard.

The Engine identification wizard can be accessed from the Boat details menu: **Homescreen > Settings > Boat details > Identify engines**.

1. Ensure the correct number of engines is selected in the **Num of Engines:** box.
2. Select **Identify engines**.
3. Follow the onscreen prompts to complete the engine identification wizard.

Performing a settings or factory reset

Performing a **Factory reset** will erase ALL user data and reset the display's settings to their Factory default values. Performing a **Settings reset** will restore your display's settings to factory defaults, whilst retaining user data.

1. Select **Settings reset**, from the **This display** menu: **Homescreen > Settings > This display > Settings reset** to perform a settings reset.
2. Select **Factory reset**, from the **This display** menu: **Homescreen > Settings > This display > Factory reset** to perform a factory reset.

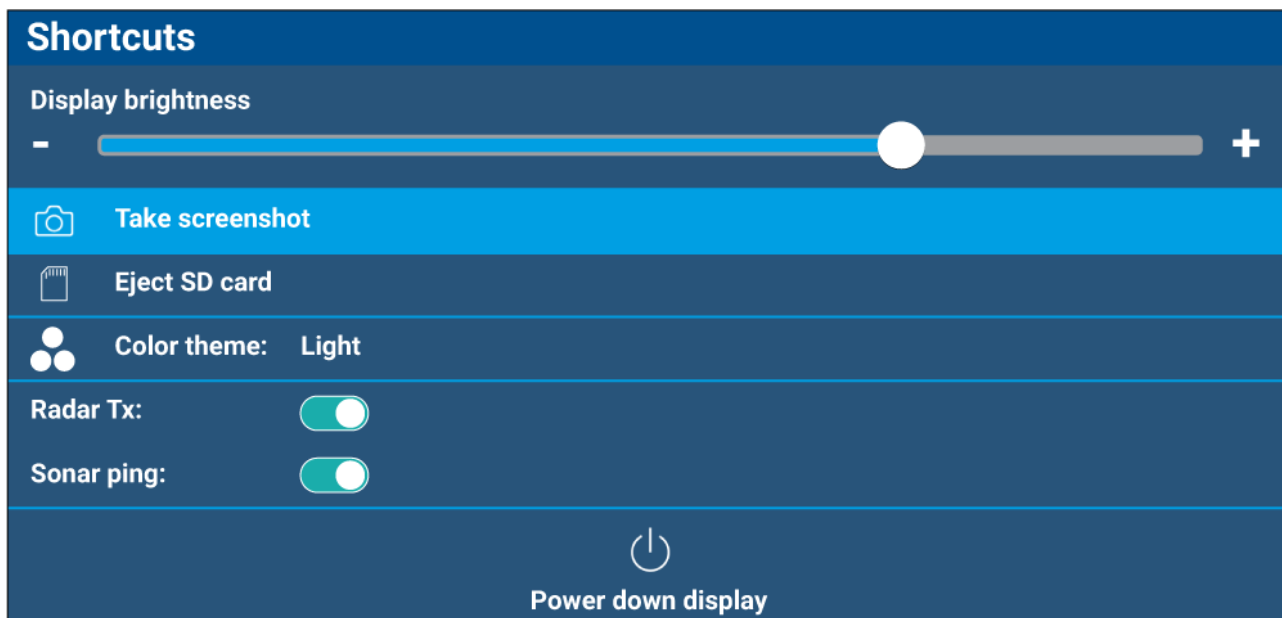
Importing user data

You can import user data (i.e.: GPX format Waypoints, Routes and Tracks) to your display.

1. Insert the MicroSD card that contains your user data files into the memory card reader on your display.
2. Select **Import from card** from the Import/export menu: (**Homescreen > Settings > Import/export > Import from card**).
3. Navigate to your User data file (.gpx).
4. Select the relevant GPX file.
Your user data has now been imported.
5. Select **OK**.

4.3 Shortcuts

The Shortcuts menu can be accessed by pressing the **Power** button.



The following shortcuts are available:

- **Display brightness**
- **Take Screenshot**
- **Eject SD card**
- **Color theme:**
- ⁽¹⁾**Radar Tx:**
- **Sonar ping:**
- **Power down display**

Note:

- If no controls are pressed, the **Shortcuts** menu will automatically close after approximately 5 seconds.
- ⁽¹⁾Radar transmission controls are only available when the display is paired with a compatible radar scanner.

Taking a screenshot

You can take a screenshot and save the image to external memory.

1. Insert a memory card into the card reader slot.
2. Press the **Power** button.
The Shortcuts menu is displayed.
3. Select **Take screenshot**.

The screenshot will be saved in .png format to the inserted memory card.

Note:

Screenshots can also be taken by pressing and holding the **Back** button.

Adjusting brightness

Display brightness (backlight illumination level) can be adjusted from the **Shortcuts** menu. Lower brightness levels are recommended for viewing the display during low light conditions (e.g.: at night) and higher levels for daylight viewing. Lower brightness levels will also help to preserve battery power.

With the Shortcuts menu displayed (accessible via the Power button):

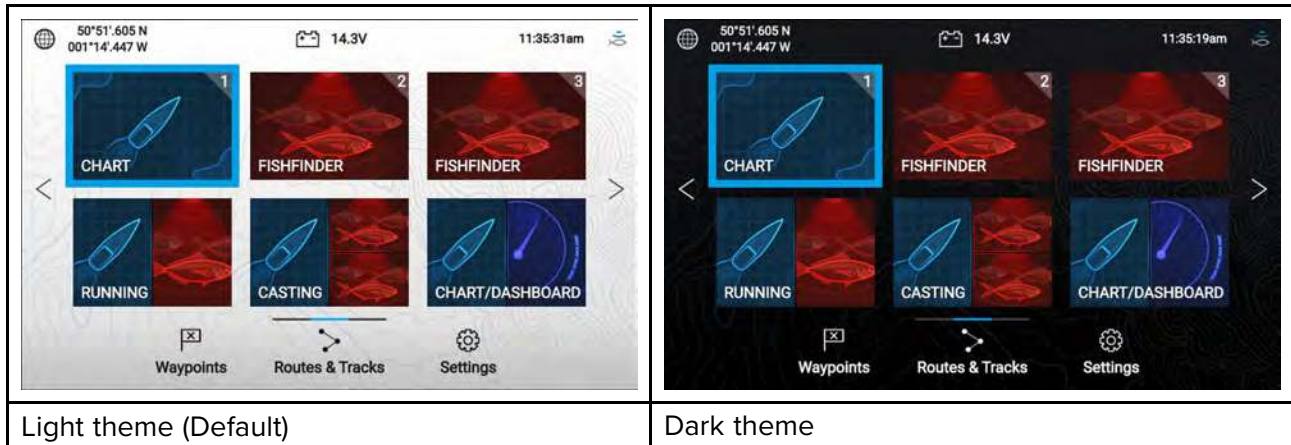
1. Use the **Plus** and **Minus** buttons or the **Left** and **Right** buttons to adjust display brightness.

Note:

When the brightness is not set to maximum and the shortcuts menu is displayed, each press of the **Power** button will increment the brightness level.

Changing the display's color theme

You can change the color theme of your display's user interface from the **Shortcuts** menu.



With the Shortcuts menu displayed (accessible via the Power button):

1. Select **Color theme**:
The pop-over menu with available color themes is displayed.
2. Select the desired color theme.

Note:

Changing the **Color theme** inverts the Black and White colors used for text and in Homescreen and menu backgrounds. The dark theme is recommended in lower light conditions e.g.: at night.

Disabling and enabling sonar ping

You can disable and enable the sonar module ping from the **Shortcuts** menu.

With the Shortcuts menu displayed (accessible via the Power button):

1. Select **Sonar ping**: to disable or enable sonar pinging.

Disabling and enabling radar transmission

You can disable and enable radar scanner transmission from the **Shortcuts** menu.

With the Shortcuts menu displayed (accessible via the **Power** button):

1. Select **Radar Tx** to disable or enable radar transmission.

4.4 Memory card compatibility

MicroSD memory cards can be used to backup / archive data (e.g. Waypoints, Routes and Tracks). Once data is backed up to a memory card, old data can be deleted from the system. The archived data can be retrieved at any time. It is recommended that your data is backed up to a memory card on a regular basis.

Compatible cards

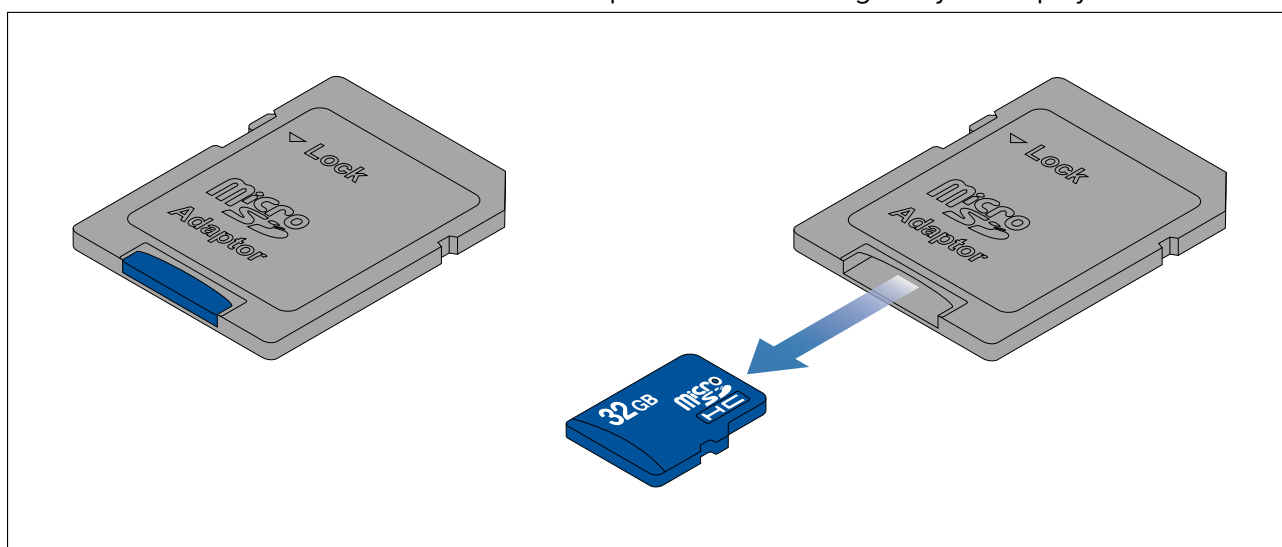
The following types of MicroSD cards are compatible with your MFD:

Type	Size	Native card format	MFD supported Format
MicroSDSC (Micro Secure Digital Standard Capacity)	Up to 4GB	FAT12, FAT16 or FAT16B	NTFS, FAT32
MicroSDHC (Micro Secure Digital High Capacity)	4GB to 32GB	FAT32	NTFS, FAT32
MicroSDXC (Micro Secure Digital eXtended Capacity)	32GB to 2TB	exFAT	NTFS, FAT32

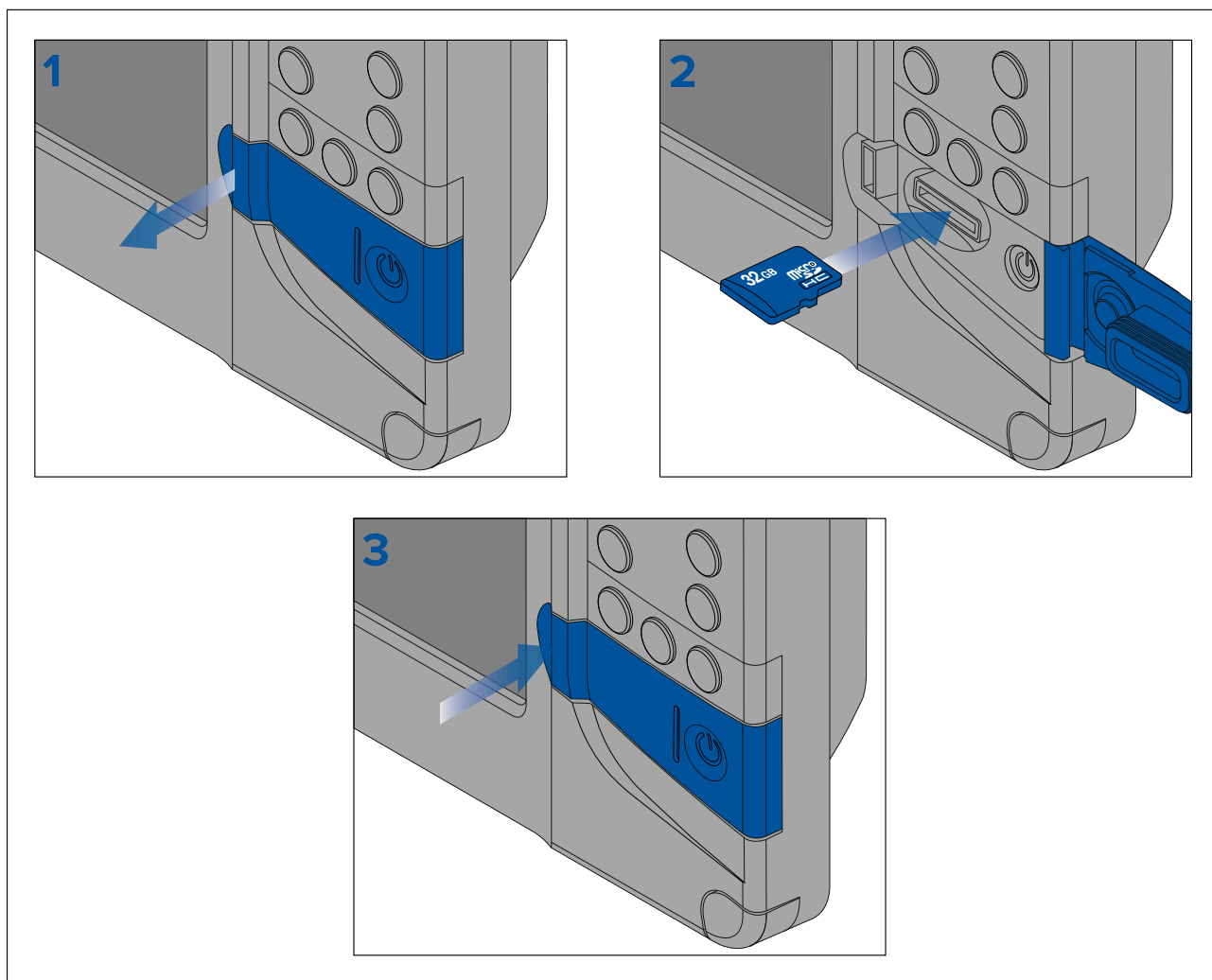
- **Speed class rating** — For best performance it is recommended that you use Class 10 or UHS (Ultra High Speed) class memory cards, or better.
- **Use branded memory cards** — When archiving data it is recommended that you use good quality branded memory cards.

Removing MicroSD card from its adaptor

MicroSD memory and cartography chart cards are usually supplied inserted into an SD card adaptor. The card will need to be removed from the adaptor before inserting into your display.



Inserting a MicroSD card



1. Open the card reader door.
2. Ensuring correct orientation (contacts facing down), insert the MicroSD card into the card reader slot.
3. Close the card reader door, ensuring that the edges of the door are flush.

Removing the MicroSD card

1. Press the **Power** button.
The **Shortcuts** menu is displayed.
2. Select **Eject SD card**.
3. Open the card reader door.
4. Remove the MicroSD card from the Rear of the MFD.
5. Close the card reader door.
6. Select **OK** on the confirmation dialog.

Caution: Ensure card reader cover or door is securely closed

To prevent water ingress and consequent damage to the product, ensure that the card reader door or cover is firmly closed.

4.5 Software updates

Raymarine® regularly issues software updates for its products which provide new and enhanced features and improved performance and usability.

It is important to ensure that you have the latest software for your products by regularly checking the Raymarine® website for new software releases.

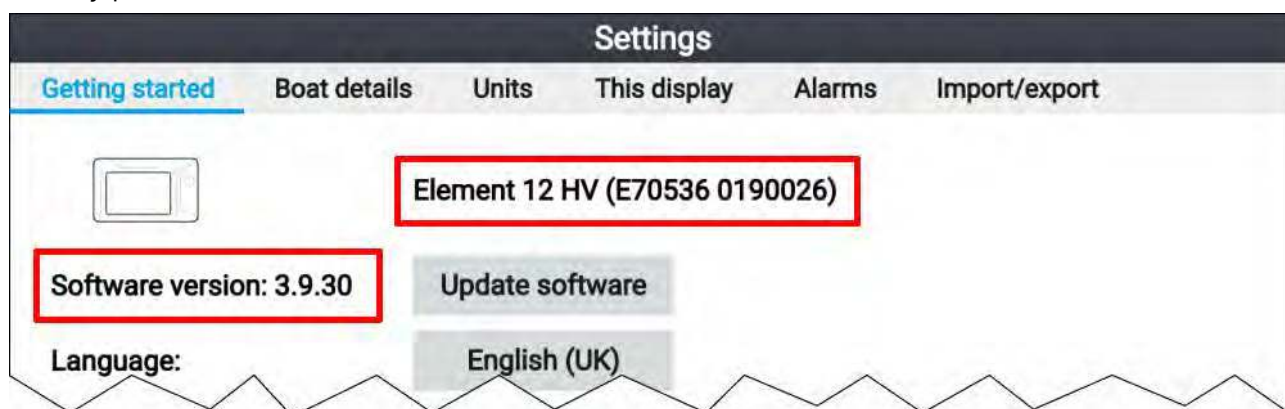
Note:

- It is recommended that you always backup your User data before performing a software update.
- The “Check online” feature is only available on display variants that include built-in Wi-Fi that have been configured with an active Internet connection.
- In order to perform a software update any connected radar scanner must be switched to standby.

In addition to updating your display’s software, your display can also be used to update the software of devices connected to the same SeaTalkng® backbone.

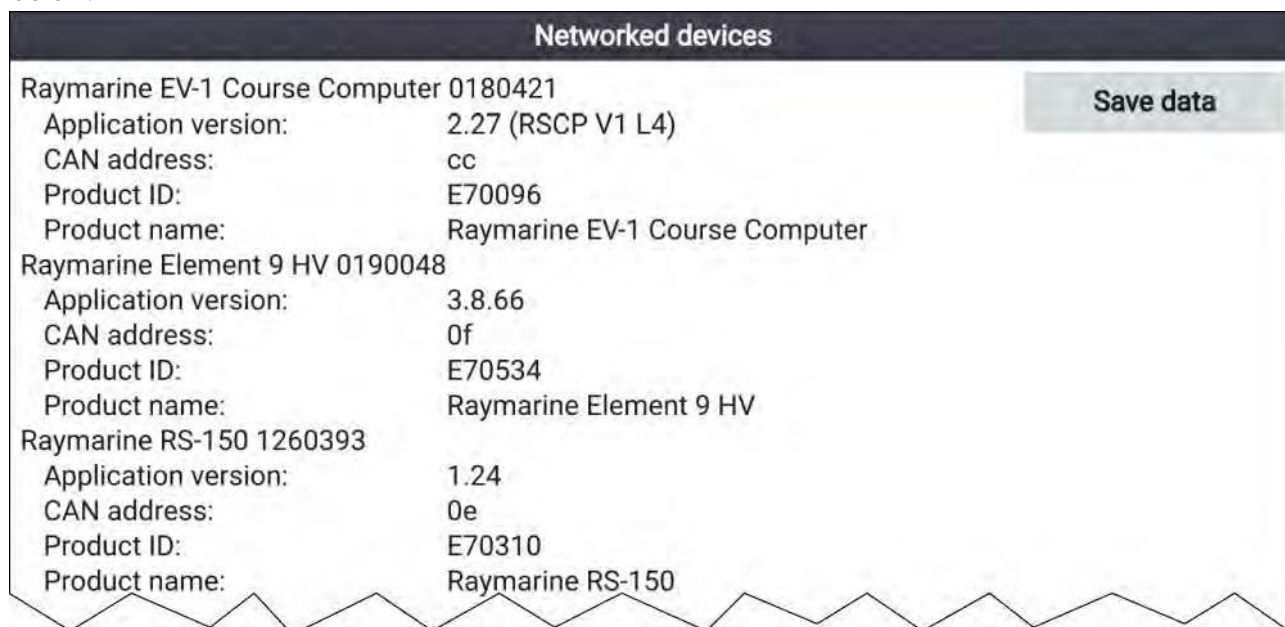
Identify display variant and software version

Refer to the Getting started menu: **Homescreen > Settings > Getting started** on your display to identify product variant and current software version.



Identifying connected products

To display a list of products that are connected to the same SeaTalkng® backbone follow the steps below.



From the Homescreen:

1. Select **Settings**.
2. Select the **This display** tab.
3. Select **Networked devices**.

Product information for compatible products is displayed. The software version can be located against **Application version**:

4. If required, use the **Up** and **Down** buttons to scroll through the list of product information.
5. You can also save the list of product information to memory card by selecting **Save data**.

The product information file will be saved in .json file format that can be viewed using most standard notepad applications.

Updating display software using a memory card

Follow the steps below to update the software on your display.

1. Check the product hardware variant and the software version of the products you want to update.
 2. Go to the Raymarine website: (www.raymarine.com > **Support** > **Software Updates**).
 3. Browse for your product.
 4. Check if an updated software version is available for your product.
 5. Download the relevant software package(s) (ISO files).
 6. Copy the files to MicroSD card.
 7. With your display powered on, insert the MicroSD card into the card reader slot.
- The software update files will be recognized automatically.



8. Select **Yes** to update the software.

A list of available products is displayed. The list will include your display and products that are connected to the SeaTalkng® backbone.

Software update list example



9. Select each device that you want to update.

*If a notification is displayed asking if you want to reinstall the current software version, unless you are experiencing problems with the product select **No**, otherwise select **Yes** and the current version of software will be reinstalled.*

10. When all relevant products have been chosen, select **Update selected** to commence the software update process.
11. Wait for the update process to complete.
12. Select **Exit**.

Note:

- Your products may reboot automatically as part of the update process.
- You can also select **Check SD card** from the **Update software** pop-over options (**Homescreen** > **Settings** > **Getting started** > **Update software**).

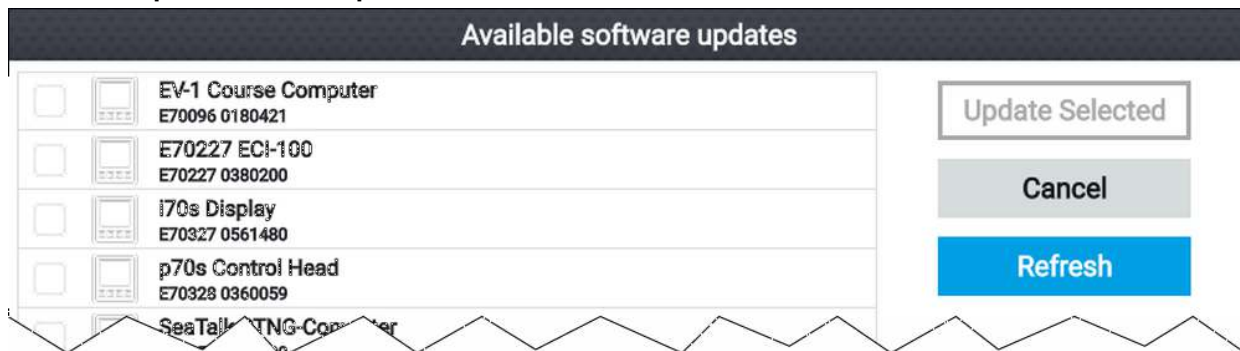
Updating software using an internet connection

When using an Element™ display that includes built-in Wi-Fi, follow the steps below to update your display's software and software on approved devices connected to the same SeaTalkng® backbone, using an internet connection.

1. Select **Update software** from the Getting started menu: (**Homescreen** > **Settings** > **Getting started**).

2. Select **Check online** from the pop-over menu.
If you do not have an active internet connection then you will be requested to create one.
3. To set up a Wi-Fi connection select **Wi-Fi settings** and connect to the required Wi-Fi access point/hotspot.
4. Select **Start**.
A list of available products is displayed. The list will include your display and products that are connected to the SeaTalkng® backbone.

Software update list example



5. Select each device that you want to update.
*If a notification is displayed asking if you want to reinstall the current software version, unless you are experiencing problems with the product select **No**, otherwise select **Yes** and the current version of software will be reinstalled.*
6. When all relevant products have been chosen, select **Update selected** to commence the software update process.
7. Wait for the update process to complete.
8. Select **Exit**.

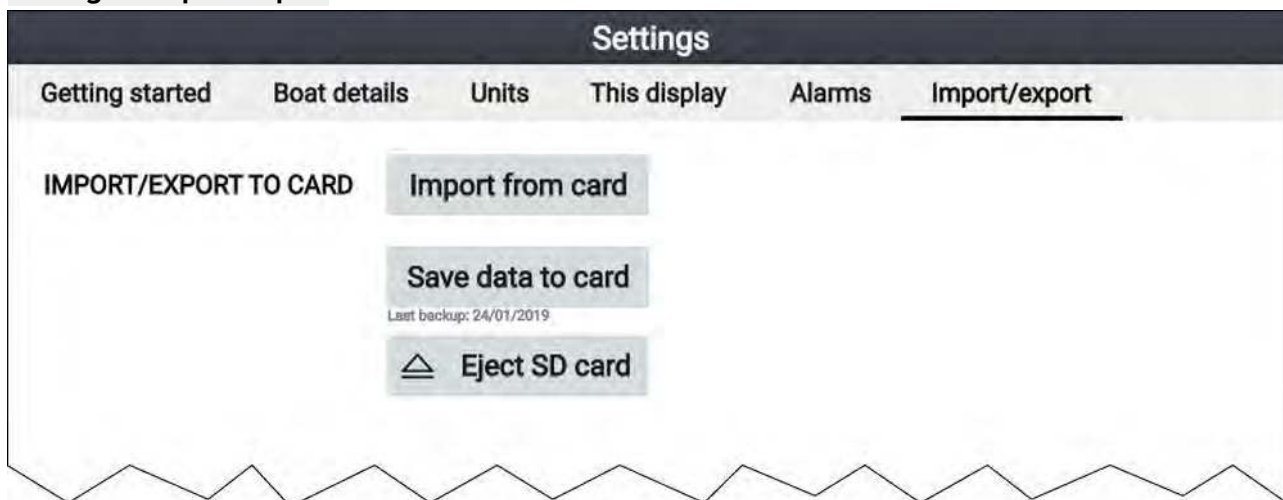
Note:

Your products may reboot automatically as part of the update process.

4.6 User data import and export

User data (i.e.: Waypoint, Routes and Tracks) can be imported and exported from your display. User data is saved in the common .gpx file format.

The Import/export menu can be accessed from the homescreen settings menu **Homescreen > Settings > Import/export**.



Saving user data

You can backup your user data (waypoints, routes and tracks) to a MicroSD card.

1. Insert a memory card into your display's card reader.

2. Select **Save data to card** from the Import/export menu: **Homescreen > My data > Import/export**.
A pop-over menu is displayed.
3. Select the desired option:
 - **Save all data** to save (export) all waypoints, routes and tracks.
 - **Save waypoints** to save (export) all waypoints.
 - **Save routes** to save (export) all routes.
 - **Save tracks** to save (export) all tracks.
4. Select **Save** to save the user data using the default filename. Alternatively:
 - i. Use the onscreen keyboard to enter your own filename and then select **Save**.
5. Select **OK** to return to the Import/export menu, or select **Eject card** to safely remove the memory card.

The user data file is saved to the '\\Raymarine\\My Data\\' directory of your memory card in gpx format.

Importing user data

You can import user data (i.e.: GPX format Waypoints, Routes and Tracks) to your display.

1. Insert the MicroSD card that contains your user data files into the memory card reader on your display.
2. Select **Import from card** from the Import/export menu: (**Homescreen > Settings > Import/export > Import from card**).
3. Navigate to your User data file (.gpx).
4. Select the relevant GPX file.
Your user data has now been imported.
5. Select **OK**.

4.7 EV-1 heading sensor

You can connect an EV-1 heading sensor to your display, this will ensure that accurate heading data is available, regardless of vessel movement.

The EV-1 heading sensor will automatically calibrate (linearize) itself while the following conditions are met:

- vessel speed is between 3 to 15 knots, and
- at least a 270° turn has been made.

Note:

The time it takes for automatic calibration can be reduced by completing a full 360° turn at between 3 to 15 knots.

After the initial calibration has been completed a notification will be displayed and a Max deviation value will be reported in the **EVO COMPASS** section of the **This display** menu. If dashes are displayed then the calibration has not been successful.

If the Maximum deviation is 45° or greater, it is recommended that either the EV-1 is relocated, in a location with less magnetic interference, or that any devices causing magnetic interference are moved farther away from the EV-1.

Manually adjusting an EV-1 heading sensor

If there is a difference between Heading and the reported COG (Course Over Ground), which is not attributable to tide and wind conditions, then you can adjust the EV-1 heading sensor's settings to compensate.

The EV-1 settings can be accessed from the **This display** menu: **Homescreen > Settings > This display > EVO set-up**.

EVO compass calibration

Compass offset:

0°

Heading: 261°T

Align to GPS

Restart calibration

Max deviation: ---

Compass lock:

☒

When lock is active, EVO auto-calibration is suspended

1. If the difference is within plus or minus 10°, then select the **Compass offset** field and adjust until COG and heading values are the same, or
2. If the difference is greater than plus or minus 10° you can align your heading sensor to the COG, reported by you GPS/GNSS, by selecting **Align to GPS** and following the onscreen instructions.

Restarting calibration

If you experience problems with your heading data or have had to relocate the EV-1 sensor then you can restart the automatic calibration.

From the this display menu:

1. Select **EVO set-up**.
2. Select **Restart calibration**.

The maximum deviation will be reset and automatic calibration will commence once vessel speed (3 to 15 knots) and turn circle (at least 270° turn) conditions are met.

Locking compass calibration

The EV-1 sensor is designed to continually adjust its calibration settings in the background to improve its accuracy.

If your vessel is regularly in environments with strong magnetic disturbances (e.g.: offshore wind farms or busy rivers) it may be desirable to use the compass lock feature to prevent the continual adjustment, as over time this may cause an error in reported heading.

To enable compass lock:

1. Select **EVO set-up** from the **This display** menu.
2. Select the Compass lock toggle switch so that it is enabled.

Note:

You can disable the calibration lock at anytime by disabling the **Compass lock** toggle switch.

4.8 Multiple data sources (MDS)

MDS is a Raymarine scheme for managing multiple sources of identical data types on any single network (e.g.: in a MFD network you may have more than one source of GPS / GNSS position data).

The following data types can have a preferred source assigned to them:

- GPS Position

- GPS Datum
- Time & Date
- Heading
- Depth
- Speed
- Wind

For MDS to be available on your system, all products in the system that use the data sources must be MDS-compliant. The system will report any products that are NOT MDS-compliant. It may be possible to upgrade the software for these non-compliant products, to make them compliant. Visit the Raymarine website (www.raymarine.com) to obtain the latest software for your products.

If MDS-compliant software is not available for the product and you do NOT want to use the system's preferred data source, you must remove any non-compliant products from the system. You should then be able to select your preferred data source.

Note:

Once you have completed setting up your preferred data sources, you may be able to add non-compliant products back into the system.

Data sources menu

When a network / system includes multiple sources of the same data type, such as GPS / GNSS position data, the display will choose the most appropriate source for the data. If you prefer, you can manually select your own source for the data.

The **Data sources** menu can be accessed from the **Settings** menu: **Homescreen > Settings > This display > Data sources**.

Data sources					
Depth	Speed through water	GPS	GPS datum	Wind	
Preferred	Source device	Value in use	Serial num	Port ID	
☐	Raymarine Element 9 HV		0190048	Internal	Manual selection ☐ To select a preferred source for this type of data, activate "manual selection" and tick your preferred source.
☒	Raymarine RS-150	+/- 0.35nm	1260393	Internal	
☐	Internal GPS		0190026	Unknown	

Each tab in the data sources menu enables you to view and select your preferred data source for that type of data. The currently active data source will display its current 'value in use'. By default data sources are selected automatically and the source for the data may change depending on conditions. With the **Manual selection** toggle enabled, you can manually assign your preferred source for the data. Manually selected data sources will not change.

Manually assigning a data source

To manually assign a data source follow the steps below.

From the Homescreen:

1. Select **Settings**.
 2. Select the **This display** tab.
 3. Select the **Data sources** button.
 4. Select the tab for the type of data you want to assign a source for.
Once a tab is selected the display will search the network and list all compatible devices that provide that data type.
 5. Use the **Up** and **Down** buttons to highlight a device.
 6. Press the **OK** button to select the device as the source for that data type.
- The selected device will become the only source used for that data.

Note:

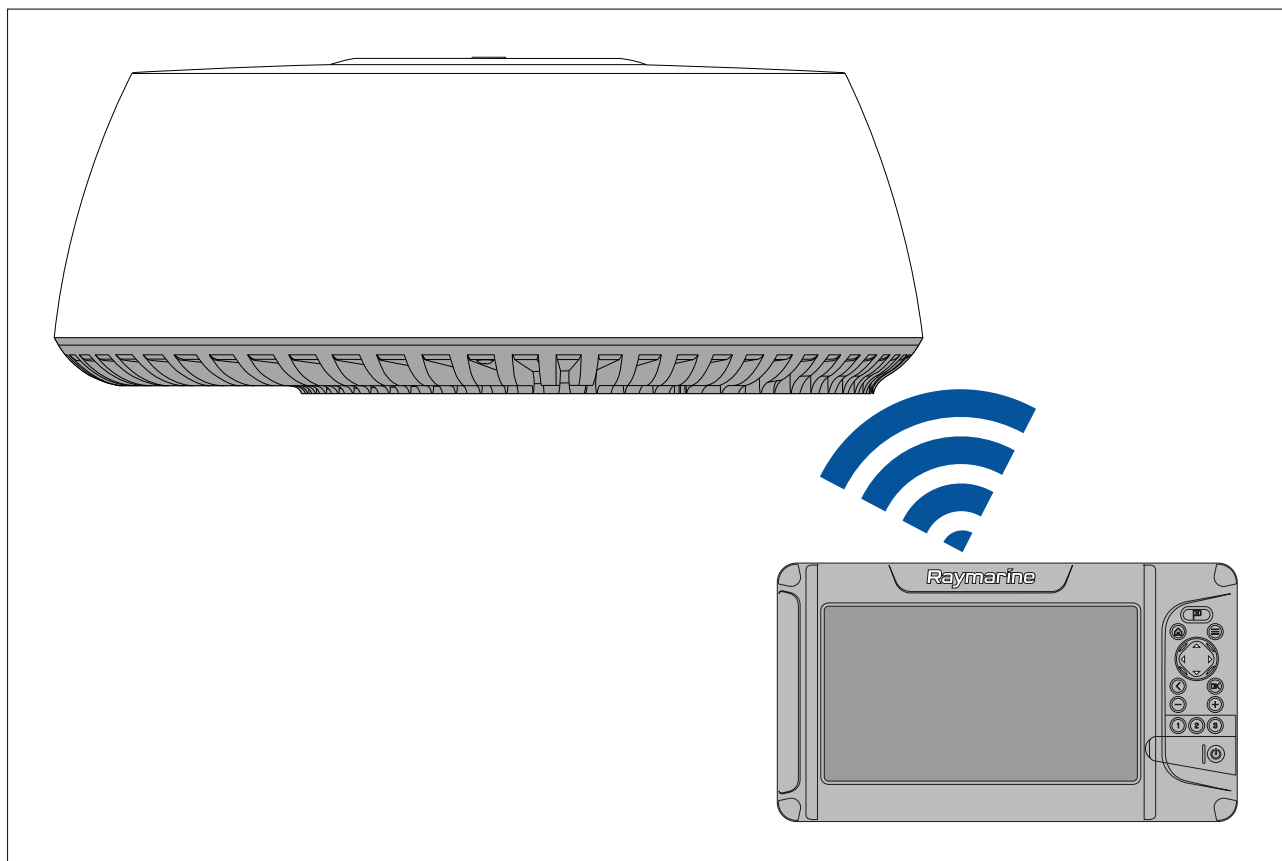
Unless manual selection is required for a specific reason, it is recommended that **Manual selection** remains disabled, so that the display can determine the best source for the data.

4.9 Pairing a Quantum™ radar scanner

You can connect a Quantum™ radar scanner to your display using the Wi-Fi connection.

Pre-requisites:

- Ensure you have installed and connected your Quantum™ radar scanner to a power supply following the instructions supplied with the radar scanner.
- Ensure you know your Quantum™ radar scanner's SSID and passcode.



1. Select **Pair with Quantum** from the **This display** tab: **Homescreen > Settings > This display > Quantum Radar: > Pair with Quantum**.
2. Enter the SSID and passcode for your Quantum™ radar.
3. Select **Connect**.
4. Follow any onscreen instructions to continue pairing with your Quantum™ radar.

The pairing process may take several minutes to complete.

For more information on the Quantum™ radar pairing process (including troubleshooting information), refer to your Quantum™ radar documentation.

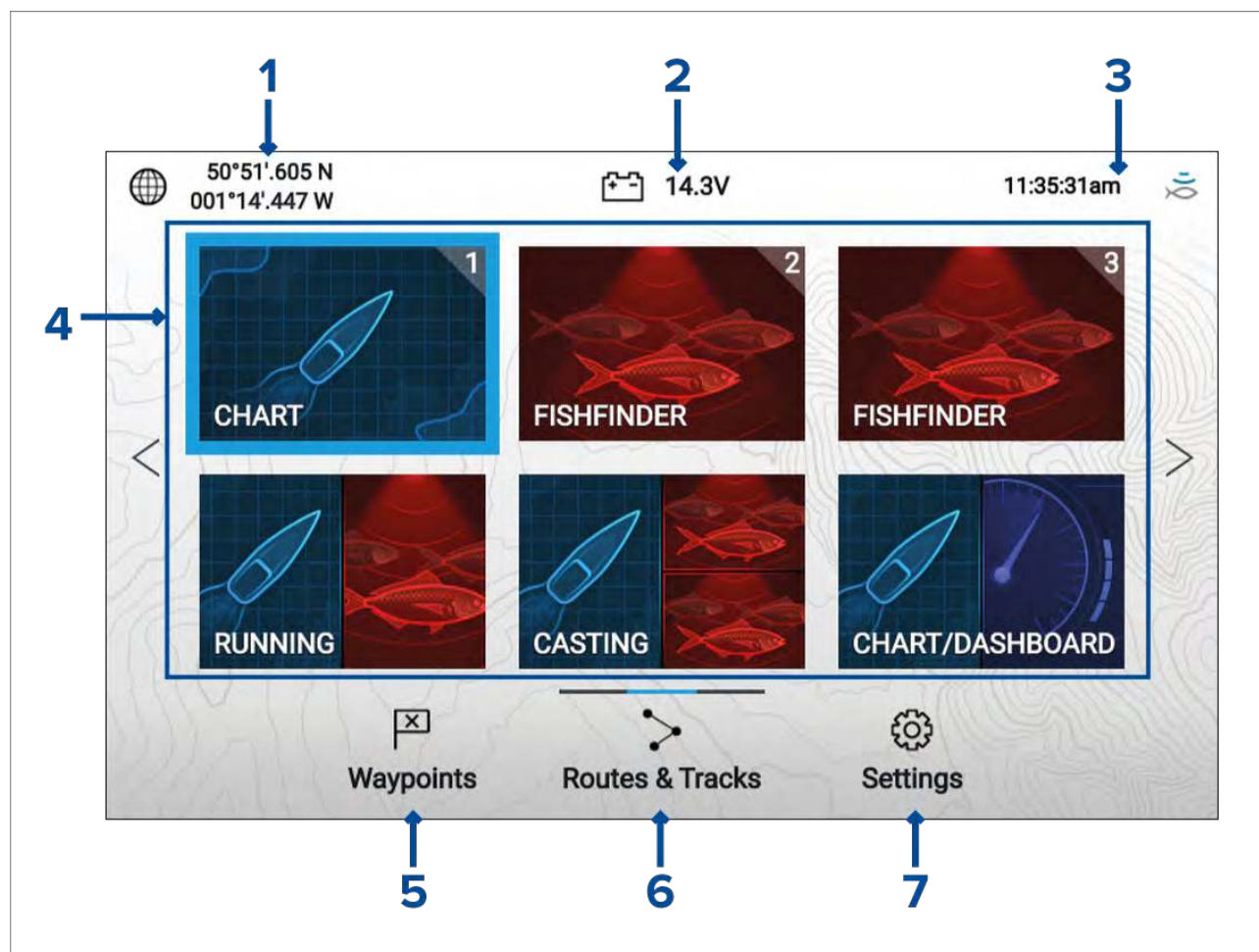
Chapter 5: Homescreen

Chapter contents

- 5.1 Homescreen overview on page 44
- 5.2 Customizing app pages on page 47
- 5.3 Creating a new app page on page 48
- 5.4 Satellite navigation / positioning on page 48
- 5.5 Status area on page 50
- 5.6 Timer on page 50
- 5.7 Alarms on page 51
- 5.8 Settings menu on page 52

5.1 Homescreen overview

All settings and apps can be accessed from the Homescreen.



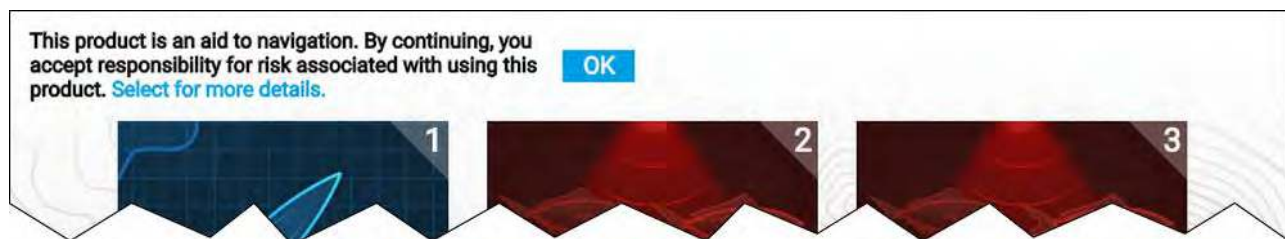
- 1. Position/fix details** — Shows your vessel's current position coordinates. Select the area to view fix accuracy and to access position settings.
- 2. Supply voltage** — Shows the display's supply voltage. The Voltage reading is colored Red if the current supply voltage is lower than the value specified in the **Low voltage threshold** alarm setting: **Homescreen > Settings > Alarms > Low voltage threshold**.
- 3. Status area** — Displays system time, count down/up timer and sonar ping status. Select the area to set count down / up timer, time zone and to set daylight savings.
- 4. App page icons** — The Homescreen is made up of 3 pages that can each contain up to 6 app page icons. Selecting an app page icon opens the relevant app page. To view a different Homescreen page, keep pressing the Directional pad's **Left** or **Right** buttons until the Homescreen page changes. You can identify which Homescreen page is being shown using the indicator bar, located above the **Routes & Tracks** icon.
- 5. Waypoints** — Select to view the **Waypoints** list.
- 6. Routes & Tracks** — Select to view the **Routes and Tracks** lists.
- 7. Settings** — Select to view the display's **Settings** menu.

Note:

The combination of the selected **Activity** and **Transducer selection** during the Start up wizard determines the default app page icons displayed on the Homescreen.

Accepting the Limitations on Use

After your display has powered up the Homescreen is displayed.



1. Before using the display you must accept the Limitations on Use (LoU) disclaimer. To view the full LoU Disclaimer, use the **Left** button to highlight the text and press the **OK** button.

*The LoU acknowledgment is displayed each time the display is powered on. The full LoU text can be accessed at any time, it is located at the bottom of the **Getting started** menu: **Homescreen > Settings > Getting started** .*

Available apps

Apps are used in App pages. Each app page is represented on the Homescreen by an app page icon. Each app page can include up to 4 apps. The individual apps available are:



Chart — The Chart app displays electronic cartographic information from your Chart cards and when used in conjunction with a GNSS (GPS) receiver, plots your vessel's position. The Chart app can be used to: mark specific locations using Waypoints; build and navigate Routes; or, keep a record of where you have been by recording a Track.

For detailed information about the Chart app refer to: [p.73 — Chart app](#)



Fishfinder — The Fishfinder app uses a connected transducer to help you find fish by creating an underwater view of bottom structure and targets in the water column that is covered by your transducer.

Note:

- The channels available in the Fishfinder app are determined by the display variant and connected transducer.
- The icon used on the homescreen will reflect the fishfinder channel in use.

For detailed information about the Fishfinder app refer to:

[p.101 — Fishfinder app](#)



Dashboard — The Dashboard app provides data readings from connected sensors and equipment.

Note:

The Dashboard app is only available in splitscreen app pages.

For detailed information about the Dashboard app refer to:

[p.117 — Dashboard app](#)



Radar — The Radar app is a situational awareness aid that displays a graphical representation of your surroundings in relation to your vessel using the echo/target returns from a connected Quantum radar scanner. The Radar app allows you to track targets and measure distances and bearings

Note:

The Radar app is included in homescreen app page icons when the **Radar installed** option is enabled in the initial start up wizard, otherwise and must be added manually.

For detailed information about the Radar app refer to: [p.129 — Radar app](#)

Fishfinder app pages

The icons used to represent fishfinder app pages on the homescreen change to reflect the fishfinder channel that has been selected for that instance of the fishfinder app.



Sonar

The conical beam fishfinder channel is represented using the sonar app icon. The conical beam fishfinder channel provides a traditional scrolling 2D view of the water beneath your vessel.



DownVision™

The DownVision™ fishfinder channel is represented using the DownVision™ app icon. The DownVision™ fishfinder channel provides a photo like scrolling 2D view of the water beneath and to the sides of your vessel.



SideVision™

The SideVision™ fishfinder channel is represented using the SideVision™ app icon. The SideVision™ fishfinder channel provides a photo like Scrolling 2D view of the water on each side of your vessel.



RealVision™ 3D

The RealVision™ 3D fishfinder channel is represented using the RealVision™ app icon. The RealVision™ 3D fishfinder channel provides a scrolling 3D view of the water behind and to the sides of your vessel.

Ice fishing app pages

When the display is configured for ice fishing (via the Startup wizard), the available fishfinder modes will be represented using ice fishing app page icons on the homescreen. These app pages enable you to select different types of sonar view, optimized for ice fishing activities.



Trail & Radial

The trail and radial app page is a splitscreen page that includes a traditional (historical), scrolling, 2D view and an instantaneous (real-time) radial view of the water beneath the transducer. The radial view shows the returns from the sonar signal (using the same color coding as the traditional scrolling view), organised in a circular formation. This view enables you to quickly identify what is currently passing under your transducer (e.g. bottom structure or target etc), in each segment of the depth range.



Trail & A-Scope

The trail and A-scope app page is a splitscreen page that includes a traditional (historical), scrolling, 2D view and an instantaneous (real-time) A-scope view of the water beneath the transducer.



Radial

The radial app page is a fullscreen page that provides an instantaneous (real-time), radial view of the water beneath the transducer. The radial view shows the returns from the sonar signal (using the same color coding as the traditional scrolling view), organised in a circular formation. This view enables you to quickly identify what is currently passing under your transducer (e.g. bottom structure or target etc), in each segment of the depth range.

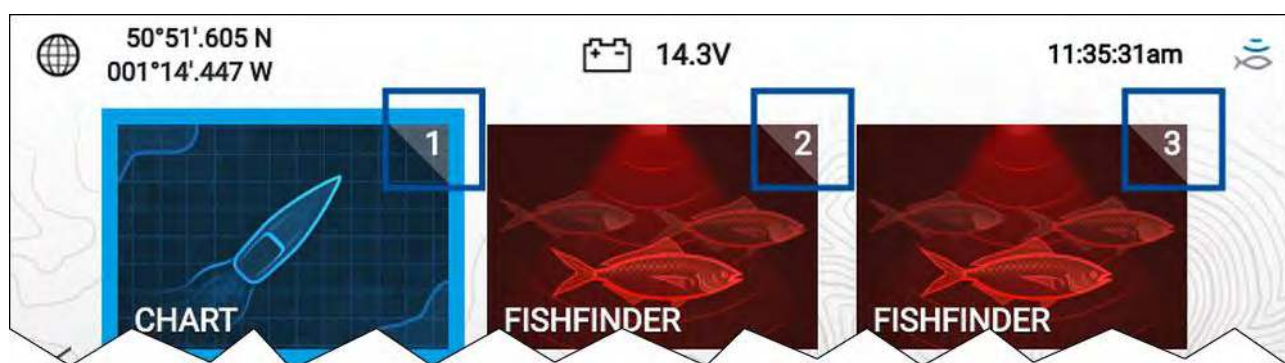


A-Scope

The A-scope app page is a fullscreen page that provides an instantaneous (real-time) view of the water beneath the transducer. This allows you to see what is currently passing under your transducer (e.g. bottom structure or target etc), rather than the historical display provided by the traditional, scrolling, 2D view.

Assigning app pages to Quicklaunch buttons

App pages assigned to the Quicklaunch buttons are identified using the associated Quicklaunch button number in the top right corner of the app page icon.



You can change which app page is assigned to the Quicklaunch buttons by following the steps below:

1. Using the **Directional pad**, highlight the app page icon that you want to assign to a Quicklaunch button.
2. Press and hold the relevant **Quicklaunch** button until the 'Quicklaunch button configured' message is displayed.

The app page icon is updated to show the associated **Quicklaunch** button number in the top right corner of the icon.

3. Repeat steps 1 and 2 for the remaining **Quicklaunch** buttons, if required.

5.2 Customizing app pages

You can customize the homescreen app pages.

1. Highlight the app page icon you want to change.
2. Press and hold the **OK** button.

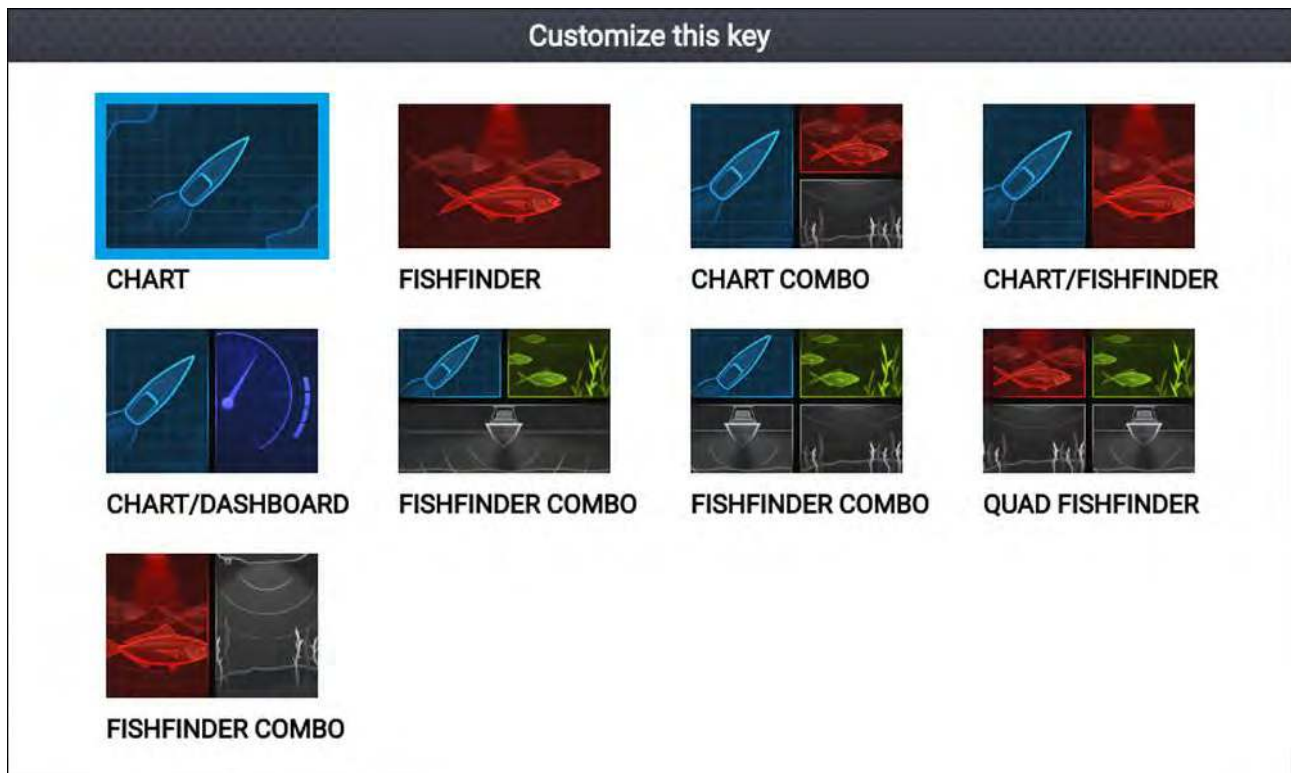
The pop-over menu is displayed.

3. Select the relevant option:

- **Customize** — select customize to change the app page to one of the available configurations.
- **Delete** — select delete to delete the app page icon from the homescreen.
- **Rename** — select rename to change the name of the app page icon using the onscreen keyboard.
- **Assign as Quicklaunch 1/2/3** — select to assign the app page to a Quicklaunch button.

5.3 Creating a new app page

The homescreen consists of 3 homescreen pages, the first page is populated with app page icons by default. New pre-configured app pages can be added to the homescreen.



1. If required, use the **Left** and **Right** buttons to display a homescreen page that has space available.
2. Highlight a blank space on the homescreen.
3. Press and hold the **OK** button.
4. Select the desired app page configuration.

The new app page icon will now be available on the homescreen.

5.4 Satellite navigation / positioning

GPS/GNSS status

Your vessel's GPS/GNSS position coordinates are provided in the top left corner of the homescreen. You can access fix accuracy and settings by selecting this area.

If latitude and longitude is displayed on the homescreen, your vessel has a valid position fix. If the text turns red, it means that your fix accuracy is low.

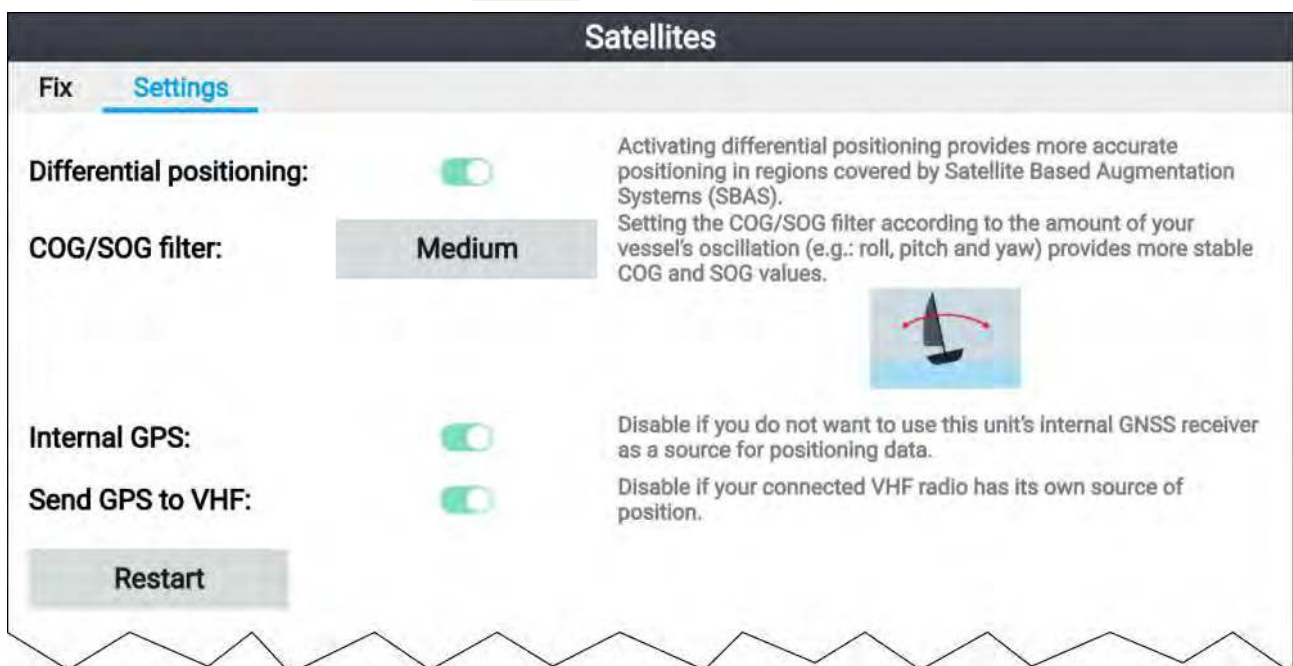


The sky view on the left side of the page shows available satellites and identifies the GNSS constellation to which they belong. The color of the satellite symbol identifies its status:

- White = searching for satellite
- Green = satellite in use
- Orange = tracking satellite

GPS / GNSS settings

Settings for your GPS / GNSS receiver can be accessed by selecting the top left corner of the homescreen and then selecting the **Settings** tab.



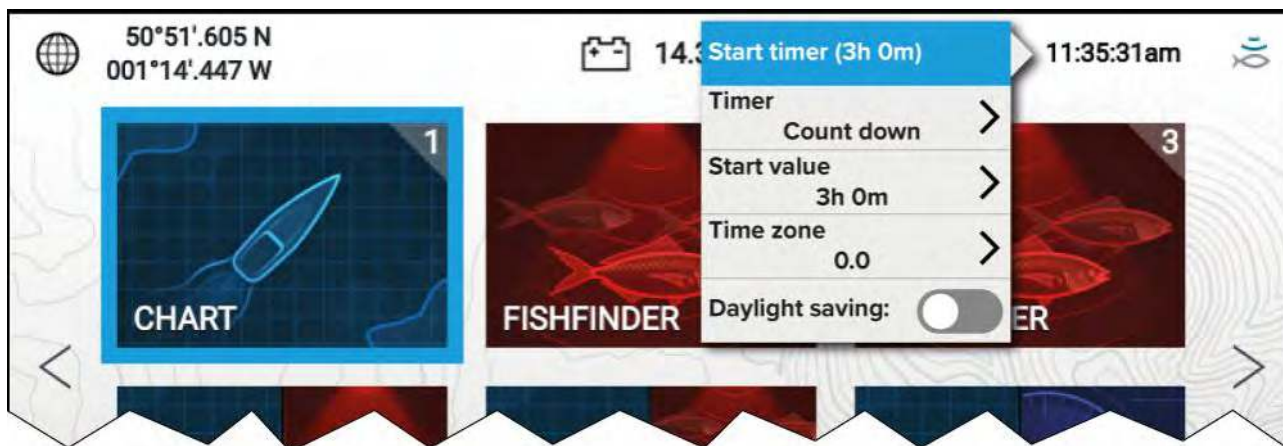
From the GPS / GNSS settings tab you can:

- **Differential positioning:** — Enabling differential positioning provides more accurate positioning in regions covered by Satellite Based Augmentation Systems (SBAS).

- **COG/SOG filter:** — Setting the COG / SOG filter according to the amount of your vessel's oscillation (e.g.: roll, pitch and yaw) provides more stable COG and SOG readings.
- **Internal GPS:** — Enable and disable your display's built-in GPS / GNSS receiver.
- **Send GPS to VHF:** — Enable and disable output of GPS / GNSS data from your display to a connected VHF radio.
- **Restart** — Restart the GPS / GNSS receiver in use by the display.

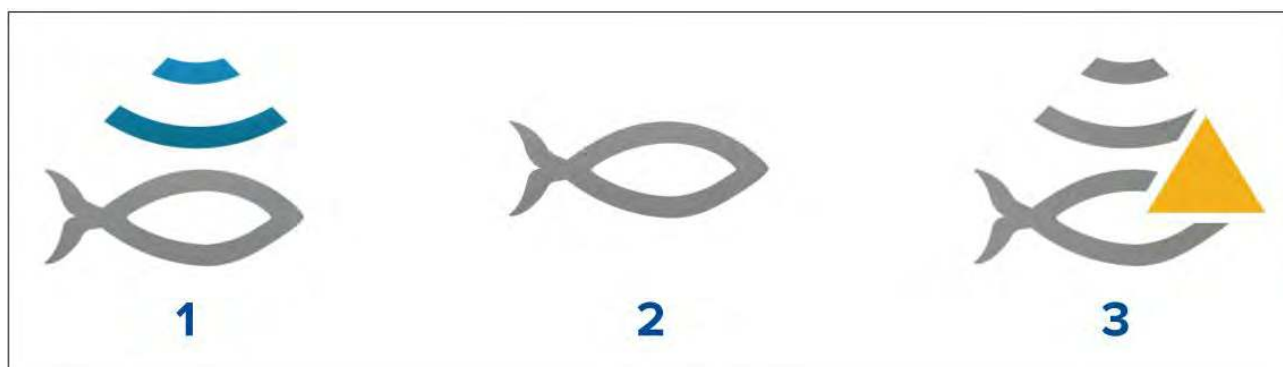
5.5 Status area

The status area is located at the top right of the homescreen. This area displays the current time and identifies the status of the display's sonar ping. The status area pop-over menu provides access to the timer and time and date settings.



Status area icons

The icons displayed in the Status area signify the current status of certain connected devices.



1. Sonar pinging.
2. Sonar ping disabled.
3. Sonar error.

5.6 Timer



A timer is provided in the homescreen status area. The timer can be used as a countdown timer or as a count-up (stopwatch).

Whilst the countdown or count-up timer is in use it is displayed in the status area, below the current time.

Using the count down timer

From the homescreen:

1. Select the status area, located in the top right corner of the homescreen.
2. The status area pop-over menu is displayed.
3. Ensure that **Count down** is selected in the **Timer** option.
4. Select **Start value** and adjust to the desired value.

The count down timer can be set to a maximum of 9 hours and 59 minutes.

5. Press the **Back** button to return to the pop-over menu.
6. Select **Start timer**.

The count down timer can be stopped or reset at anytime from the pop-over menu.

Using the count up timer

From the homescreen:

1. Select the status area, located in the top right corner of the homescreen.
2. The status area pop-over menu is displayed.
3. Ensure that **Count up** is selected in the **Timer** option.
4. Select **Start timer**.

The count up timer can count upwards to a maximum of 23 hours and 59 minutes.

The count up timer can be stopped or reset at anytime from the pop-over menu.

5.7 Alarms

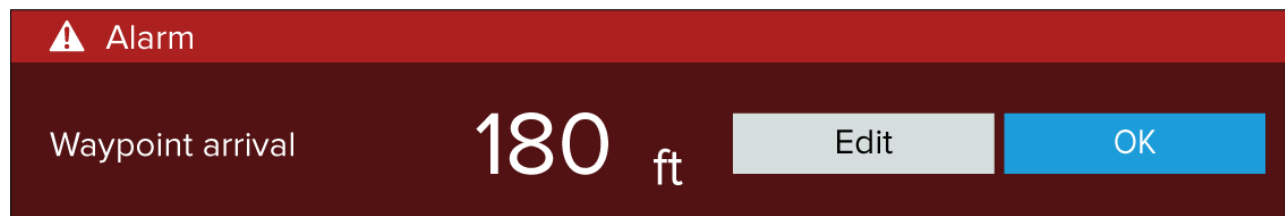
Alarms are used to alert you to a hazard or situation requiring your attention. Alarms are triggered based on their specified thresholds.

The following alarms can be configured on your display:

- Dangerous AIS targets
- Shallow depth
- Waypoint arrival
- Low voltage
- Off track
- Anchor drift
- Water temperature
- Fish detection
- Engine alarms
- Satellite lost fix

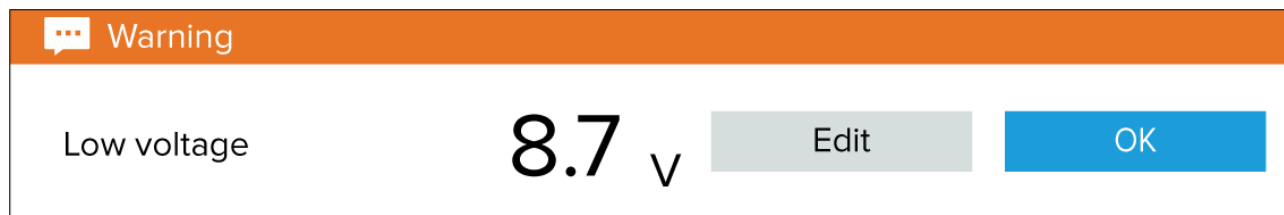
Alarms are color coded to signify their severity:

Dangerous alarm example



Red — is used to signify a dangerous alarm condition, immediate action is required due to a potential or immediate danger to life or vessel. Dangerous alarms are accompanied by an audible tone. The Dangerous alarm notification and audible tone will continue to be displayed until acknowledged or the conditions that triggered the alarm are no longer present.

Warning alarm example



Orange — is used to signify a warning alarm condition. Warning alarms are used to signify that there has been a change in situation that you need to be aware of. Warnings alarms are accompanied by an audible tone. The warning alarm notification and audible tone will continue to be displayed until acknowledged or the conditions that triggered the alarm are no longer present.

Notification example



Blue — is used to signify information requiring user acknowledgement. Information notifications may self dismiss after 3 seconds, unless they require user interaction. Information notifications are not accompanied by an audible tone.

Acknowledging alarms

Follow the steps below to acknowledge an active alarm.

With an alarms notification displayed onscreen:

1. Select **OK**.

The notification is dismissed and the audible tone is stopped.

An acknowledged alarm remains active until the conditions that triggered the alarm are no longer present.

Note:

If an alarm notification includes an **Edit** button, selecting it will display the relevant setting in the Alarms menu so that, if required, you can change the alarm threshold.

5.8 Settings menu

The display's settings can be accessed by selecting the **Settings** icon on the Homescreen.

The following settings and details are available for your display.

Tab	Settings
Getting started	• Hardware and software information about your display. • Update display software. • Change the user interface language. • Enable/disable Retail/demo mode (Simulator mode). • Choose a Demo type. • Enable/disable Demo movie. • View the Terms of Use disclaimer.
Boat details	• Configure Minimum safe depth, height and width. • Configure engines. • Configure tanks. • Configure batteries. • Select transducer
Units	• Configure preferred units of measurement. • Configure date and time settings. • Configure Bearing mode. • Configure system datum. • Configure variation.
This display	• Switching between Light and Dark user interface color themes. • Calibrate an EV-1 heading sensor. • Select data sources. • Diagnostics: View display product information, view product information for connected products, save / erase system logs. • Pair Quantum™ radar scanner. • Perform a Settings or Factory reset.
Alarms	• Configure alarm settings.
Import/export	• Import and export user data (Waypoints, Routes and Tracks) from MicroSD card. • Eject SD card.

Selecting display language

You can choose which language you want the display's user interface to use.

1. Select the **Language** button from the **Getting started** menu: **Homescreen > Settings > Getting started > Language**.
2. Select your desired language.

User Interface languages

The following languages are available:

Arabic (ar-AE)	Bulgarian (bg-BG)	Chinese (Simplified) (zh-CN)	Chinese (Traditional) (zh-TW)
Croatian (hr-HR)	Czech (cs-CZ)	Danish (da-DK)	Dutch (nl-NL)
English (en-GB)	English (en-US)	Estonian (et-EE)	Finnish (fi-FI)
French (fr-FR)	German (de-DE)	Greek (el-GR)	Hebrew (he-IL)
Hungarian (hu-HU)	Icelandic (is-IS)	Indonesian (Bahasa) (id-ID)	Italian (it-IT)

Japanese (ja-JP)	Korean (ko-KR)	Latvian (lv-LV)	Lithuanian (lt-LT)
Malay (Bahasa) (ms-MY ZSM)	Norwegian (nb-NO)	Polish (pl-PL)	Portuguese (Brazilian) (pt-BR)
Russian (ru-RU)	Slovenian (sl-SI)	Spanish (es-ES)	Swedish (sv-SE)
Thai (th-TH)	Turkish (tr-TR)	Vietnamese (vi-VN)	

Boat details

To ensure correct operation and display of data you should set the Boat Details settings according to your requirements.

Boat details can be accessed from the **Settings** menu: **Homescreen > Settings > Boat Details**

Option	Description
Min safe height:	Enter your vessel's maximum unladen height from the waterline. To ensure adequate clearance, it is recommended that you add a safety margin to this figure to allow for variation caused by vessel movements.
Min safe width:	Enter your vessel's maximum width at its widest point. To ensure adequate clearance on both sides, it is recommended that you add a safety margin for port and starboard to this figure to allow for variation caused by vessel movements.
Min safe depth:	Enter your vessel's maximum depth when fully laden. This is the depth from the waterline to the lowest point on the vessel's keel. To ensure adequate clearance, it is recommended that you add a safety margin to this figure to allow for variation caused by vessel movements.
Num of engines:	You can configure your system to display data for up to 2 engines, when connected to a compatible engine management system.
Identify engines:	Once you have selected the number of engines, select Identify engines and follow the onscreen instructions to configure your engines. May require an extra hardware interface to enable engine data to be displayed.
Fuel tanks:	You can configure your system to display data for up to 2 fuel tanks.
Fresh water tanks:	You can configure your system to display data for up to 2 fresh water tanks.
Live well tanks:	You can configure your system to display data for up to 2 Live well tanks.
Gray water tanks:	You can configure your system to display data for a Gray water tank.
Black water tanks:	You can configure your system to display data for a Black water tank.
Batteries:	You can configure your system to display data for up to 3 batteries.
Transducer:	You can select the transducer type that is connected to your display. Important: Ensure the display is powered off before physically changing your transducer.

Units of measure

You can select your preferred units for data readings from the **Units** menu: **Homescreen > Settings > Units**.

Default units of measure are determined by the selected user interface language.

Measurement	Units
Distance units:	• Nautical Miles • NM & m • Statute Miles • Kilometers
Speed units:	• Kts • MPH • KPH
Depth units:	• Meters • Feet • Fathoms
Temperature units:	• Celsius • Fahrenheit
Wind speed units:	• Knots • Metres per Second
Volume units:	• US Gallons • Imperial Gallons • Liters
Economy units:	• Distance per Volume • Volume per Distance • Liters per 100 km
Pressure units:	• Bar • PSI • Kilopascals
Date format:	• MM:DD:YYYY • DD:MM:YYYY • MM:DD:YY • DD:MM:YY
Time format:	• 12hr • 24hr
Time zone:	• UTC offsets

Measurement	Units
Bearing mode:	• True • Magnetic
System datum:	List of available datums.
Variation:	• Auto • Manual
Manual variation:	• 30°W to 30°E

Chapter 6: Waypoints, Routes and Tracks

Chapter contents

- [6.1 Waypoints on page 58](#)
- [6.2 Routes on page 64](#)
- [6.3 Tracks on page 68](#)
- [6.4 User data import and export on page 70](#)

6.1 Waypoints

Waypoints are used to mark specific locations or points of interest.

Waypoints can be used in the Chart and Fishfinder apps. Your display can store up to 5,000 waypoints, which can be sorted in up to 200 waypoint groups.

In the Chart app you can navigate to a waypoint by selecting **Goto** from the Waypoint context menu.

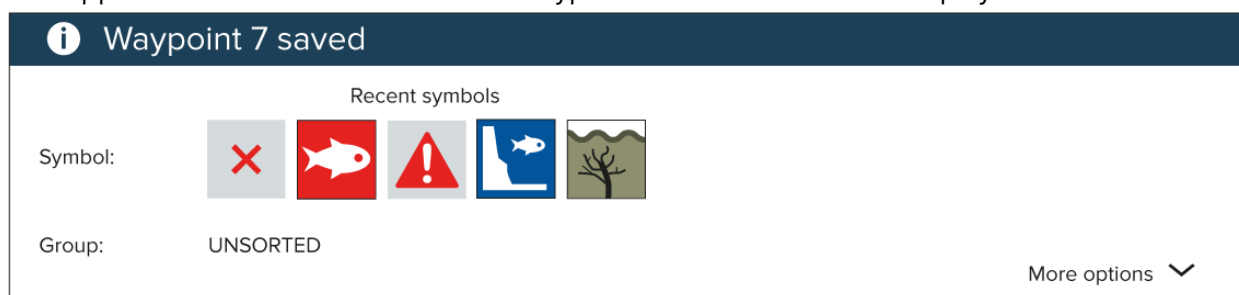
Waypoints can be imported and exported from the display. For more information, refer to: [p.70 — User data import and export](#)

Placing a waypoint (Quick method)

To place a waypoint at a specific location in the Chart or Fishfinder apps, follow the steps below.

1. Use the **Directional pad** to place the cursor over the desired location and press the **Waypoint** button.

The app will be in cursor mode and the waypoint saved notification is displayed.



Note:

If there is no interaction with the notification within 5 seconds the notification will automatically close, saving the waypoint with the default values.

2. If required, select a recent waypoint symbol that you want to assign to the waypoint.
3. Press the **OK** button.

The waypoint will be saved with the chosen symbol, in the waypoint group shown against **Group**.

Placing a waypoint at your vessel's location

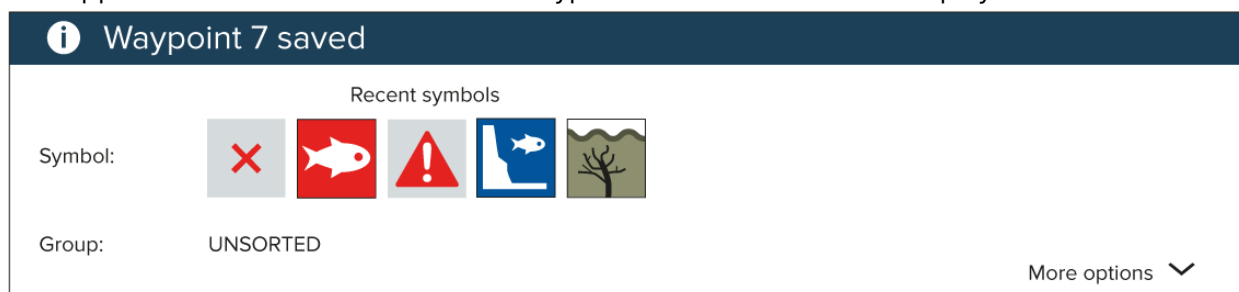
To place a waypoint at your vessel's locations follow the steps below.

Note:

For a waypoint to be placed at your vessel's location your display must have a GPS/GNSS position fix.

1. If, required press the **Back** button to enter Motion mode in the Chart app, or Scrolling mode in the Fishfinder app.
2. Press the **Waypoint** button.

The app will be in cursor mode and the waypoint saved notification is displayed.



Note:

If there is no interaction with the notification within 5 seconds the notification will automatically close, saving the waypoint with the default values.

3. If required, select the a recent waypoint symbol that you want to assign to the waypoint.
4. Press the **OK** button.

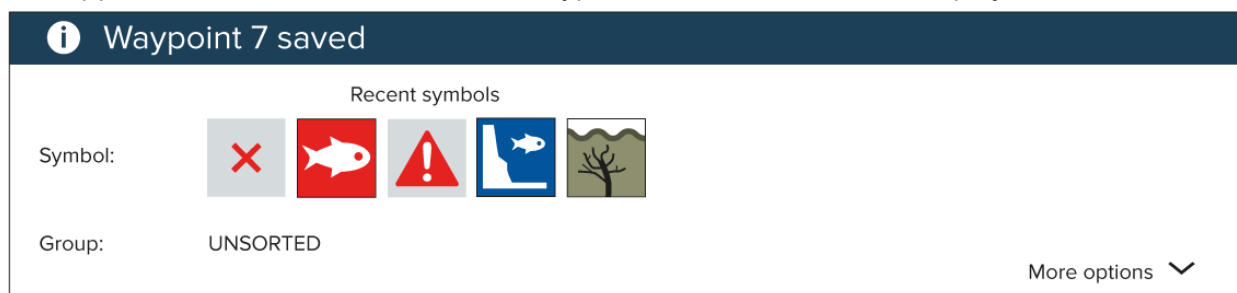
The waypoint will be saved with the chosen symbol, in the waypoint group shown against **Group**.

Placing a waypoint (Detailed method)

You can place a waypoint at a specified location or at the vessel's location and modify the defaults settings (e.g.: waypoint name, symbol or group etc.) by following the steps below.

1. Use the **Directional pad** to place the cursor over the desired location and press the **Waypoint** button.

The app will be in cursor mode and the 'waypoint saved' notification is displayed.

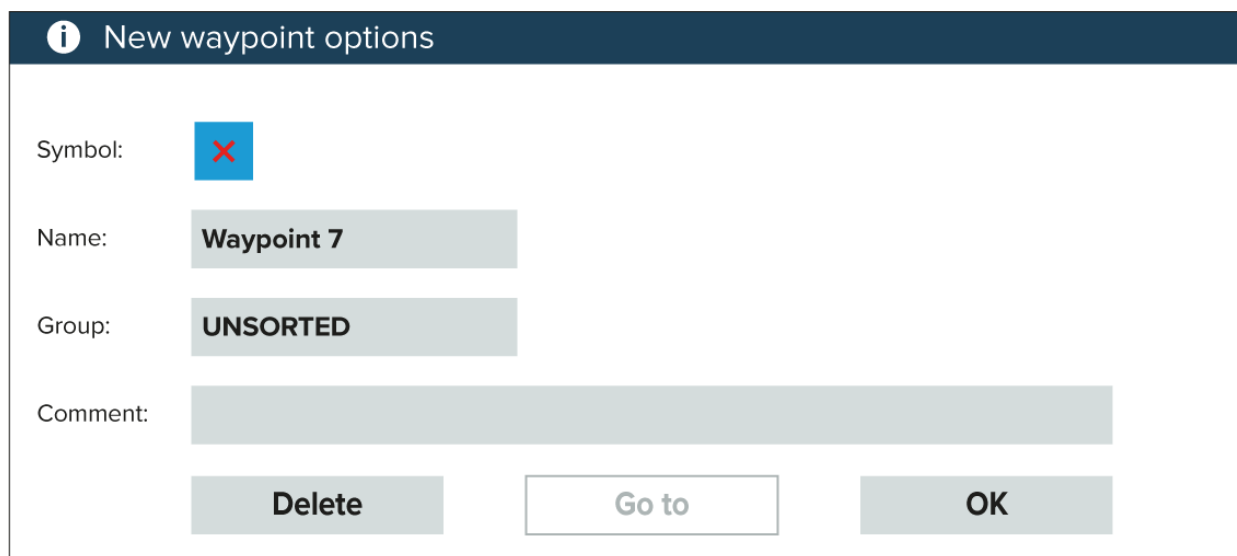


Note:

If there is no interaction with the notification within 5 seconds the notification will automatically close, saving the waypoint with the default values.

2. Press the **Down** button.

The 'new waypoint options' menu is displayed.



3. You can select the waypoint symbol to view a list of available symbols and then select the symbol you want to use.
4. You can select the **Name:** field to open the onscreen keyboard and customize the name of your waypoint.
5. You can select the **Group:** field to open the list of waypoint groups and either choose an existing or create a **New group**.
6. You can also add notes about the waypoint by selecting the **Comment:** field and using the onscreen keyboard.
7. When you have finished customizing the waypoint details, press the **OK** button to save the details.
8. You can select **Goto** to begin navigation to the new waypoint.

Note:

Selecting **Delete** will delete the waypoint.

Moving a waypoint

You can move an existing waypoint to a new location by following the steps below.

1. Select the waypoint that you want to move.
2. Select **more options** from the context menu.
3. Select **Move**.

4. Use the Directional pad to move the waypoint to the new location.
5. Press the **OK** button.

The waypoint has now been moved to its new location.

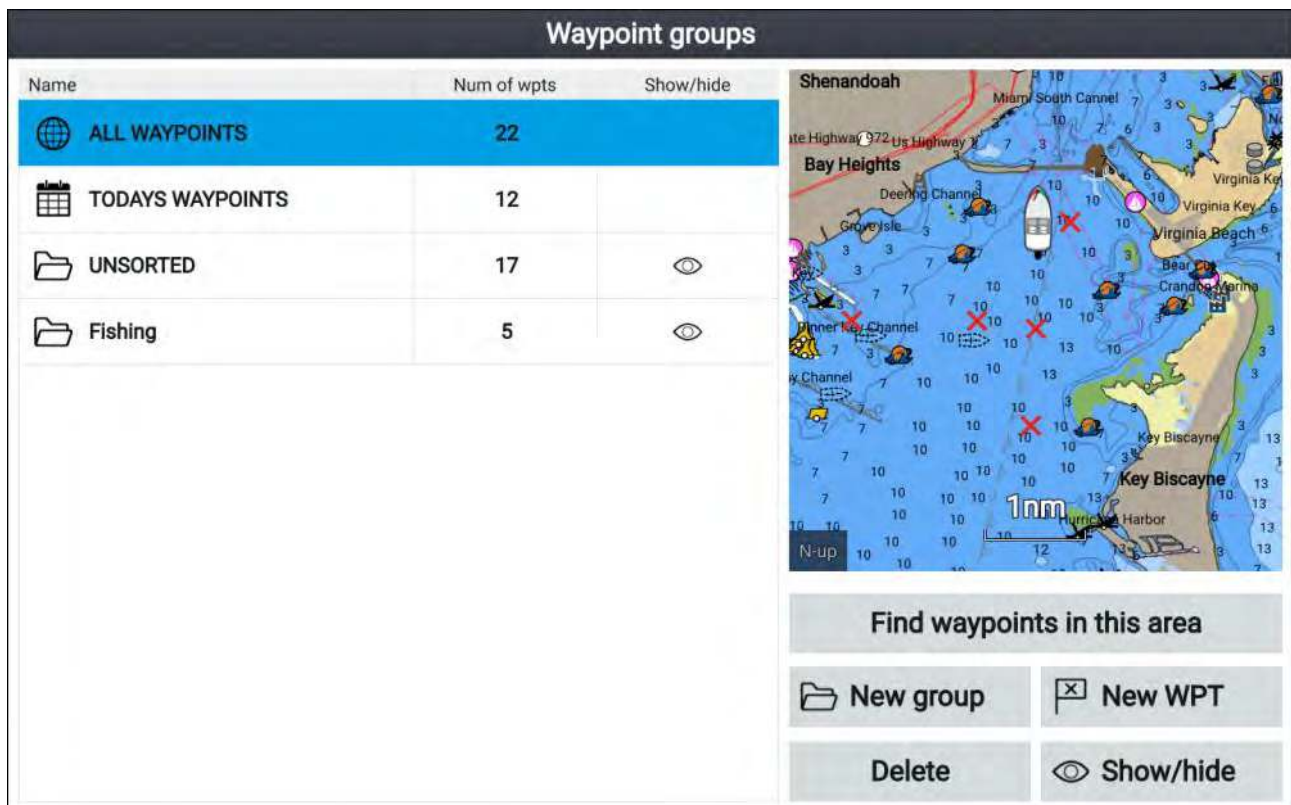
Note:

When moving a waypoint from a route that was generated using autorouting, the new position and route leg are not recalculated using the autorouting feature and the waypoint symbol will not change.

Waypoint management

Waypoints are sorted and displayed in waypoint groups menu.

Waypoint groups menu



Waypoints can be viewed from the waypoint menu which can be accessed from the Homescreen (**Homescreen > Waypoints**) and from the Chart app (**Chart app > Menu > Waypoints**).

Waypoints will be saved to the same group as the last waypoint you created. All waypoints can also be viewed by selecting **ALL WAYPOINTS** and waypoints created the same day can be viewed by selecting **TODAYS WAYPOINTS**.

You can use the waypoint groups menu options to:

- Find nearby waypoints.
- Create a new waypoint group.

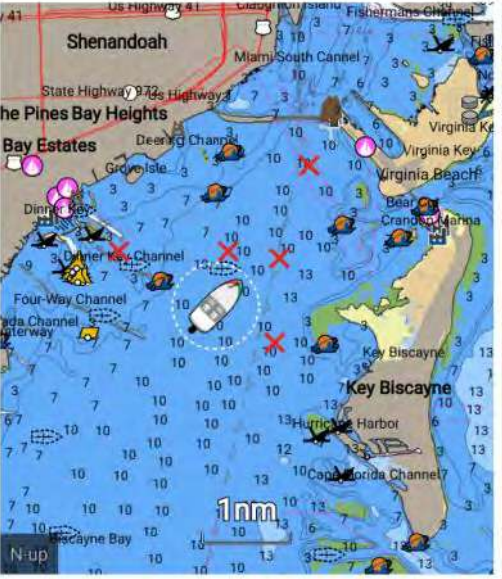
Note: Waypoint group names can be any combination of letters, numbers, symbols and special characters and can include up to 16 characters. Waypoint group names must be unique.

- Create a new waypoint.
- Delete a waypoint or waypoint group.

Waypoint groups

Fishing group

Name	Date created
Fishing	
✖ Waypoint 13	10:02am 16/04/2019
✖ Waypoint 12	12:48am 18/05/2017
✖ Waypoint 11	12:48am 18/05/2017
✖ Waypoint 10	12:48am 18/05/2017
✖ Waypoint 9	12:48am 18/05/2017
✖ Waypoint 8	12:47am 18/05/2017



Find waypoints in this area

Multi-edit New waypoint

Selecting **ALL WAYPOINTS**, **TODAYS WAYPOINTS**, **UNSORTED** or a user created waypoint group will display a list of all the waypoints in that group / category.

With a list of waypoint displayed you can:

- Find waypoints located in the area covered by the LiveView pane.
- Edit multiple waypoints (i.e.: you can change the symbol used for multiple waypoints, move multiple waypoints to a different group or delete multiple waypoints).
- Create a new waypoint in the current waypoint group.
- View and customize waypoint details.

Waypoint details

Waypoint 13

Name:	Waypoint 13		
Symbol:			
Group:	Fishing		
Position:	25°54'.567 N 079°56'.313 W		
Bearing:	049.9°T	Range:	18.56nm
Water temp:	--	Depth:	--
Time:	10:02:34am	Date:	16/04/2019
Comment:			



Delete

View on chart

Go to

Selecting a waypoint from the list displays customizable details for that waypoint. The waypoint's location is also displayed in the LiveView pane on the right side of the screen

With the waypoint details displayed you can:

- Edit the waypoint's Name.

Note: Waypoint names can be any combination of letters, numbers, symbols and special characters and can include up to 16 characters. Waypoint names must be unique.

- Change the waypoint's symbol.
- Assign or change the waypoint group.
- Enter new position coordinates for the waypoint.
- Add or edit the waypoint comment.

Note: Waypoint comments can be any combination of letters, numbers, symbols and special characters and can include up to 32 characters.

- Delete the waypoint.
- Perform a Go to.
- View the waypoint in the Chart app.

Creating a waypoint group

To create a new waypoint group follow the steps below.

From the homescreen:

1. Select **Waypoints**.
2. Select **New group**.
3. Enter a name for the group using the onscreen keyboard.
4. Select **Save**.

The new waypoint group will become the new default group for all new waypoints.

Deleting a waypoint group

To delete a waypoint group follow the steps below.

From the homescreen:

1. Select **Waypoints**.
2. Select **Delete**.

3. Select the Group that you want to delete.
4. Select **Delete selected**.
5. Select **Yes**.

The waypoint group and waypoints that are assigned to that group will be deleted.

Creating a waypoint based on coordinates

You can manually create a waypoint based on the coordinates of the location where you want the waypoint placed.

From the homescreen:

1. Select **Waypoints**.
2. Select **New WPT**.
3. Enter the relevant details in the available fields.
4. Choose a waypoint symbol.
5. Enter the position coordinates where you want the waypoint placed by selecting on the **Position:** field and using the onscreen keypad to enter the latitude and longitude for the location where you want the waypoint placed..

By default your vessel's coordinates will be displayed.

6. Select **Save** to return to the waypoint details.
7. Press the **Back** button to return to the Waypoint groups menu.

Finding nearby waypoints

You can find waypoints that are within the LiveView pane by following the steps below.

The waypoint find feature will find and create a list of all waypoints located within the area covered by the LiveView pane.

From the homescreen:

1. Select **Waypoints**.
2. To find waypoints that are located within the area covered by the LiveView pane, select **Find waypoints in this area**, otherwise
3. Highlight a waypoint in the waypoint list and select **Find waypoints in this area**.

A list of all the found waypoints will be shown in the waypoint list.

Panning the LiveView area

You can change the chart area displayed in the LiveView.

1. Open the **Waypoints** menu.

*The waypoints menu can be accessed from the Homescreen (**Homescreen > Waypoints**) and from the Chart app (**Chart app > Menu > Waypoints**).*

2. Press the **Right** button.
Find waypoints in this area will be highlighted.
3. Press the **Up** button.
Focus will move to the LiveView pane.
4. Press the **OK** button.
The LiveView pane will enter panning mode.
5. Use the **Directional pad** to pan the chart area to the desired location.
6. Press the **Back** button.
7. Select **Find waypoints in this area**.

Showing and hiding waypoint groups

When the waypoint menu is accessed from the Chart app you can hide and show waypoints.

From the Chart app:

1. Press the **Menu** button.
2. Select **Waypoints**.
3. Select **Show/hide**.

The list of waypoint groups is displayed, all waypoint groups are selected (ticked) by default.

4. Deselect any groups that you do not want to change.
You can also use the **Show all** and **Hide all** options if you want to show or hide all of your waypoints.
5. Press the **Back** button to return to the waypoints menu.

Note:

The **Show/hide** options is not available when accessing the waypoint menu form the homescreen.

Waypoint sharing

An Element™ display will share waypoints with a second Element™ display connected to the same SeaTalkng® / NMEA 2000 network.

Note:

- More than 2 Element™ displays cannot be connected to the same network.
- Routes and tracks are not shared. If a route is created on display 1 only the route's waypoints will be shared with display 2.

The following waypoint functions will be synchronized between displays:

- Creating individual waypoints
- Deleting waypoints
- Editing waypoint details
- Moving waypoint location
- Creating an empty waypoint group
- Adding individual waypoints to a group

The following waypoint functions will NOT be synchronized between displays:

- Moving a waypoint to a different group
- Multi-move of waypoints
- Multi-edit of waypoint details
- Multi-delete of waypoints
- Deleting a waypoint group

Note:

Performing a waypoint function that does not support synchronization will break the link between the waypoints on each Element™ display. Those waypoints must then be managed individually on each display.

6.2 Routes

Routes are used to plan your journey in advance. You can plan your journey directly on your display, or at home using software capable of exporting waypoints and routes in standard .gpx format.

Routes consist of a number of waypoints. Your display can store up to 50 routes, each route consisting of up to 250 waypoints. When creating routes the route capacity is subject to the display's 5,000 waypoint limit (e.g.: your display could store 20 routes each containing 250 waypoints).

To navigate a saved route, place the cursor over the route and press the **OK** button, then select **Follow route** from the context menu.

Routes can be imported and exported from the display. For more information, refer to:
[p.70 — User data import and export](#)

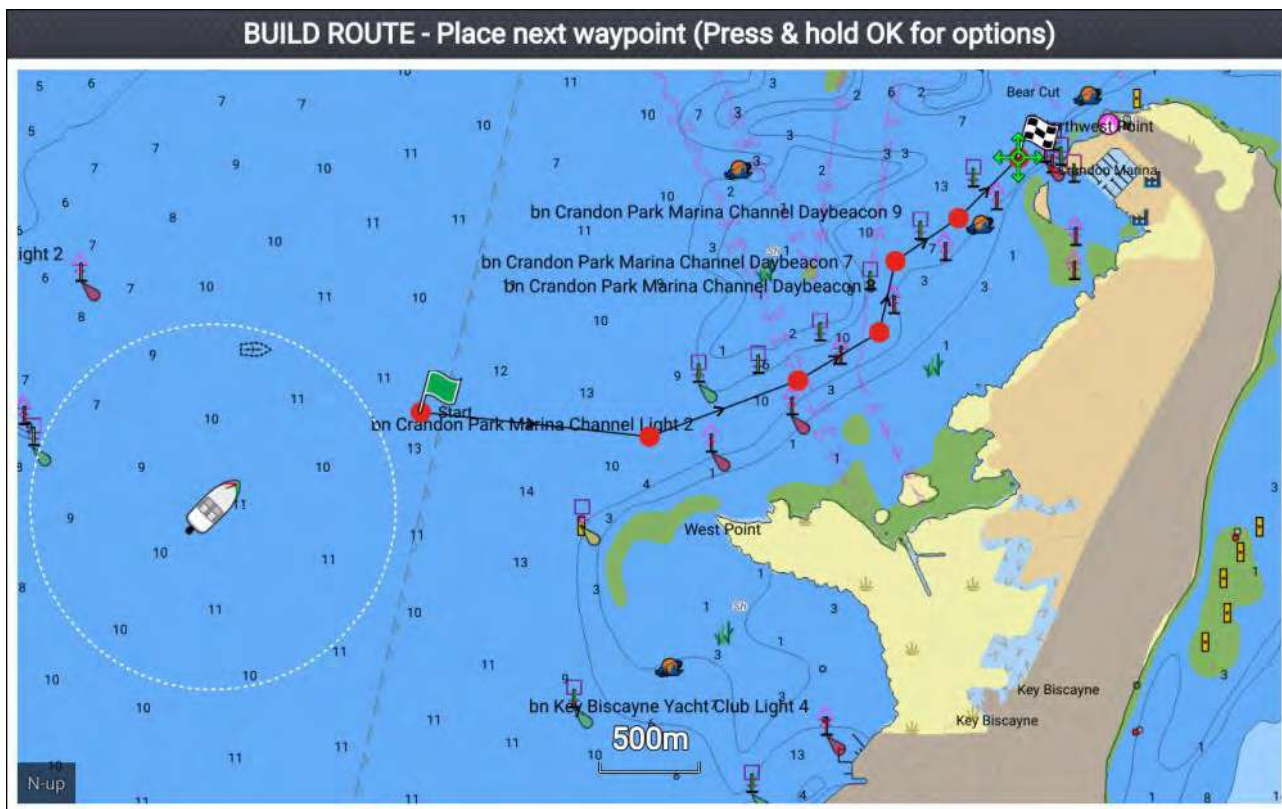
Creating a Route

Follow the steps below to build a new route

Routes can be created in the Chart app.

Important:

Before following a route, you must ensure that each waypoint and leg of your route is safe for your vessel to navigate.



1. Select the location for the first waypoint.
2. Select **Build route** from the context menu.
3. Select the location for the second waypoint.
The 2 waypoints will be joined by a line, creating the first leg of your route.
4. Select the location for the subsequent waypoints, required to complete your route.
5. When your route is complete press and hold the **OK** button and then select **Finish build** from the context menu.
The finish route build notification is displayed.
6. From the notification you can either:
 - Select **Follow** to immediately start following the route, or
 - Select **Follow in reverse** to follow the route in reverse waypoint order, or
 - Select **Route plan** to view the route plan menu, or
 - Select **Exit** to return to the Chart app.

Note:

You can press the **Back** button at anytime during route building to remove the last waypoint you placed.

Use Autorouting during route creation

Whilst building a route you can use Autorouting to automatically add a route leg to a route you have already started to create. The Autorouting features require compatible cartography.

1. Press and hold anywhere on screen and select either **Autoroute to wpt** or **Autoroute to here**.

*Selecting **Autoroute to wpt** will allow you to select a waypoint from your Waypoints list to include in your route, selecting **Autoroute to here** will create a route leg to the cursor's current position.*

Once an Autoroute leg has been added you can select **Finish route build** or add further manual or autoroute route legs.

Autorouting

Autorouting is available when using compatible cartography. Autorouting allows you to build a route automatically between a point on the chart and your vessel.



Selecting **Autoroute to here** from the chart context menu, or selecting **Autoroute to** from an existing waypoint's context menu will create a route automatically between your vessel and the chosen point.

The created route is generated by comparing data available on your cartography against the minimum safe distances specified in the **Boat details** menu: (**Homescreen > Settings > Boat details**).

Waypoints will not be placed in areas that conflict with your specified minimum safe distances. Caution symbols are used for waypoints that are near objects or restricted areas.

Never follow a route before checking each route leg is safe for your vessel.

Reviewing an automatically generated route

Before following any route you must ensure that it is safe to do so.

Upon Route completion:

1. Range in on each route leg and waypoint that make up the Route.
2. Check either side of the route leg and around the waypoint for any possible obstructions.

Obstructions can be charted objects or restricted areas. Routes generated automatically should use the caution waypoint symbol in areas where there are possible obstructions.

3. Where obstructions exist move the necessary waypoints so that the waypoint and route leg is no longer obstructed.

Route management

Routes are managed using the routes and tracks menu.

The **Routes & Tracks** menu can be accessed from the Homescreen and from the Chart app: **Homescreen > Routes & Tracks**, or **Chart app > Menu > Routes & Tracks**.

When the routes and tracks menu is opened the routes menu is displayed by default.

Routes menu

Routes and Tracks

Routes
Tracks

Name	Length	Num of wpts	Show/hide
Route 2	100.2nm	6	
Route 3	1.96nm	8	

New route

Delete

Show/hide

From the route menu you can **Delete** routes, create a **New route** using existing waypoints or **Show/hide** routes.

To view the route plan, select a route and choose **View route plan** from the pop-over menu.

Route plan

The route plan displays a list of all waypoints in the route and includes a LiveView pane showing the route's location.

Route plan: Route 3

Route	Brg	Dist	ETA
Route 3			
Waypoint 14	067°T	0.57nm	12:18pm
Waypoint 15	096°T	0.63nm (1.20nm)	12:21pm
Waypoint 16	069°T	0.43nm (1.63nm)	12:23pm
Waypoint 17	059°T	0.26nm (1.89nm)	12:24pm
Waypoint 18	013°T	370m (2.09nm)	12:25pm
Waypoint 19	056°T	387m (2.30nm)	12:26pm
Waypoint 20	045°T	431m (2.53nm)	12:27pm
Waypoint 20	000°T	0m (2.53nm)	12:27pm

ETA based on current SOG: 13.5kts

Stop

Reverse

Add waypoint

Route options

Time: 12:16pm 16/04/2019

From the route plan you can:

- navigate the route by selecting **Follow**
- change the route direction by selecting **Reverse**

- add an existing waypoint to the route by selecting **Add waypoint**
- change route options, such as route name, route color, route hide or delete the route by selecting the relevant option from the **Route options** pop-over menu.

Note: Route names can be any combination of letters, numbers, symbols and special characters and can include up to 16 characters. Route names must be unique.

By selecting a waypoint from the route plan you can use the pop-over menu to:

- change the position of the waypoint in the route by selecting **Move up** or **Move down**.
- remove the waypoint from the route by selecting **Remove from route**.
- delete the waypoint by selecting **Delete waypoint**.
- edit the waypoint details by selecting **Edit waypoint**.
- start to follow the route from the selected waypoints by selecting **Follow from here**.

6.3 Tracks

Tracks are used to record where you have been. Tracks are made up of track points that are created at regular time or distance intervals.

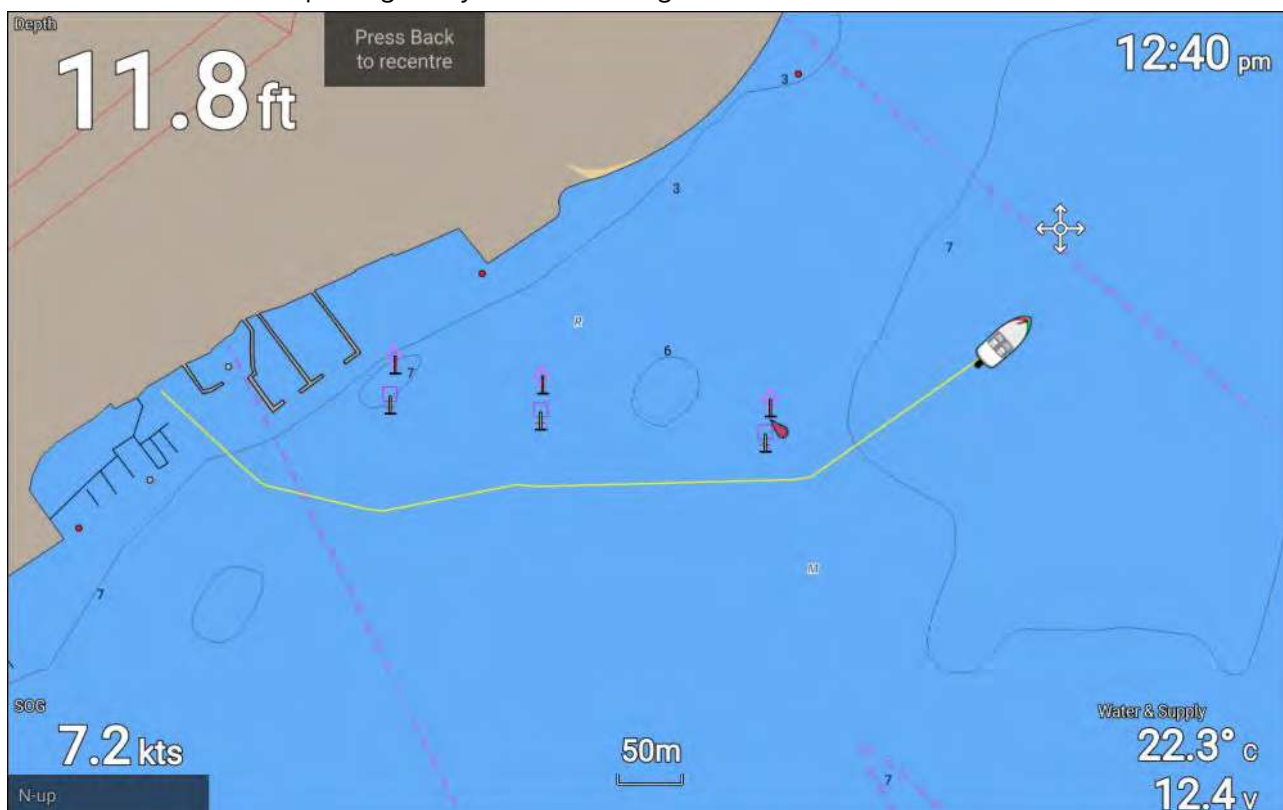
You can store up to 15 tracks on your display, each track can contain up to 10,000 points.

Tracks can be converted into routes so that they can be followed.

Tracks can be imported and exported from the display. For more information, refer to:
[p.70 — User data import and export](#)

Creating a track

You can record your vessel's voyage using Tracks. Once a Track is saved it can be converted to a route so that the same passage may be followed again at a later date.



With the Chart app displayed:

1. If required, press the **Back** button to enter motion mode.
2. Press the **OK** button.
The boat details pop-over menu is displayed.
3. Select **Start track**.
Your vessel's voyage will now be recorded.

4. When your voyage is complete, select **Stop track** from the boat details pop-over menu.

You can also start a new track recording at anytime from the Routes & Tracks menu: accessible from the homescreen: **Homescreen > Route & Tracks** and from the Chart app menu: **Menu > Routes & Tracks**.

Converting a track to a route

From the **Routes & Tracks** menu, accessible from the homescreen **Homescreen > Routes & Tracks** and the Chart app: **Menu > Routes & Tracks**.

1. Select the **Tracks** tab..
2. Select the track that you want to convert.
3. Select **Create route from track** from the pop-over menu.
4. Select **OK** to return to the tracks menu, or.
5. Select **Edit** to view the route plan.

Track management

Tracks are managed using the tracks menu.

The **Routes & Tracks** menu can be accessed from the Homescreen and from the Chart app: **Homescreen > Routes & Tracks**, or **Chart app > Menu > Routes & Tracks**.

When the routes and tracks menu is opened the routes menu is displayed by default. Select the **Tracks** tab to display the tracks menu.

Track menu

Name	Points	Length	Show/hide
Track 1	405	0.56nm	
Track 2	55	2.50nm	
Track 3	63	3.45nm	

From the tracks menu you can:

- Start or Stop tracks recording.
- Change track recording settings.
- Delete tracks.
- Show or hide tracks.

By selecting a track from the list you can use the pop-over menu to:

- edit the track name.

Note: Track names can be any combination of letters, numbers, symbols and special characters and can include up to 16 characters. Track names must be unique.

- change the line color the track uses.
- Convert the track into a route.
- Delete the track.

Track settings

The following track settings are available which change the way tracks are recorded.

Menu item and description	Options	
Color mode: Track line color can be set to a specific color, or you be changed automatically every day or after every track.	• Red • Yellow • Green • Blue • Purple • Orange • Black • Change each day (default) • Change each track	
Record by: You can change the way that the track points, which make up the track are dropped In Auto the track interval is set automatically to minimize the track points used whilst maintaining the actual path taken	• Auto • Time (default) • Distance	
Interval: You can change the interval at which track points are dropped.	Time intervals: • 2 secs (default) • 5 secs • 10 secs • 30 secs • 1 min • 3 mins • 5 mins • 10 mins • 30 mins	Distance intervals • 120 ft (default) • 300 ft • 600 ft • 0.20 nm • 0.50 nm • 1.00 nm

6.4 User data import and export

User data (i.e.: Waypoint, Routes and Tracks) can be imported and exported from your display. User data is saved in the common .gpx file format.

The Import/export menu can be accessed from the homescreen settings menu **Homescreen > Settings > Import/export**.



Saving user data

You can backup your user data (waypoints, routes and tracks) to a MicroSD card.

1. Insert a memory card into your display's card reader.
2. Select **Save data to card** from the Import/export menu: **Homescreen > My data > Import/export**.
A pop-over menu is displayed.
3. Select the desired option:
 - **Save all data** to save (export) all waypoints, routes and tracks.
 - **Save waypoints** to save (export) all waypoints.
 - **Save routes** to save (export) all routes.
 - **Save tracks** to save (export) all tracks.
4. Select **Save** to save the user data using the default filename. Alternatively:
 - i. Use the onscreen keyboard to enter your own filename and then select **Save**.
5. Select **OK** to return to the Import/export menu, or select **Eject card** to safely remove the memory card.

The user data file is saved to the '\Raymarine\My Data\' directory of your memory card in gpx format.

Importing user data

You can import user data (i.e.: GPX format Waypoints, Routes and Tracks) to your display.

1. Insert the MicroSD card that contains your user data files into the memory card reader on your display.
2. Select **Import from card** from the Import/export menu: **(Homescreen > Settings > Import/export > Import from card)**.
3. Navigate to your User data file (.gpx).
4. Select the relevant GPX file.
Your user data has now been imported.
5. Select **OK**.

Chapter 7: Chart app

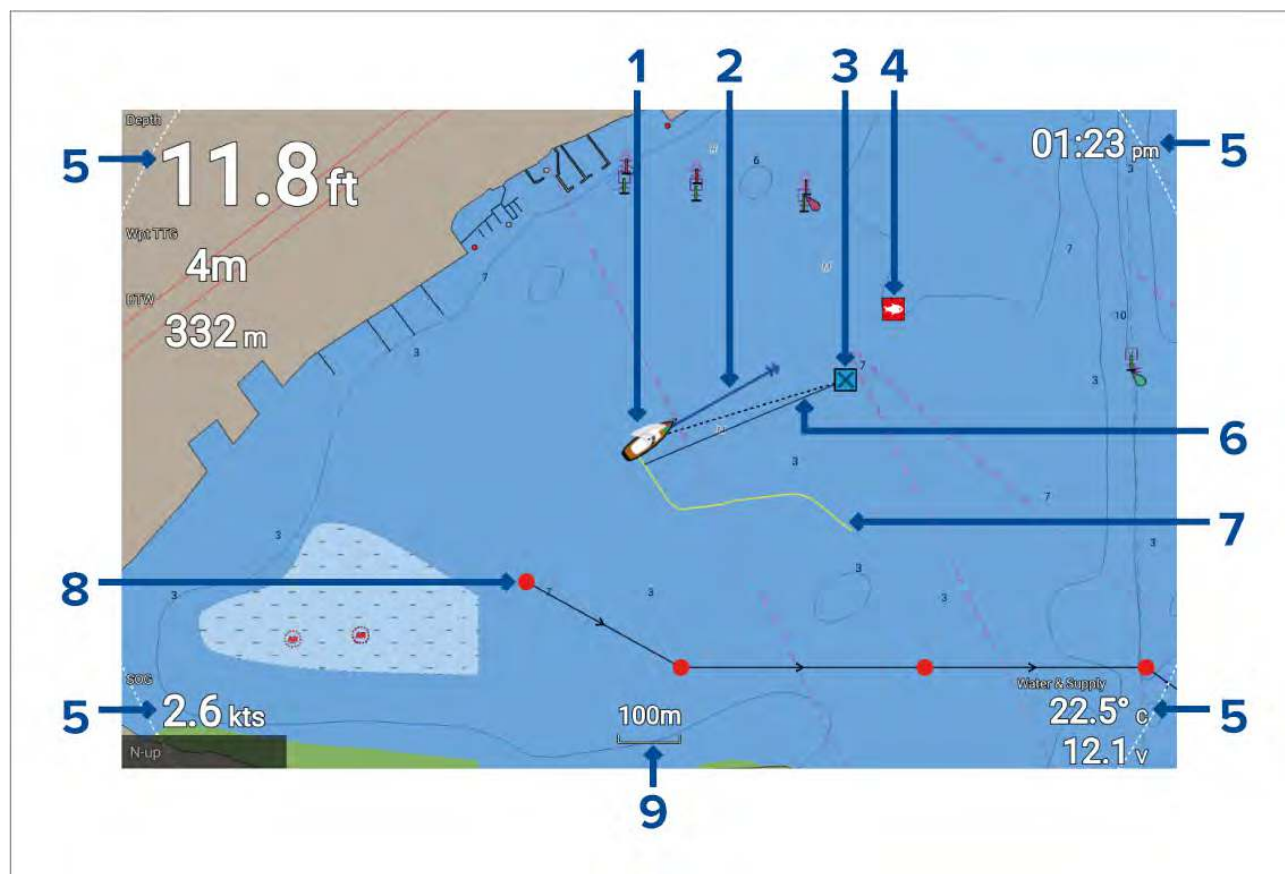
Chapter contents

- [7.1 Chart app overview on page 74](#)
- [7.2 Automatic Identification System \(AIS\) support on page 79](#)
- [7.3 Navigation on page 84](#)
- [7.4 Find nearest on page 87](#)
- [7.5 RealBathy™ on page 89](#)
- [7.6 Tides mode on page 91](#)
- [7.7 Chart settings menu on page 95](#)
- [7.8 SonarChart™ Live on page 99](#)

7.1 Chart app overview

The Chart app displays a representation of your vessel in relation to land masses and other charted objects, which enables you to plan and navigate to your desired destination. The Chart app requires a GNSS (GPS) position fix in order to display your vessel at the correct location on a world map.

For each instance of the Chart app you can select which electronic cartography you want to use. The selection will persist over a power cycle.



1	Vessel icon This icon represents your vessel, only displayed when a GNSS (GPS) position fix is available. The icon is replaced with a Black dot if no heading or COG data is available).
2	COG line If Course Over Ground (COG) data is available, you can display a COG vector for your vessel.
3	Destination waypoint During a go to, this is the current destination waypoint.
4	Waypoint Use waypoints to mark specific locations or points of interest.
5	Databoxes Databoxes display key information that is available on your system. You can configure which data is shown in each databox or the databoxes can be hidden.
6	Destination line During a go to, a dashed line connects your vessel to the destination point.
7	Track You can record the passage your vessel takes using Tracks.
8	Route You can plan your route in advance by creating a Route using waypoints to mark each route leg.
9	Chart range Identifies the scale for the displayed chart range.

Chart app controls

The Chart app has 2 control modes, motion mode and cursor mode. The behavior of some controls are dependent upon control mode.

Motion mode

Motion mode is the default mode when the Chart app is opened. In motion mode the vessel icon remains centered onscreen and the chart area automatically pans as progress is made.

Controls behavior:

- Pressing the **OK** button opens the vessel context menu.
- Pressing any button on the **Directional pad** will switch to Cursor mode.
- Pressing the **Waypoint** button will place a waypoint at your vessel's current location.
- Pressing the **Plus** or **Minus** buttons will range in and range out respectively, centered around your vessel .

Cursor mode

In cursor mode the chart area remains static and the vessel icon moves in the direction of travel.

Controls behavior:

- Pressing the **OK** button opens the context menu for the area or charted object directly under the cursor's position.
- Pressing any button on the **Directional pad** moves the cursor in the respective direction, when the cursor reaches the edge of the app window the chart area will pan in that direction.
- Pressing the **Waypoint** button will place a waypoint at the cursor's location.
- Pressing the **Plus** or **Minus** buttons will range in and range out respectively, centered around the cursor position.
- Pressing the **Back** button will re-center the vessel icon and switch back to Motion mode.

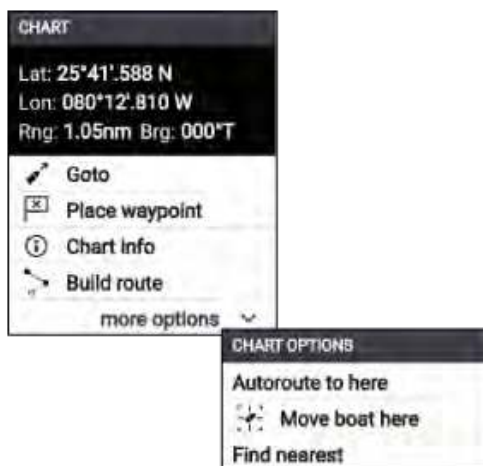
Chart ranging and panning

You can change the range (zoom level) in the Chart app using the **Plus** and **Minus** buttons.

You can pan the chart area using the **Directional pad**.

Chart app context menu

Context menus provide context sensitive information and menu options.



- The Chart app context menu is accessed by selecting a location or a cartographic object in the Chart app.
- The context menu provides Latitude, longitude, range and bearing details for the selected location or object.
- The context menu provides quick access to relevant menu options.
- Select **more options** to display further options.

Note:

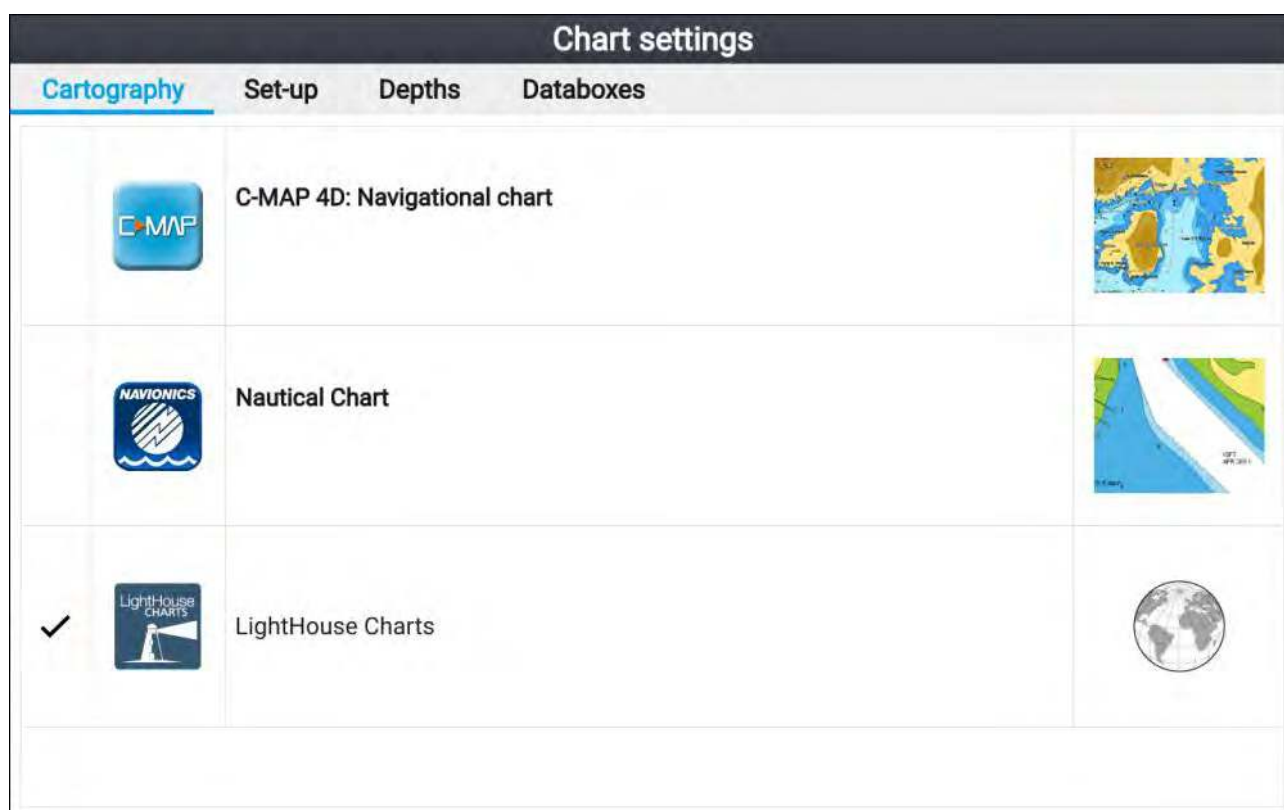
The **Move boat here** option is only available in Demo/simulator mode.

The following options are available from the chart context menu:

- Goto
- Place waypoint
- Chart info
- Build route
- Autoroute to here
- Move boat here
- Find nearest

Selecting a chart card

You can use LightHouse™ charts and compatible Navionics and C-MAP electronic charts. The electronic chart cards must be inserted into your display's MicroSD card reader.



From the Chart app:

1. Press the **Menu** button.
2. Select the **Settings** icon.

*Pressing the Directional pad's **Up** button once the menu opens will move the selection to the bottom of the menu and highlight the settings icon.*

3. Select the cartography that you want to use from the Cartography tab.

The menu will close and the Chart app will display your chosen cartography.

Chart modes

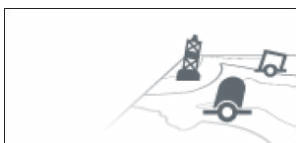
The Chart app provides preset modes that can be used to quickly set up the Chart app for your intended use.

To change chart mode select the required mode from the app menu.



SIMPLE

Simple mode suppresses chart detail to provide a clearer, simpler view for general orientation. In simple mode only navigation-related menu options are available. Changes made to settings are not saved in simple mode.



DETAILED

Detailed mode is the default mode. Full chart details and menu options are available. Changes made to settings are saved.



FISHING

Fishing mode optimizes the Chart app for fishing. If supported by your cartography, fishing mode also displays more detailed contour lines. Full menu options are available. Changes made to settings are saved.



RUNNING

Running mode optimizes the Chart app for fast running. In running mode, chart detail is suppressed and full vessel offset is applied providing a clearer view ahead, ideal for faster running conditions. Full menu options are available. The Chart app can be configured to enter running mode automatically when vessel speed exceeds 10 knots. Changes made to settings are saved.



TIDES

In Tides mode, tide and current station icons are replaced with graphics representing tide and current conditions. Animation controls are displayed that enable playback of Tide and Current predictions over a 24 hour period.

Tides mode also suppresses chart detail, to enhance the tide and current graphics and enables set and drift vector graphics around your own vessel.

View and motion

Controls are available which determine how the chart is displayed in relation to your vessel icon.

Chart motion

Chart motion controls how the chart and boat are drawn in relation to each other.

The following options are available:

- **Relative motion** — In relative motion the vessel icon remains fixed onscreen and the chart area moves relative to your position. In this mode you can adjust the fixed position of the vessel icon using the **Boat position** setting..
- **True motion** — In true motion the chart is fixed and your vessel icon moves around the chart. As the vessel icon reaches the edge of the screen, the chart is redrawn to reveal the area in front of your vessel.
- **Auto range** — In auto range the largest possible scale is maintained that will display both your vessel and the destination / target waypoint simultaneously.

Chart orientation

The orientation of the chart affects the alignment of the chart relative to either your vessel heading, your course or North.

The following options are available:

- **North-up** — In north-up the top of the screen always points towards north. As your vessel's heading changes, the vessel icon rotates accordingly.
- **Head-up** — In head-up the top of the screen always points towards your vessel's current heading, and as your heading changes the chart rotates accordingly.
- **Course-up** — In course-up the top of the screen always points towards your destination, and as your destination changes the chart rotates accordingly.

Boat position

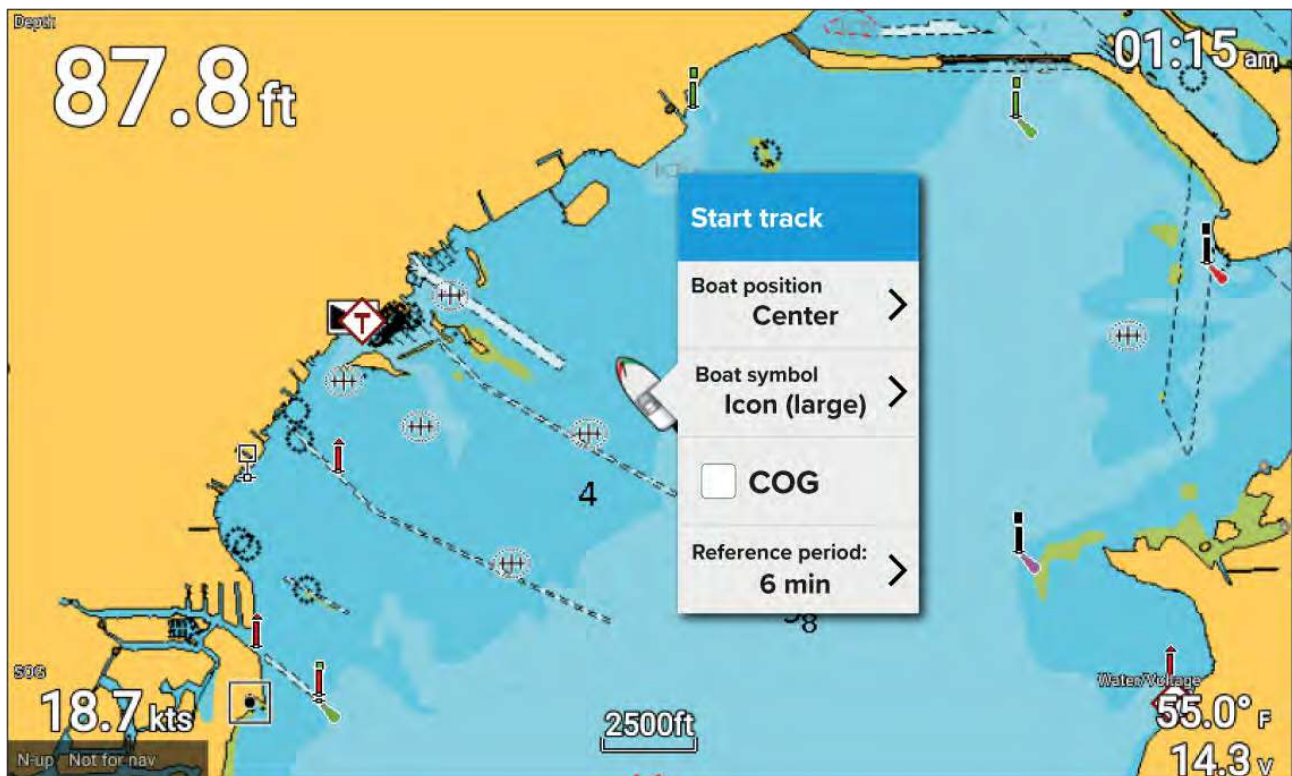
The boat position determines the position of the vessel icon onscreen. Your boat position can only be changed when the **Chart motion** setting is set to **Relative motion**. You can change the position of the vessel icon to provide a greater distance in front of your vessel.

The following options are available:

- **Center** — Center is the default boat position and places the vessel icon in the center of the screen.
- **Partial offset** — Partial offset positions the vessel icon half way between the center and the bottom of the screen.
- **Full offset** — Full offset positions the vessel icon toward the bottom of the screen providing the greatest view ahead.

Vessel details

The Vessel details pop-over provides access to vessel-related settings.



From the Vessel details pop-over you can:

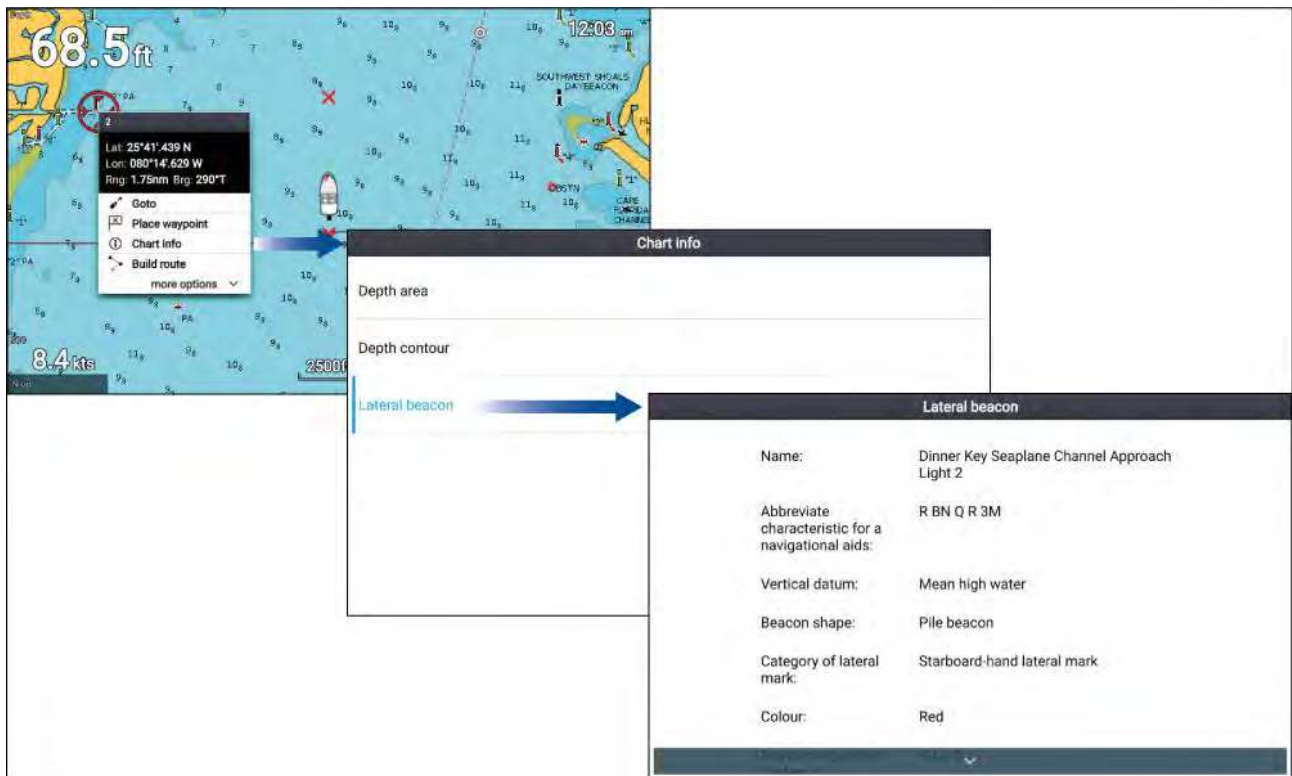
- start/stop a track.
- offset the position of the boat symbol.
- change the symbol used to represent your vessel.
- show / hide COG vector.
- set the length of reference periods for vectors.

Viewing object information

Charted objects that are available with your cartography can be selected, and object information viewed.



When you select an object, the cursor will change to the Object cursor.



1. Press the **OK** button to display the object context menu.
2. Select **Chart info**.
A list of nearby objects is displayed.
3. Select an item from the list to display detailed related information.

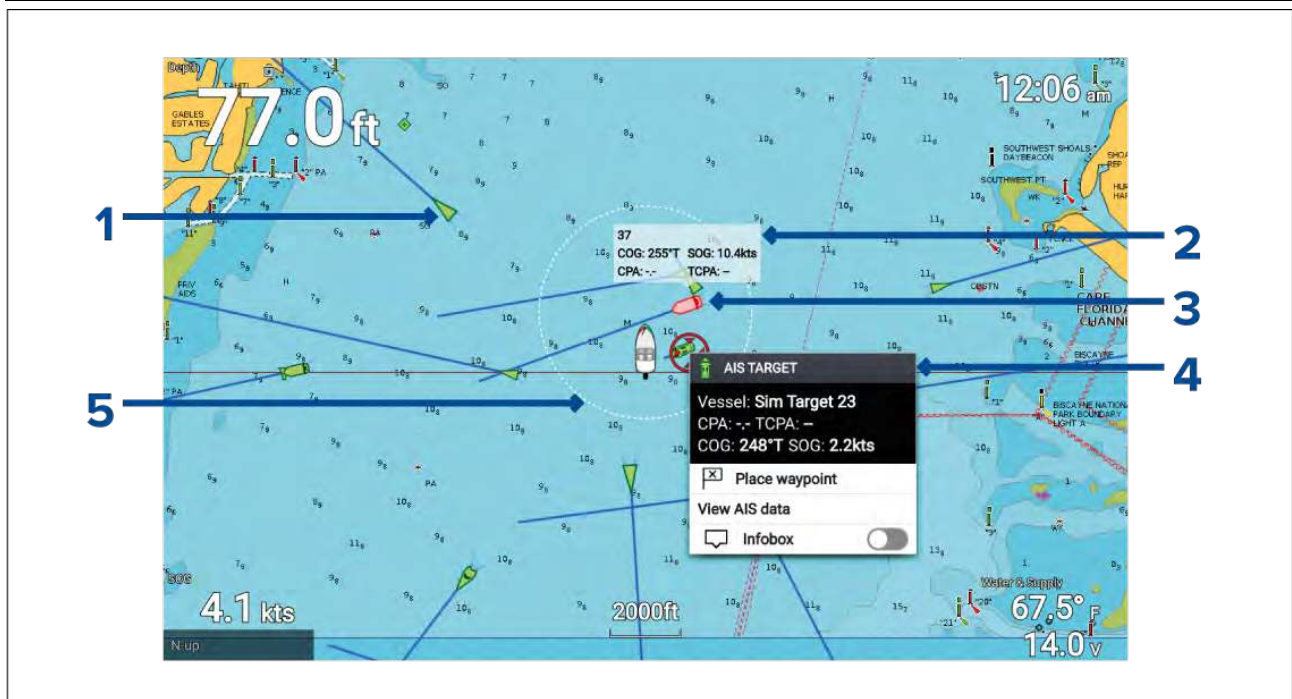
7.2 Automatic Identification System (AIS) support

With compatible AIS hardware connected to your display, AIS targets can be tracked.

AIS equipped vessels that are transmitting their position, and are within range of your vessel, can be represented in the Chart app using AIS target icons.

Note:

A maximum of 100 AIS targets can be tracked simultaneously. If there are more than 100 AIS targets within range of your vessel the closest 100 targets will be displayed.



1. **AIS target icon** — Example of an AIS target icon.
2. **AIS Infobox** — Information can be displayed for each target individually.
3. **Dangerous AIS target icon** — Example of an AIS target icon that is dangerous.
4. **AIS context menu** — The AIS context menu is displayed when an AIS target is selected.
5. **Safe distance ring** — A ring can be displayed which represents the dangerous target **Safe distance**.

AIS target context menu

The AIS target context menu provides context sensitive data and menu options related to AIS targets.

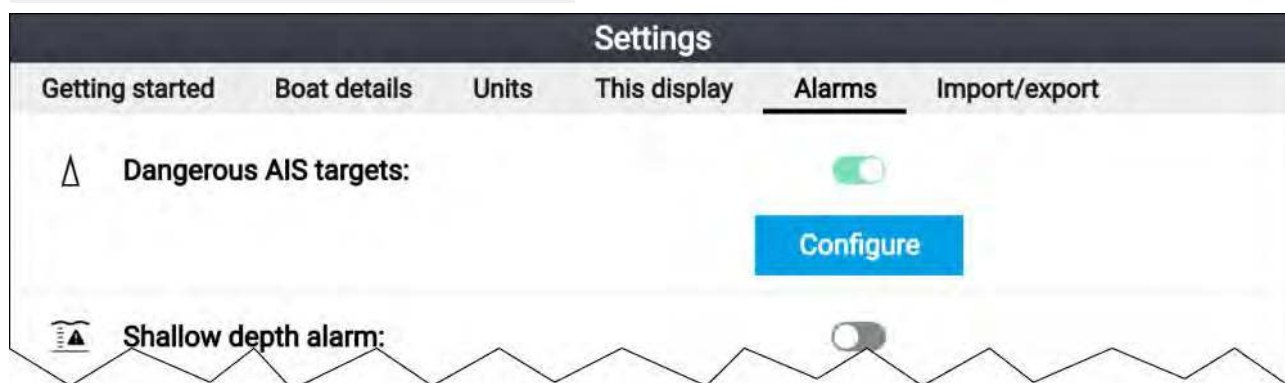


- The AIS target context menu is accessed by highlighting an AIS target onscreen and pressing the **OK** button.
- The context menu provides vessel name or MMSI CPA and TCPA, if available, COG and SOG data.
- The following menu options are available:
 - **Place waypoint** (places a waypoint at the cursor's location)
 - **View AIS data** (displays more detailed AIS data on a fullscreen page)
 - **Infobox** (displays the AIS data that is shown in the context AIS target context menu onscreen, next to the AIS target)

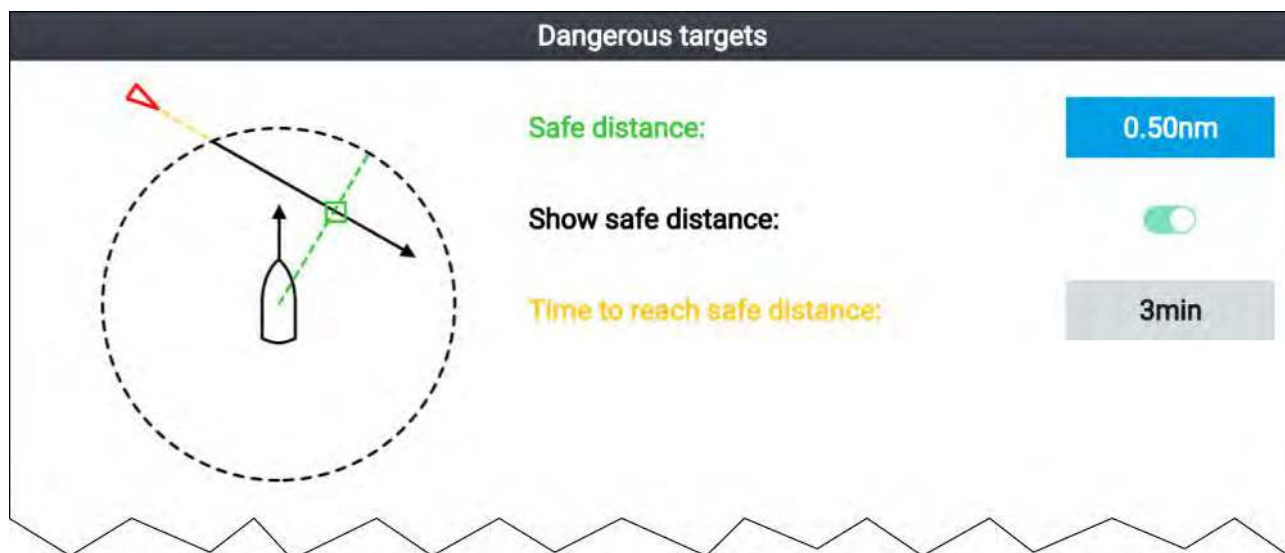
AIS dangerous targets

If AIS targets enter a dangerous target state they can trigger an alarm on your display. AIS targets are considered to be dangerous if they will pass within a specified safe distance from your vessel within a specified time interval.

The dangerous target alarm can be enabled and disabled from the alarms menu: **Homescreen > Settings > Alarms > Dangerous AIS targets** .



The dangerous target alarm can be configured from the Dangerous target page, accessed from the alarms menu: **Homescreen > Settings > Alarms > Dangerous AIS targets > Configure**.



To set up the AIS dangerous target alarm, first adjust the **Safe distance** to the desired value and then select a **Time to reach safe distance**. The alarm will be triggered if a tracked target will reach the specified Safe distance from your vessel within the time period selected.

You can display a Safe distance ring around your vessel in the Chart app and Radar app by enabling **Show safe distance**.

AIS vectors

Vectors can be displayed for AIS targets.

AIS target vectors settings can be accessed from the **Target Settings** tab: **Menu > AIS Targets > Target Settings**.

The length of the vector indicates the predicted position of the target after the time interval specified in **Vectors period** has passed. Adjusting the **Vectors period** option will adjust the length of the vector.

AIS vectors can be enabled and disabled using the **AIS vectors** toggle switch.

Target vectors can be enabled and disabled for individual targets: Press and hold on an AIS target to display the context menu, and then select **Vector**.

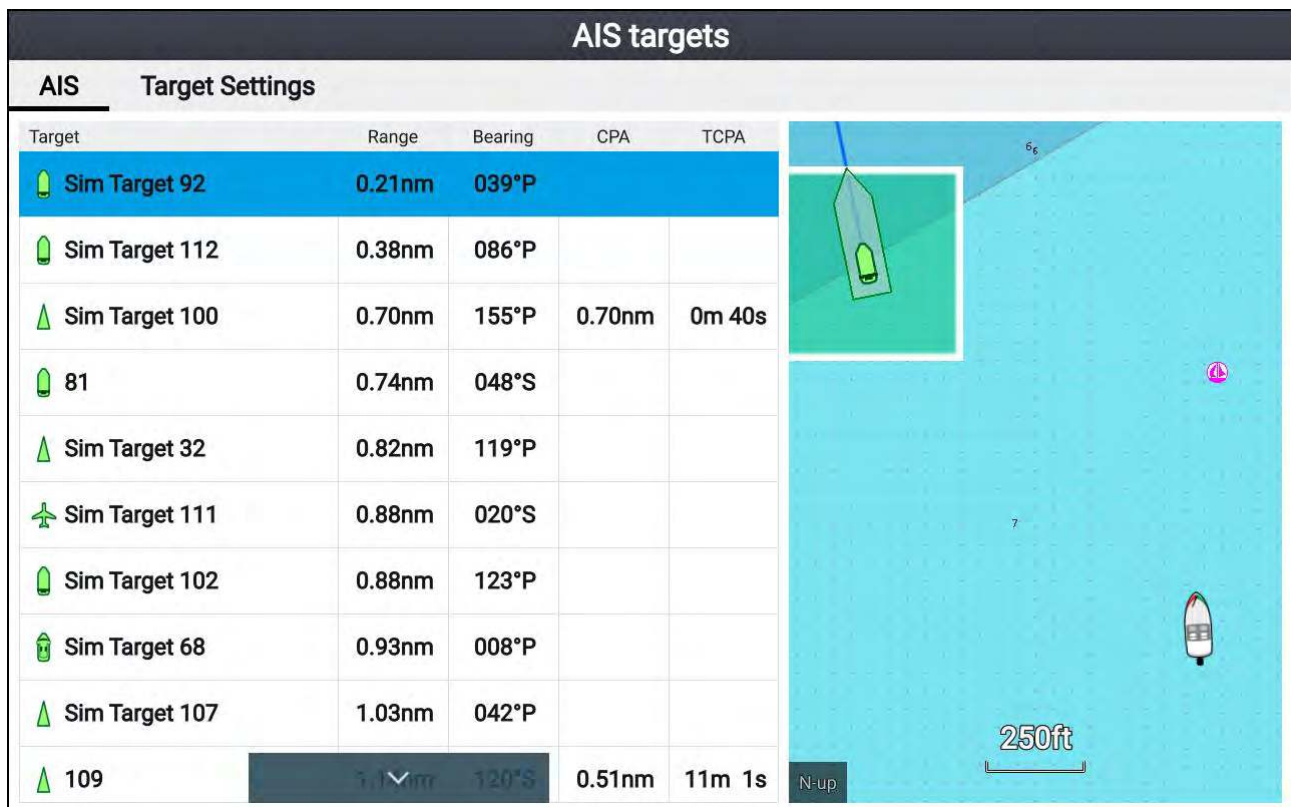
The vectors can be set to **True** or **Relative**.

	True vectors In true mode the vectors are shown ground referenced (i.e.: their actual path over ground).
	Relative vectors In relative mode the vectors are shown relative to your vessel's position.

AIS targets list

Tracked AIS targets are listed in the AIS targets list.

The AIS targets list can be accessed from the Chart app menu: **Menu > AIS Targets**.



When an AIS target is highlighted the LiveView pane will pan and zoom to show the AIS target.
When an AIS target is selected the AIS target details page is displayed.

AIS Settings

Settings related to AIS can be accessed from the Target Settings menu: **Menu > AIS Targets > Target Settings**.

AIS:	Enables and disables display of AIS targets in the Chart app. Note: When disabled AIS targets and details are still available in the AIS targets list.
Silent mode (don't transmit my position):	Your AIS hardware will not transmit any data when in silent mode. In Silent mode AIS data can still be received from other vessels.
Hide static targets:	Targets travelling under 2 knots will be hidden, unless the target is dangerous or becomes dangerous.
AIS vectors:	Enables and disables display of vectors on AIS targets.
Vectors period:	Determines the predicted position of the target (and therefore the length of the vector). Note: The Vectors period settings also applies to your vessel's COG vector.
Reference mode:	Determines whether vectors are shown in true or relative mode.

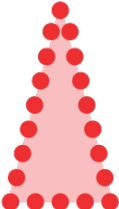
AIS target symbols

Different symbols are used to identify type of AIS target and their status.

AIS symbols

	Sailing Vessel		Commercial
	High speed vessel / Wing In Ground vessel		Cargo vessel
	Passenger vessel		Other
	Land based station		ATON
	SAR (Search and Rescue)		Virtual ATON
	SART (Search and Rescue Transponder)		

AIS target symbol status

	Lost (No border, crossed through)		Uncertain (Dashed outline)
	Dangerous and Uncertain (Dashed outline and Flashes Red)		
	Dangerous (Flashes Red)		ATON off position (Red border)

7.3 Navigation

Autopilot command

Element™ displays can send navigation data to a connected Evolution™ autopilot systems..

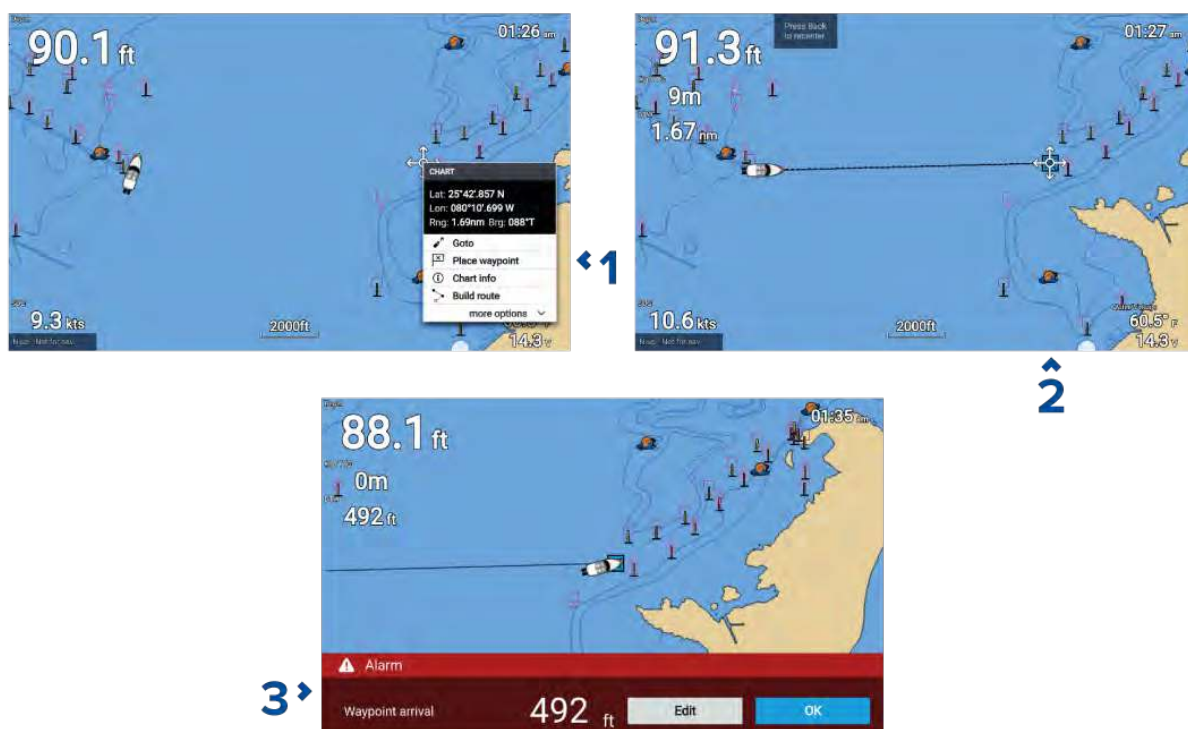
Note:

- Your autopilot system must have a compatible dedicated autopilot controller connected. For a list of compatible autopilot controllers refer to: [p.165 — Compatible autopilot controllers](#)
- For information on Evolution™ autopilot systems and required system components refer to the Evolution installation instructions document number: 87180 which is available to download from the Raymarine website: www.raymarine.com

Goto, **Follow** and **Stop** commands initiated on the Element™ display are sent to the autopilot controller for acknowledgement.

Navigating to a waypoint or point of interest

You can perform a “Goto” to a Waypoint or to a specific location.



1. Select the waypoint or point of interest and select **Goto** from the context menu.

*You can stop the **Goto** at any time by selecting **Stop** from the context menu, or by selecting another **Goto**.*

The Chart app will begin active navigation.

2. Navigate your vessel to the destination point, using the Chart app as a guide.
3. Select **OK** to accept the waypoint arrival alarm, which is triggered when you reach a specified distance from the waypoint.

You can also perform a Goto from the **Go** menu: **Menu > Go**.

Note:

In a network that contains 2 Element™ displays, with one display performing active navigation (i.e.: performing a **Goto** or a **Follow**) navigation options will not be available on the networked display.

Adjusting the waypoint arrival alarm

The waypoint arrival alarm is enabled by default. The waypoint arrival alarm creates a virtual circle, of the specified radius, around the destination point. When your vessel reaches the virtual circle the alarm is triggered.

From the homescreen:

1. Select **Settings**.
2. Select the **Alarms** tab.
3. Select the **Arrival radius:** setting field.
4. Adjust the distance to the desired value.
5. Press the **Back** button to return to the alarms menu.

Note:

The waypoint arrival alarm can be disabled or enabled using the **Waypoint arrival:** toggle switch.

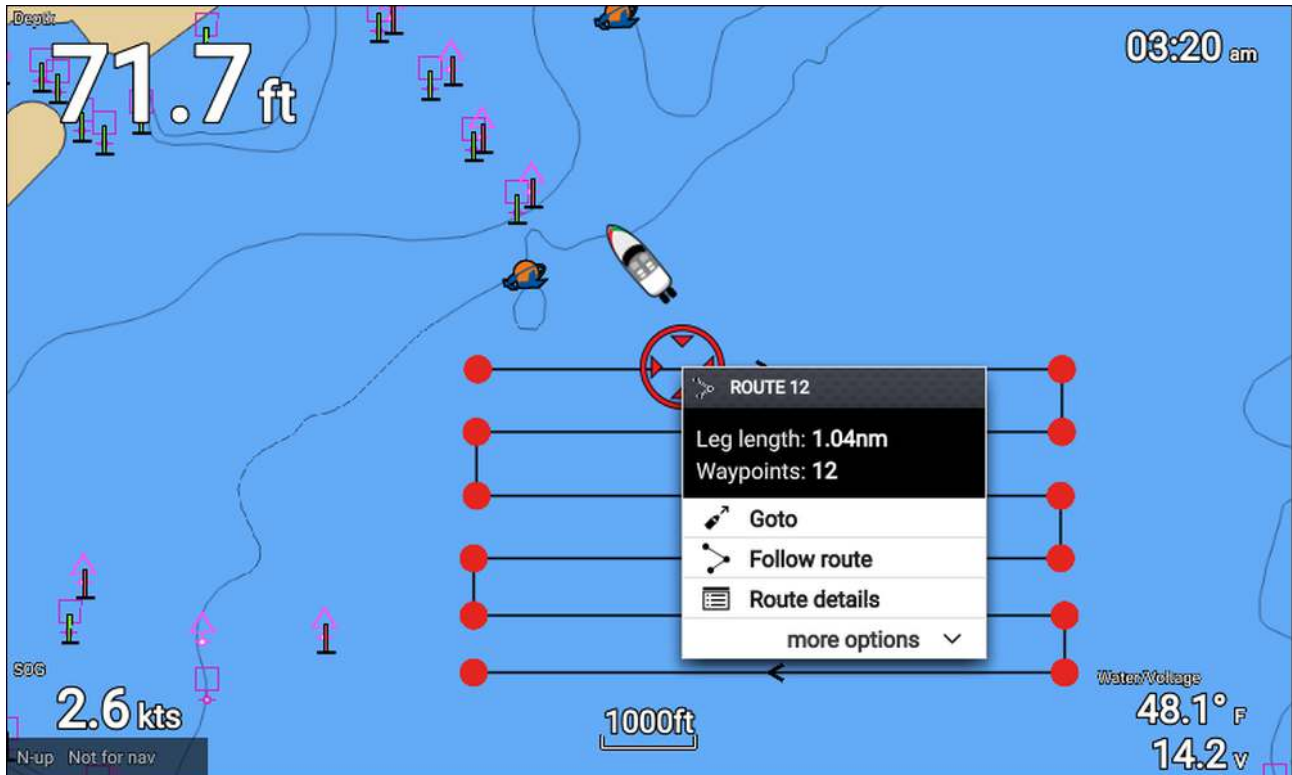
Restarting cross track error (XTE)

A cross track error (XTE) occurs when your actual route diverges from your original planned route. Restarting XTE plots a new course directly from your current position to your destination, rather than continuing to follow the original planned route.

1. Select **Restart XTE** from the **Navigation** menu: **Menu > Navigation > Restart XTE**.

Following a Route

Follow the steps below to navigate a saved route.



From the Chart app, with the route displayed onscreen:

1. Select a route leg.
The route context menu is displayed.
2. Select **Follow route** to follow the route from start to finish.

Alternatively you can select Follow route from the route pop-over menu, accessed from the Routes menu. **Menu > Routes & Tracks > Routes > <Route name> > Follow.**

For more information on routes and route management refer to: [6.2 Routes](#)

Following a route from a specified waypoint

You can start following a route from any waypoint in that route.

From the Chart app, with the route displayed onscreen:

1. Select the waypoint that you want to start following your route from.
The route context menu is displayed.
2. Select **more options**
3. Select **Follow from here.**

Creating a track

You can record your vessel's voyage using Tracks. Once a Track is saved it can be converted to a route so that the same passage may be followed again at a later date.



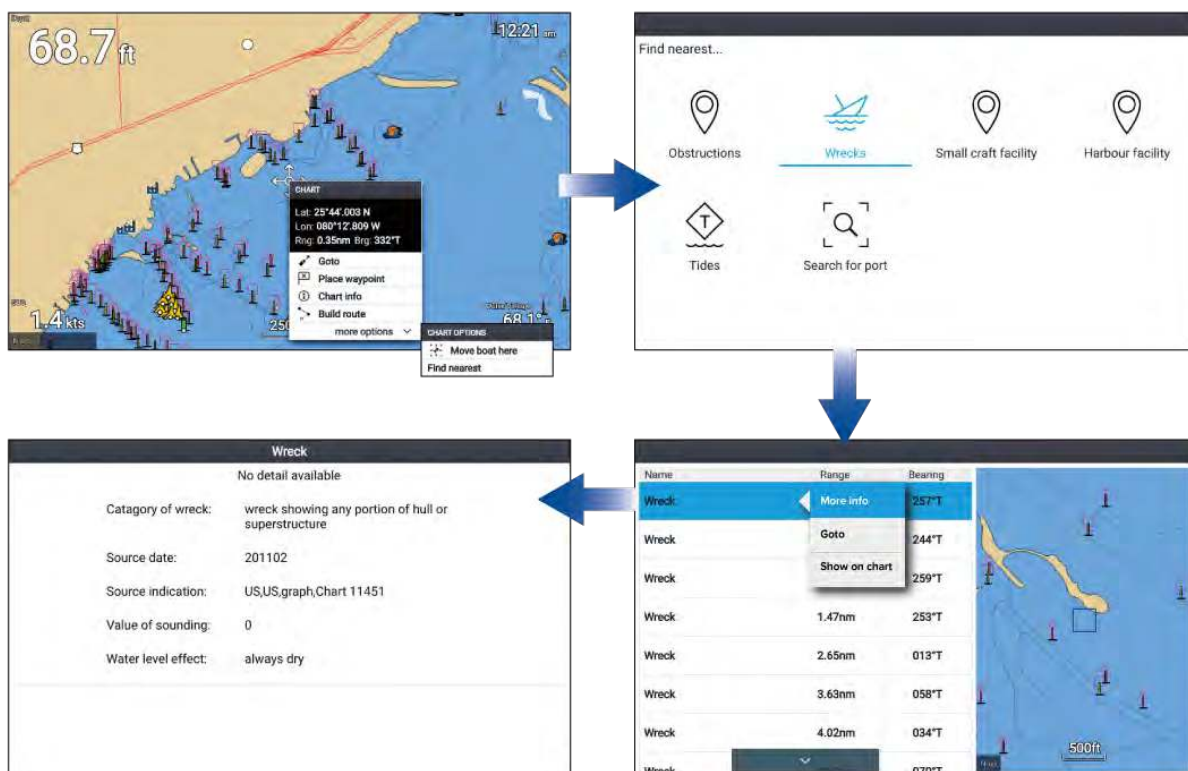
With the Chart app displayed:

1. If required, press the **Back** button to enter motion mode.
2. Press the **OK** button.
The boat details pop-over menu is displayed.
3. Select **Start track**.
Your vessel's voyage will now be recorded.
4. When your voyage is complete, select **Stop track** from the boat details pop-over menu.

You can also start a new track recording at anytime from the Routes & Tracks menu: accessible from the homescreen: **Homescreen > Route & Tracks** and from the Chart app menu: **Menu > Routes & Tracks**.

7.4 Find nearest

The Find nearest feature allows you to select a location and search for nearby objects or points of interest.



The objects available depend on the cartography you are using:

Object	Cartography
Obstructions	• LightHouse™ charts • Navionics® • C-MAP®
Wrecks	• LightHouse™ charts • Navionics® • C-MAP®
Small Craft Facility	• LightHouse™ charts
Harbor Facility	• LightHouse™ charts
Tide Station	• LightHouse™ charts • Navionics® • C-MAP®
Current Station	• LightHouse™ charts • Navionics® • C-MAP®
Port (Search by name)	• LightHouse™ charts • Navionics® • C-MAP®
Marinas	• Navionics® • C-MAP®
Lakes	• Navionics® • C-MAP®
Businesses	• Navionics®

Object	Cartography
Point of Interest	• C-MAP®
Outdoor Recreational Areas (ORA)	• C-MAP®
ORA Services	• C-MAP®
Port Services	• Navionics® • C-MAP®

Search using find nearest

To search for nearby objects, follow the steps below.

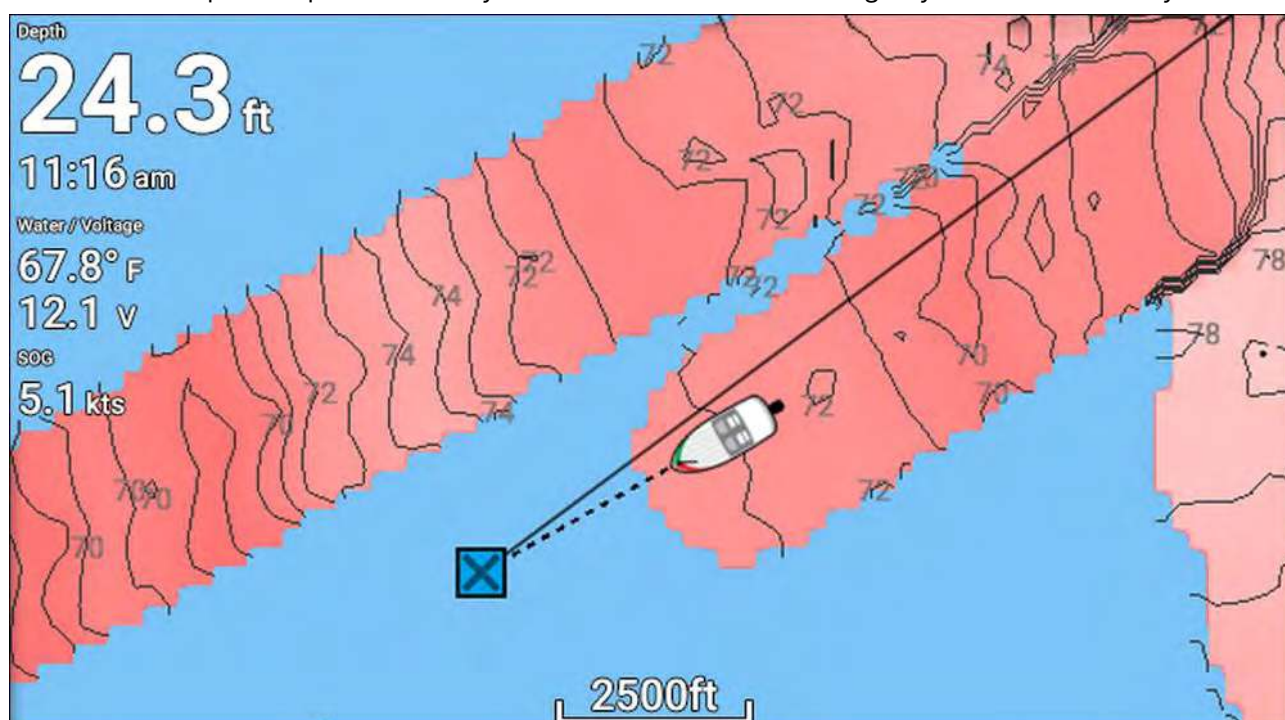
Note:

The list is sorted by an object's proximity to the selected location. However, the Range and Bearing displayed is relative to your vessel's position.

1. Select a location near where you want to search.
The chart context menu is displayed.
2. Select **more options**.
3. Select **Find nearest**.
4. Select the required object type.
5. If required, select a sub-category or when searching for a port, use the onscreen keyboard to enter a port name and select **Search**.
6. A list of nearby objects is displayed.
7. Select an object from the list.
The Pop-over menu is displayed and the **LiveView** on the right of the screen will highlight and zoom to the selected object.
8. From the Pop-over menu you can:
 - i. View more information about the object by selecting **More info**.
 - ii. Navigate to the selected object by selecting **Goto**.
 - iii. Display the selected object in the Chart app by selecting **Show on chart**.

7.5 RealBathy™

You can create precise personal bathymetric charts in real time using Raymarine's RealBathy™ feature.



Note:

RealBathy™ requires compatible LightHouse™ NC2 charts and a MicroSD card with sufficient free space to record depth and bathymetry data.

When using RealBathy™, new contour lines are drawn in real time on the screen based on your transducer's depth readings. Color shading is used to reflect depth, with darkest shade signifying the shallowest area. The sonar data is recorded to the inserted memory card.

Setting up and creating RealBathy contours

To enable creation of RealBathy™ bathymetric contours in real time follow the steps below:

Important:

- You will need to know the distance above the bottom face of your transducer to the waterline.
- For tidal environments LightHouse™ NC2 cartography is required that includes tide station information for your location.

From the Chart app.

1. Insert your LightHouse™ NC2 chart card into the display's card reader.
2. Select your LightHouse™ chart card as your cartography for the Chart app.

For details on choosing your cartography refer to: [Selecting a chart card](#)

3. Enter the distance above the bottom face of your transducer to the waterline in the **Waterline to tdc:** setting field.
4. Enable the **RealBathy**; toggle switch, located in the **Depths** menu: **Menu > Depths**
5. Select the relevant **Height correction** option:
 - **None** — No corrections are made.
 - **Tidal** — Uses nearby tide station data to correct height. When **Tidal** is selected a tidal station search is performed and a list of available stations is displayed. Select the closest tide station to your location.
 - **Lake level** — User specified value using the water level marker for your location.

Note:

To ensure accurate contour depths it is recommended that:

- in tidal environments (e.g.: seas and oceans) you use LightHouse™ NC2 cartography that includes tide station information and select the tide station closest to your location, or
- in fresh water environments (e.g.: lakes) select **Lake level** in the **Height correction:** field and then enter the current reading from the water level marker for your location into the field located under the height correction option.

6. Adjust the **Visibility:** setting to the desired transparency.

100% provides full visibility of the RealBathy contours, as the percentage decreases the chart detail behind the RealBathy contours becomes more visible.

7. Select the required **Density:** setting.

Steep drop-offs can result in overlapping contour lines, lowering the density in these situations provides a clearer view.

7.6 Tides mode

Tides mode suppresses chart detail to enhance tide and / or current information and provides set and drift vectors for your vessel. Tide mode also displays an animation progress bar. Depending on the cartography in use, tide and / or current station symbols may be replaced with dynamic graphics. Dynamic graphics can be animated using the **Animate tides** option which enables playback of tide and / or current predictions for a 24 hour period.

Note:

- Set and drift vectors require a paddle wheel transducer.
- Animations are only available on supported cartography. Refer to your cartography provider for more information.
- Tides mode requires accurate date information, taken from your GNSS / GPS position data. Alternatively, you can input a specific date manually.



1. Animation progress bar — The bar fills with Blue as the animation progresses for the current 24 hour period, or Green when playing animations from a different period.
2. Playback controls — Provides controls to play and stop animation playback or skip forwards or backwards through the animation.
3. Dynamic tide graphic — Available when using Navionics cartography.
4. Drift value — Provides drift value in specified speed units.
5. Set vector — Vector arrow identifies tide direction
6. Dynamic current graphic — Available when using Navionics cartography.

Note:

The data provided in the tide and current graphs and graphics is for information purposes only and must NOT be relied upon as a substitute for prudent navigation. Only official government charts and notices to mariners contain all the information needed for safe navigation.

Using animation controls

The animation controls can be selected using the **Directional pad** and **OK** button.

With cartography containing tide data selected in the Chart app:

1. Select the **TIDES** mode icon from the menu.
2. Select **Animate tides** from the menu.
3. Use the **OK** button to start and stop playback.
4. Use the **Left** button to skip forwards through the animation.
5. Use the **Right** button to skip forwards through the animation.

Note:

Pressing and releasing the **Left** or **Right** buttons will skip the animation in 15 minute intervals. Pressing and holding the **Left** or **Right** buttons will continue to skip the animation until the button is released.

Selecting a date for tide animations

You can select a specific date for tide and current animations.

1. Select **Select date** from the menu.
2. Use the **Left** and **Right** buttons to select the month, day or year.
3. Use the **Up** and **Down** buttons to highlight the **Up** or **Down** arrows
4. Use the **OK** button to change the highlighted value.
5. Select **Save**.

Tide station information

Depending on your cartography, Tide station information may be available.

Tide station symbol

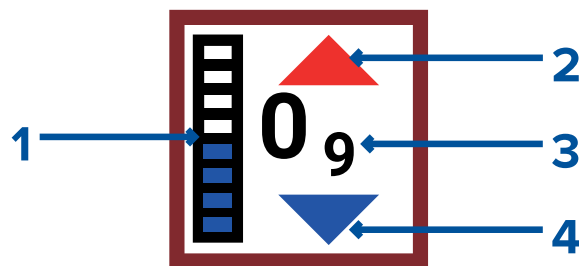


The location of Tide stations is marked on the chart using a diamond-shaped symbol with a 'T' in the middle.

- The symbol is colored Red when using Navionics cartography.
- The symbol is colored Black when using LightHouse Charts or C-Map cartography.

Dynamic tide graphic

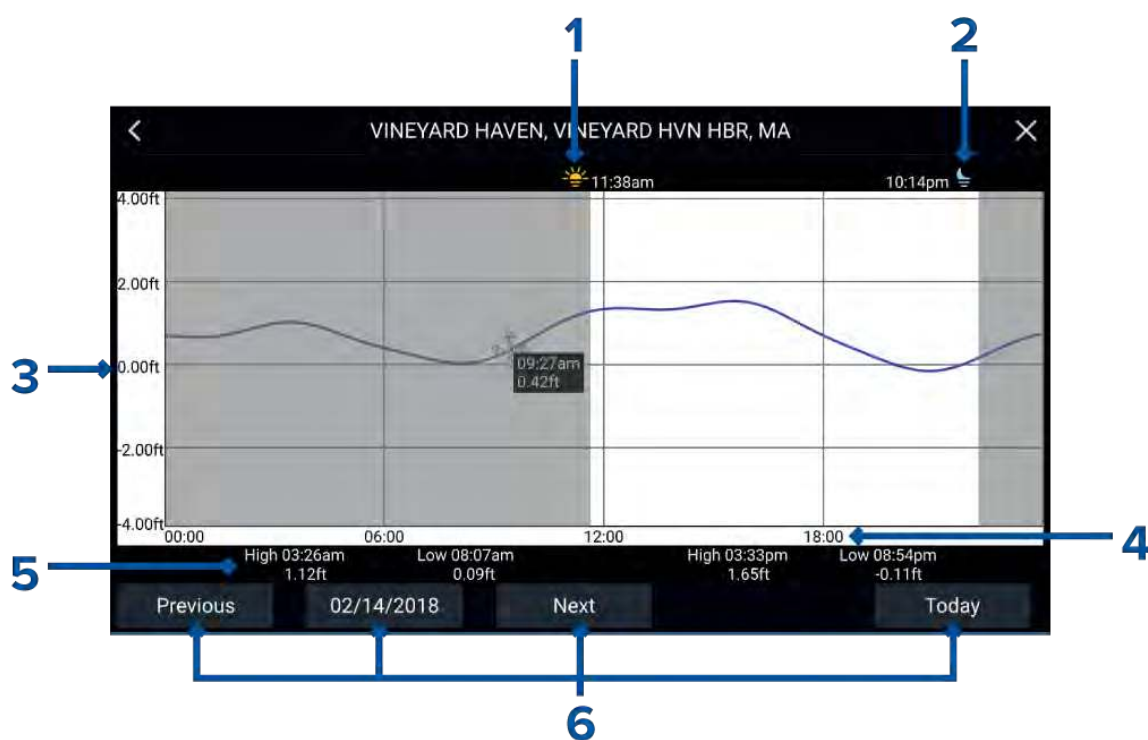
Using Navionics cartography, when the Tides is enabled (**Menu > Settings > Set-up > Tides**) the tide symbol is replaced with a dynamic tide height graphic:



1. Tide bar — The tide bar plots the current tide height against the maximum predicted tide height for that day.
2. Red arrow indicates tide height is increasing.
3. Tide height — Tide height is displayed in user-selected depth units, with decimals displayed in subscript. Decimals are not shown for values of 10 or greater.
4. Blue arrow indicates tide height is decreasing.

Tide graph

Tide graphs are available with compatible cartography by selecting **more options** and then **Tide station** from the tide station's context menu.



1. **Sunrise** — Indicates time of sunrise.
2. **Sunset** — Indicates time of sunset.
3. **Height** — Provides tide height in selected units.
4. **Time** — Indicates time of day.
5. **Low / High tide** — Indicates the time of low and high tides.
6. **Time and date options** — Use the buttons to view previous, next or today's tide predictions, or enter a date by selecting the date field.

Current station information

Depending on your cartography, Current station information may be available.

Current station symbol



Current station locations are marked on the chart using a diamond-shaped symbol with a 'C' in the middle.

- The symbol is colored Blue when using applicable Navionics cartography.
- The symbol is colored Black when using applicable C-Map cartography.

Dynamic current graphic

Using Navionics cartography, when the Tides option is enabled (**Menu > Settings > Set-up > Tides**), the current station symbol is replaced with a dynamic current graphic:



The dynamic current graphic is an arrow pointing in the direction of current flow. Arrow length indicates the speed of the current; the longer the arrow, the faster the speed.

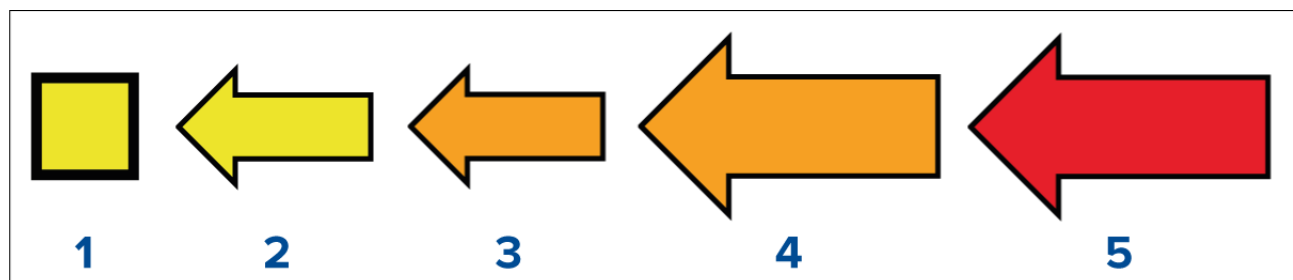
The arrow's border indicates current status:

- Red = increasing current speed.
- Blue = decreasing current speed.

Current speed is shown inside the arrow. Current speed is displayed in user-selected speed units, with decimals displayed in subscript. Decimals are not shown for values of 10 or greater.

If tidal conditions are "slack", the word "SLACK" appears in a box with a Blue border.

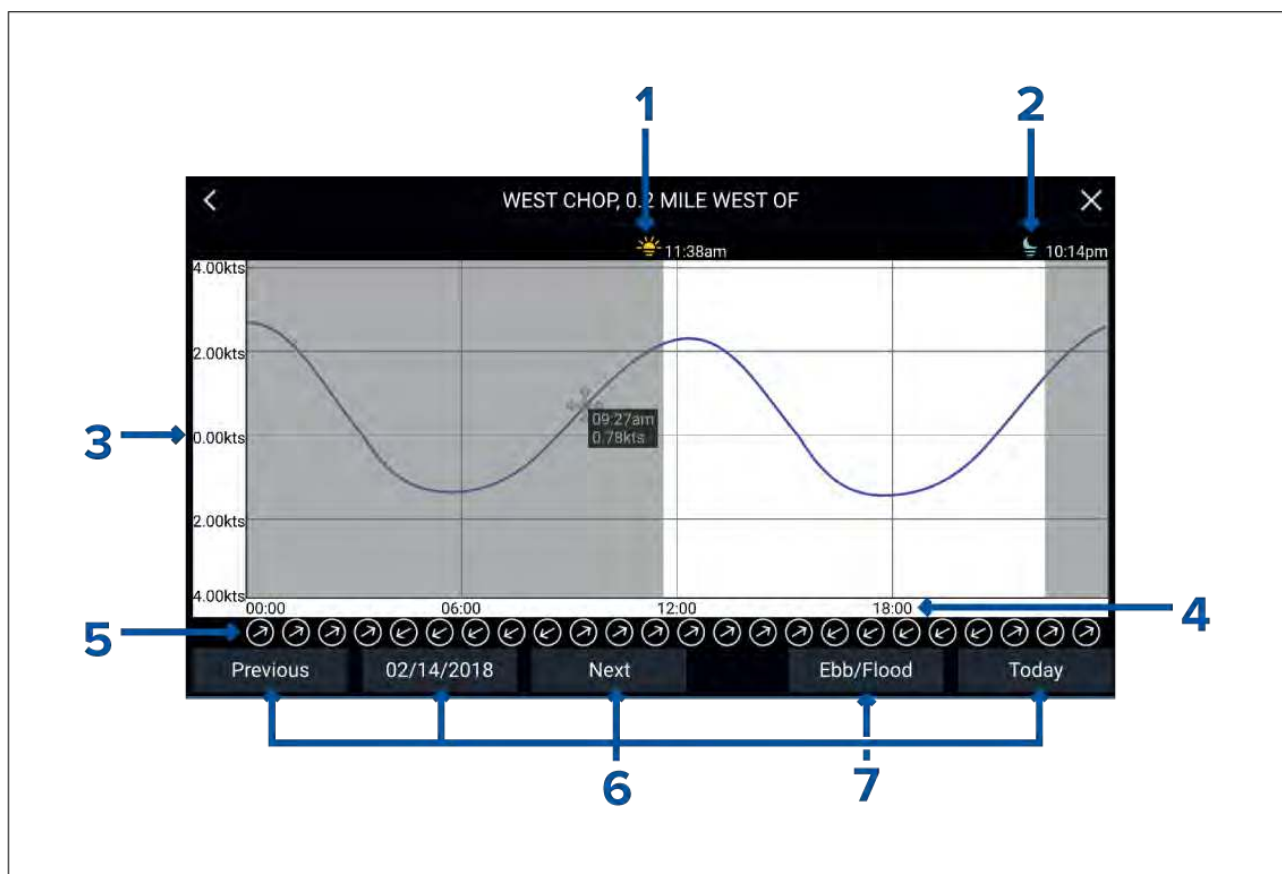
When using C-Map cartography, arrows are used to indicate the direction of current flow. The size and color of the arrow indicates the strength of the current:



	Color	Speed
1	Yellow	0 to 0.1 Knots
2	Yellow	0.2 to 1.0 Knots
3	Orange	1.1 to 2.0 Knots
4	Orange	2.1 to 3.0 Knots
5	Red	>3.0 Knots

Current graph

Current graphs are available by selecting **more options** and then **Current station** from the current station's context menu.



1. **Sunrise** — Indicates time of sunrise.
2. **Sunset** — Indicates time of sunset.
3. **Speed** — Provides current speed in selected units.
4. **Time** — Indicates time of day.
5. **Direction** — Indicates the direction of the current (relative to North).
6. **Time and date options** — Use the buttons to view previous, next or today's tide predictions, or enter a date by selecting the date field.
7. **Ebb / Flood** — Displays a list showing ebb, slack and flood tides.

Displaying tide or current graphs

1. Select a tide or current station symbol or dynamic graphic.
2. Select **more options** from the context menu.
3. Select **Tide station** or **Current station**

Note:

You can also access tide and current graphs by selecting **More info** from the pop-over options when performing a **Find nearest** search for tides.

7.7 Chart settings menu

The table below lists settings applicable to the Chart app and their location within the app's **Settings** menu. Available settings are dependent on the cartography in use. If a setting is not displayed then the feature is not compatible with your cartography. If a feature is grayed out then it requires a subscription to activate the feature.

Cartography tab

Description	Options
Allows you to select the cartography that you want to use in the current Chart app.	• LightHouse Charts • Navionics • C-MAP

Set-up tab

Menu item and description	Options
Chart detail: Allows you to select the level of detail displayed onscreen for vector based cartography. This setting is always available and not dependent on the cartography in use.	• Low • Medium • High
Chart motion: Chart motion controls how the chart and boat are drawn in relation to each other. This setting is always available and not dependent on the cartography in use.	• Relative motion • True motion • Auto range
Chart orientation: The orientation of the chart affects the alignment of the chart relative to either your vessel heading, your course or North. This setting is always available and not dependent on the cartography in use.	• North-up • Head-up • Course-up
Boat type: The icon used to represent your vessel can be customized to better reflect your vessel. This setting is always available and not dependent on the cartography in use.	• Inboard Speed Boat • Outboard Speed Boat • Power Cruiser • Pro Fishing Boat • RIB • Sail Cruiser • Race Sail • Catamaran • Kayak • Pontoon
Icon type: The type of icon used to represent your vessel can be customized. This setting is always available and not dependent on the cartography in use.	• Icon (large) • Icon (small) • Outline • Teardrop
Boat position Adjust the boat position to allow more or less 'look ahead' space in front of your boat. This setting is always available and not dependent on the cartography in use.	• Center • Partial offset • Full offset
Auto enter RUNNING mode: When enabled the Chart app will automatically switch to running mode when vessel speed exceeds 10 knots, the Chart app will automatically switch to the previously used mode when vessel speed drops below 10 knots. This setting is always available and not dependent on the cartography in use.	• On • Off
Aerial Enables and disables display of a photographic aerial overlay. This setting is available when using C-MAP® or Navionics® cartography.	• On • Off
Coverage: Determines where the aerial overlay will be used. This setting is available when using Navionics® cartography.	• Land only • Land and sea • Land and shallow

Menu item and description	Options
Tides Enables and disables display of Tide and Current graphics at tide and current stations. This setting is available when using Navionics® cartography.	• On • Off
Community edits Enables and disables display of crowd sourced data. This setting is available when using Navionics® cartography.	• On • Off
High res bathy Enables and disables display of High Resolution Bathymetry charts which provides improved bottom detail, contours and structure. This setting is available when using C-MAP® cartography.	• On • Off
Sports fishing Allows you to display easy-to-use information pages about fishing locations including fish type, size, depth and reef and bottom composition. This setting is available when using C-MAP® cartography.	• On • Off
Navigation mark symbols: Determines whether International or US navigation mark symbols are used. This setting is always available and not dependent on the cartography in use.	• US • International

Depths tab

Menu item and description	Options
Shallow area: Enables and disables identification of areas deemed to be shallow. When enabled, a red hatched area is displayed in areas shallower than the depth specified in the Zero to field. This setting is available when using Navionics® cartography.	• On • Off
Zero to: Specifies the depth used for the shallow area setting. This setting is available when using Navionics® cartography.	0 ft to 60 ft (or equivalent units)
Deep contour: Determines the depth at which the deep water color applies. This setting is always available and not dependent on the cartography in use.	Numeric depth value.
Deep water color Allows you to specify the color used to identify deep water. This setting is always available and not dependent on the cartography in use.	• White • Blue
Record depth data Enables depth and position data to be recorded to memory card This setting is available when using LightHouse™ charts.	• On • Off
SD card: When a suitable MicroSD card has been inserted the free space available for recording depth data and RealBathy is displayed. This setting is available when using LightHouse™ charts.	N/A
Waterline to tdc: Enter the distance between the waterline and your depth transducer. This setting is available when using LightHouse™ charts.	0 ft to 9.9 ft

Menu item and description	Options
RealBathy: Displays previously recorded RealBathy™ data saved on memory card on the chart. This setting is available when using LightHouse™ charts.	• On • Off
Visibility: Determines the transparency of the RealBathy data and SonarChart live data displayed onscreen. This setting is available when using LightHouse™ charts or Navionics® cartography.	• 0% to 100%
Height correction: Determines the level of height correction applied to RealBathy and depth data. This setting is available when using LightHouse™ charts.	• None • Tidal • Lake level
Safety depth shading: Determines the depth at which the Safety contour is displayed. This setting is available when using LightHouse™ vector charts.	Numeric value
Density Selects the density of available depth contours. This setting is available when using LightHouse™ charts or Navionics® cartography. Note: The 'Very high' option is only available when using Navionics cartography.	• Low • Medium • High • Very high
Sonar logging Allows logging of depth and position data to your Navionics chart card. This setting is available when using Navionics® cartography.	• On • Off
SonarChart Live Enables and disables Navionics SonarChart Live feature which enables real time creation and display of high resolution bathymetry charts. This setting is available when using Navionics® cartography.	• On • Off
Tide correction Enables Sonar logging depth measurements to be offset by tide height data from nearby tide stations. This setting is available when using Navionics® cartography.	• On • Off
Fishing Zone: You can set up a Fishing zone by enabling Fishing zone and specifying a minimum depth and maximum depth. Areas on the chart that are between these depths will be colored White, areas outside of these depths will be colored Blue. This setting is available when using Navionics® cartography.	• On • Off
2D shading Enables and disables 2D shading. This setting is available when using Navionics® cartography.	• On • Off

Databoxes tab

Settings	Description
1:	Determines the data item displayed in databox 1.
2:	Determines the data item displayed in databox 2.
3:	Determines the data item displayed in databox 3.

Settings	Description
4:	Determines the data item displayed in databox 4.
Reset all	Selecting will reset all databoxes to factory defaults.

7.8 SonarChart™ Live

You can create personal bathymetry charts using your depth transducer and the SonarChart™ Live feature, available with compatible Navionics® electronic cartography cards.

Note: Before using SonarChart™ Live ensure you have correctly configured your transducer depth settings.

When using SonarChart™ Live, new contour lines are drawn in real time on the screen based on your transducer's depth readings. Color shading is used to reflect depth, with dark red signifying the shallowest area. The sonar data is recorded to your cartography card and is shared with Navionics when you update your chart card online.

Tide correction

SonarChart™ Live records the actual readings from your depth transducer under current tide / water level conditions. You can enable automatic adjustment of depth readings based on normalized low tide / low water level depth data taken from a nearby Tide station.

Enabling SonarChart Live

To enable creation of real time SonarChart™ Live bathymetry lines:

With your transducer depth settings correctly configured and compatible cartography selected:

1. Select the **Depth** tab from the Chart app settings menu: **Chart app > Menu > Settings > Depth**.
2. Enable **Sonar logging**.
3. Enable **SonarChart Live**.
4. Select the **Visibility** setting field, and adjust to your preferred value.
5. If required, enable **Tide correction**.

Chapter 8: Fishfinder app

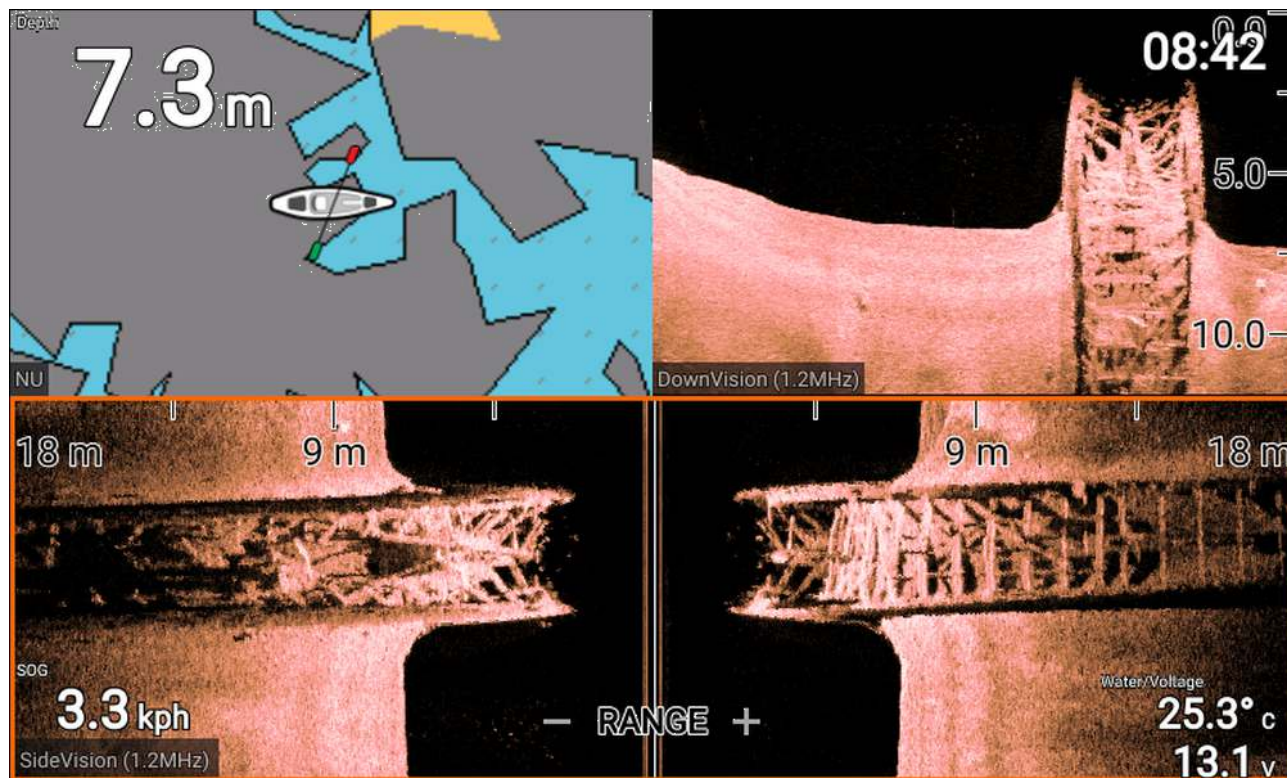
Chapter contents

- [8.1 Fishfinder app overview on page 102](#)
- [8.2 Fishfinder app controls on page 106](#)
- [8.3 Sonar scroll back on page 107](#)
- [8.4 Fishfinder sensitivity controls on page 108](#)
- [8.5 Configuring transducer settings on page 109](#)
- [8.6 Fishfinder settings menu on page 110](#)

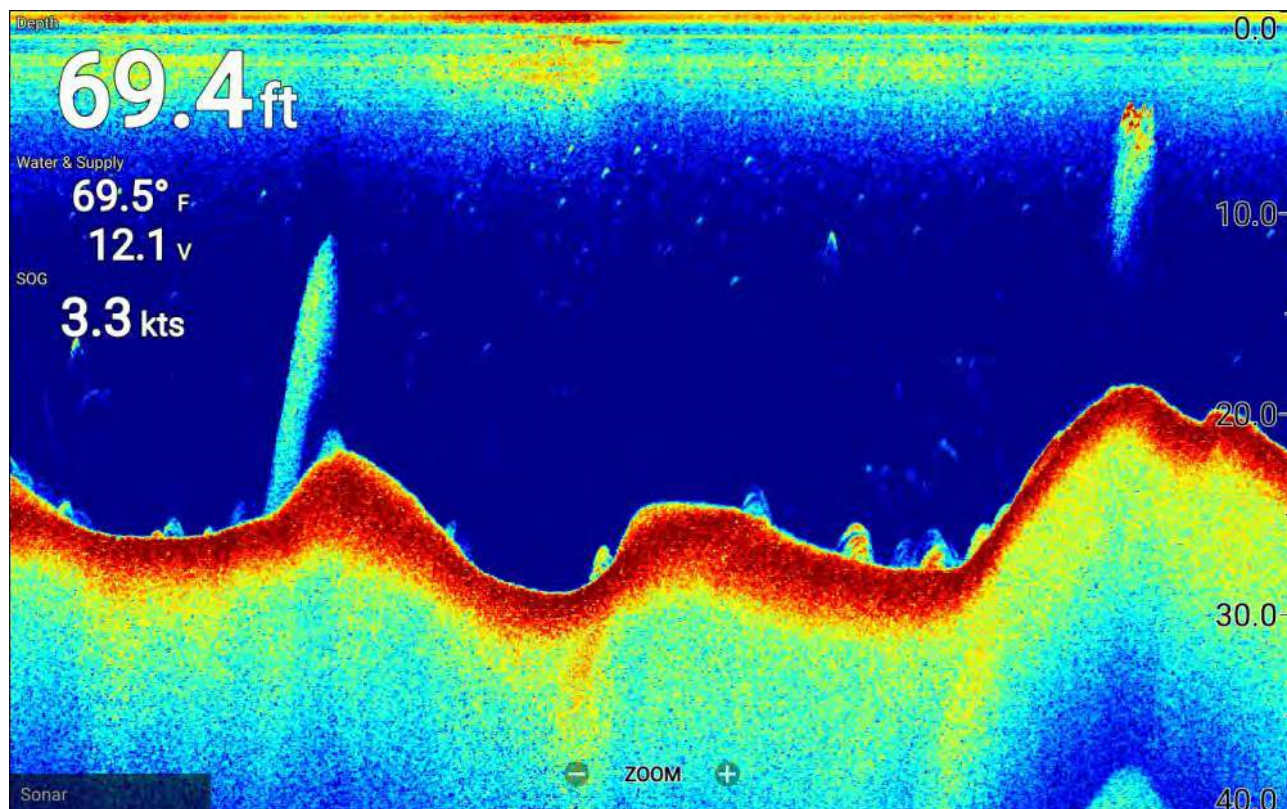
8.1 Fishfinder app overview

The Fishfinder app displays a visualization of the echoes received from the transducer connected to your display and builds an underwater scrolling view of bottom structure and targets that pass under your transducer. Fishfinder channels are available that represent the different sonar technologies that are available depending on your display variant and connected transducer.

Example — Element HV display



Example — Element S display



For each instance of the Fishfinder app that is available on the homescreen you can select which fishfinder channel that you want to use. The channel selection will persist over a power cycle.

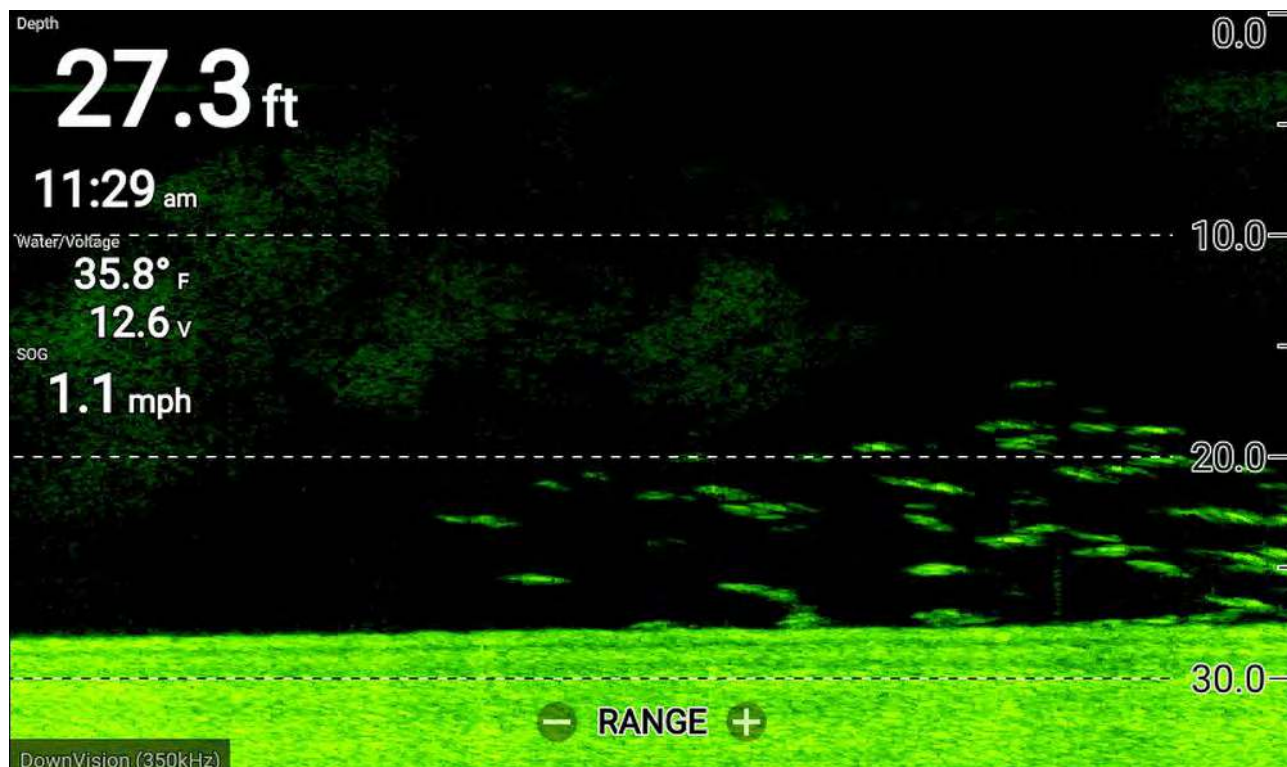
Opening the Fishfinder app

Select an app page icon from the homescreen that includes the Fishfinder app.

Pre-requisites:

1. Ensure your transducer is compatible (check the latest details available on the Raymarine website). If in doubt please contact an authorized Raymarine dealer for advice.
2. Ensure you have installed and connected your transducer in accordance with its supplied documentation.

When opened the Fishfinder app will scroll across the screen, displaying target returns of objects and bottom structure that has passed under your transducer.



If the **'No transducer connected'** warning is displayed then your transducer has not been detected.

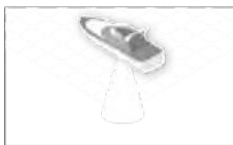
No transducer connected

Connect a transducer and restart the unit.

Check your transducer connection(s) are correct and free from damage, then power cycle your display. If the transducer is still not found then refer to your transducer's installation documentation for further troubleshooting information.

Fishfinder channels — Element™ HV displays

The following fishfinder channels are available on Element™ HV displays, depending on your connected transducer.



RealVision™ 3D channel (350 kHz / 1.2 MHz)

The RealVision™ 3D channel is available when connected to a HyperVision™ transducer.

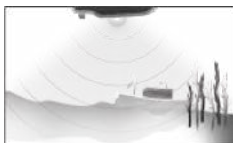
The RealVision™ 3D fishfinder channel provides a scrolling 3D view of the water behind and to the sides of your vessel.



SideVision™ channel (350 kHz / 1.2 MHz)

The SideVision™ channel is available when connected to a HyperVision™ transducer.

The SideVision™ fishfinder channel provides a photo like Scrolling 2D view of the water on each side of your vessel.



DownVision™ channel (350 kHz / 1.2 MHz)

The DownVision™ channel is available when connected to a HyperVision™ or DownVision™ transducer.

The DownVision™ fishfinder channel provides a photo like scrolling 2D view of the water beneath and to the sides of your vessel.



Sonar channel (Conical high CHIRP (200 kHz))

The sonar channel is available when connected to any compatible transducer. The conical beam fishfinder channel provides a traditional scrolling 2D view of the water beneath your vessel.

Switching fishfinder channel frequency

On Element™ HV variant displays DownVision™, SideVision™ and RealVision™ 3D channels are available in both 350 kHz (Standard) and 1.2 MHz (Hyper) frequencies.

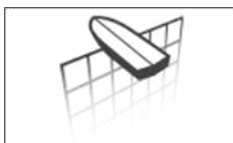
With either DownVision™, SideVision™ or RealVision™ 3D channel displayed:

1. Press the **Menu** button.
2. Select the **Freq:** option.
3. Select either **Standard (350 kHz)** or **HyperVision (1.2 MHz)** as required.

HyperVision™ channels provide higher resolution than standard channels with reduced range.

RealVision™ modes

When the RealVision™ fishfinder channel is selected the RealVision™ fishfinder modes will be available from the main menu.



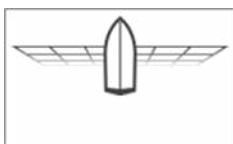
OFFSET PORT

Offset port provides a scrolling, 3D view looking at your vessel from the port side.



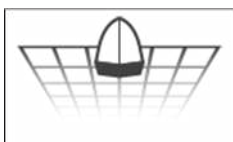
OFFSET STBD

Offset stbd provides a scrolling, 3D view looking at your vessel from the starboard side.



ABOVE

Above provides a scrolling, 3D view looking down at your vessel from above.

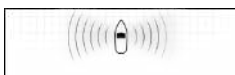


FOLLOW

Follow provides a scrolling, 3D view looking at your vessel from off the stern.

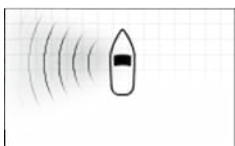
SideVision™ modes

When the SideVision™ fishfinder channel is selected the SideVision™ fishfinder modes will be available from the main menu.



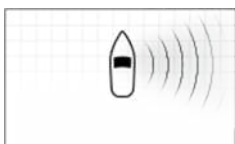
LEFT / RIGHT

Left / right mode is a photo like, scrolling, 2D view of the water on both sides of your vessel.



LEFT

Left mode is a photo like, scrolling, 2D view of the water on the port side of your vessel.



RIGHT

Right mode is a photo like, scrolling, 2D view of the water on the starboard side of your vessel.

Ice fishing modes

When the display is configured for ice fishing (via the Startup wizard), the available fishfinder modes are accessible from the main menu. These modes enable you to select different types of sonar view, optimized for ice fishing activities.



TRAIL / RADIAL

The trail and radial mode is a splitscreen view that includes a traditional (historical), scrolling, 2D view and an instantaneous (real-time) radial view of the water beneath the transducer. The radial view shows the returns from the sonar signal (using the same color coding as the traditional scrolling view), organised in a circular formation. This view enables you to quickly identify what is currently passing under your transducer (e.g. bottom structure or target etc), in each segment of the depth range.



TRAIL / ASCOPE

The trail and A-scope mode is a splitscreen view that includes a traditional (historical), scrolling, 2D view and an instantaneous (real-time) A-scope view of the water beneath the transducer.



RADIAL

The radial mode is a fullscreen view that provides an instantaneous (real-time), radial view of the water beneath the transducer. The radial view shows the returns from the sonar signal (using the same color coding as the traditional scrolling view), organised in a circular formation. This view enables you to quickly identify what is currently passing under your transducer (e.g. bottom structure or target etc), in each segment of the depth range.



A-SCOPE

The A-scope mode is a fullscreen view that provides an instantaneous (real-time) view of the water beneath the transducer. This allows you to see what is currently passing under your transducer (e.g. bottom structure or target etc), rather than the historical display provided by the traditional, scrolling, 2D view.

Fishfinder channels — Element™ S displays

The following fishfinder channels are available on Element™ S variant displays.



Sonar channel (Conical high CHIRP (200 kHz))

The sonar channel is available when connected to any compatible transducer.

8.2 Fishfinder app controls

The Fishfinder app has 2 control modes, scrolling mode and pause / playback mode. The behavior of some controls are dependent upon control mode and also the fishfinder channel in use. The following controls apply to DownVision™, SideVision™ and sonar channels. The controls below do not apply to RealVision™ 3D channels.

Scrolling mode

Scrolling mode is the default mode when the Fishfinder app is opened. In scrolling mode an image is displayed which scrolls from right to left across the screen.

Control behavior:

- Pressing the **Plus** button will switch to zoom mode.
- When in zoom mode pressing the **Plus** or **Minus** buttons will increase and decrease the zoom level.
- Pressing the **OK** button displays the onscreen gain controls on the left side of the screen.
- Pressing the **Waypoint** button will place a waypoint at your vessels's current location.
- Pressing the **Menu** button will open the app menu.
- Pressing any button on the **Directional pad** will switch to pause / playback mode.

Pause / Playback mode

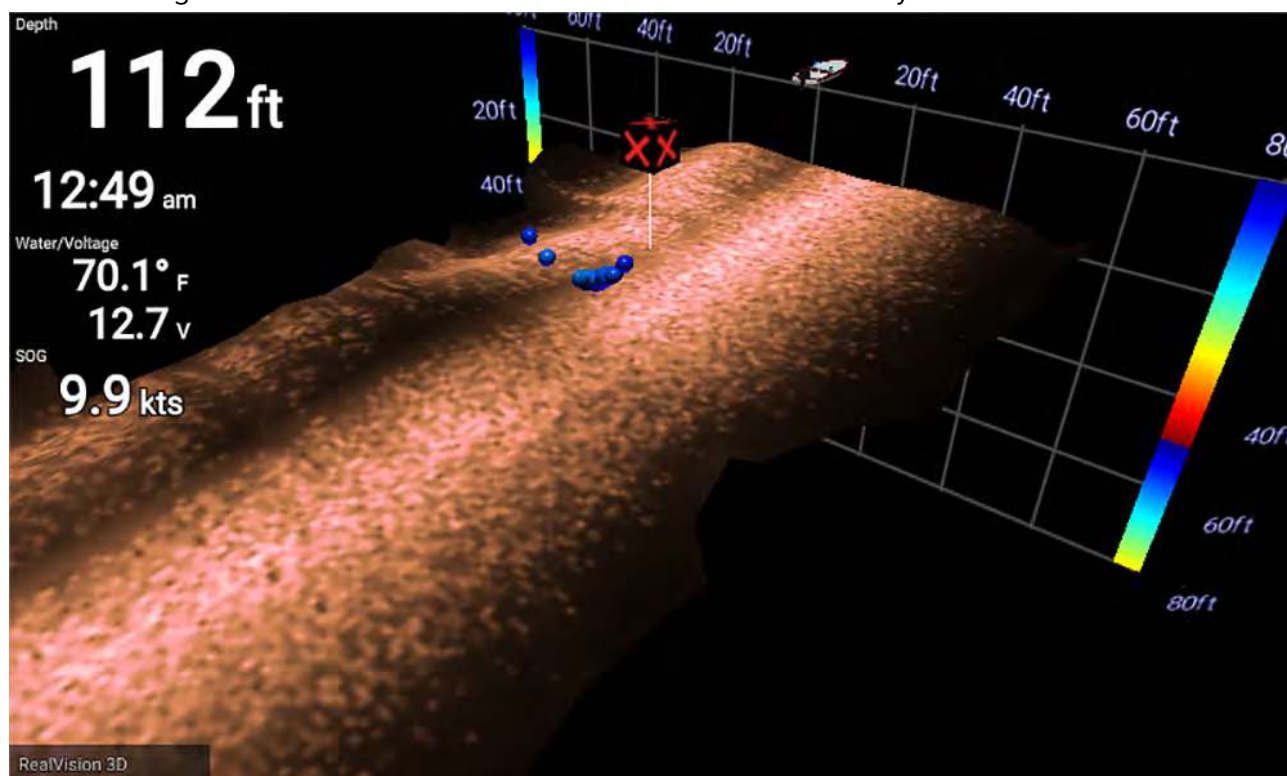
In pause / playback mode the image is temporarily paused and the cursor can be moved around the screen.

Control behavior:

- Pressing the **Plus** button will switch to zoom mode and the scrolling image remains paused.
- When in Zoom mode pressing the **Plus** or **Minus** buttons will increase and decrease the zoom level.
- Pressing the **OK** button displays the fishfinder context menu.
- Pressing the **Waypoint** button will place a waypoint at the cursor's location.
- Pressing any button on the **Directional pad** will move the cursor in that direction.
- With the cursor at the far left of the screen, continuing to press the **Left** button will display the scrolling image history, which enables you to view structure and targets you have already passed.
- Pressing the **Menu** or **Back** button will return the Fishfinder app to scrolling mode.

RealVision™ 3D app controls

When viewing RealVision™ 3D channels the controls behave differently to other fishfinder channels.



Scrolling mode

Scrolling mode is the default mode when the Fishfinder app is opened. In scrolling mode an image is displayed which scrolls across the screen.

Control behavior:

- Pressing the **Plus** or **Minus** buttons will increase and decrease the zoom level.
- Pressing any button on the **Directional pad** will rotate the image in the respective direction.
- Pressing the **Waypoint** button will place a waypoint at your vessels's current location.
- Pressing the **Menu** button will open the app menu.
- Pressing the **OK** button pauses scrolling and switches to pause / playback mode.

Pause / Playback mode

In pause / playback mode the image is paused and the cursor can be moved around the screen.

Control behavior:

- Pressing the **Plus** or **Minus** buttons will increase and decrease the zoom level.
- Pressing the **OK** button displays the fishfinder context menu.
- Pressing the **Waypoint** button will place a waypoint at the cursor's location.
- Pressing any button on the **Directional pad** will move the cursor in that direction.
- With the cursor positioned at the opposite edge of the screen to the vessel icon, continuing to move the cursor in the same direction will display the scrolling image history, which enables you to view structure and targets you have already passed.
- Pressing the **Menu** button will return the Fishfinder app to scrolling mode and open the app menu.
- Pressing the **Back** button will return the Fishfinder app to scrolling mode.

Placing a Waypoint in the Fishfinder app

When you observe something of interest in the Fishfinder app you can place a waypoint at its location so that you can find the area again.

1. Use the **Directional pad** to highlight a point of interest onscreen.

Scrolling is paused, temporarily.

2. Press the **Waypoint** button and, if required enter relevant waypoint details.

Scrolling will resume automatically if no buttons are pressed for approximately 15 seconds.

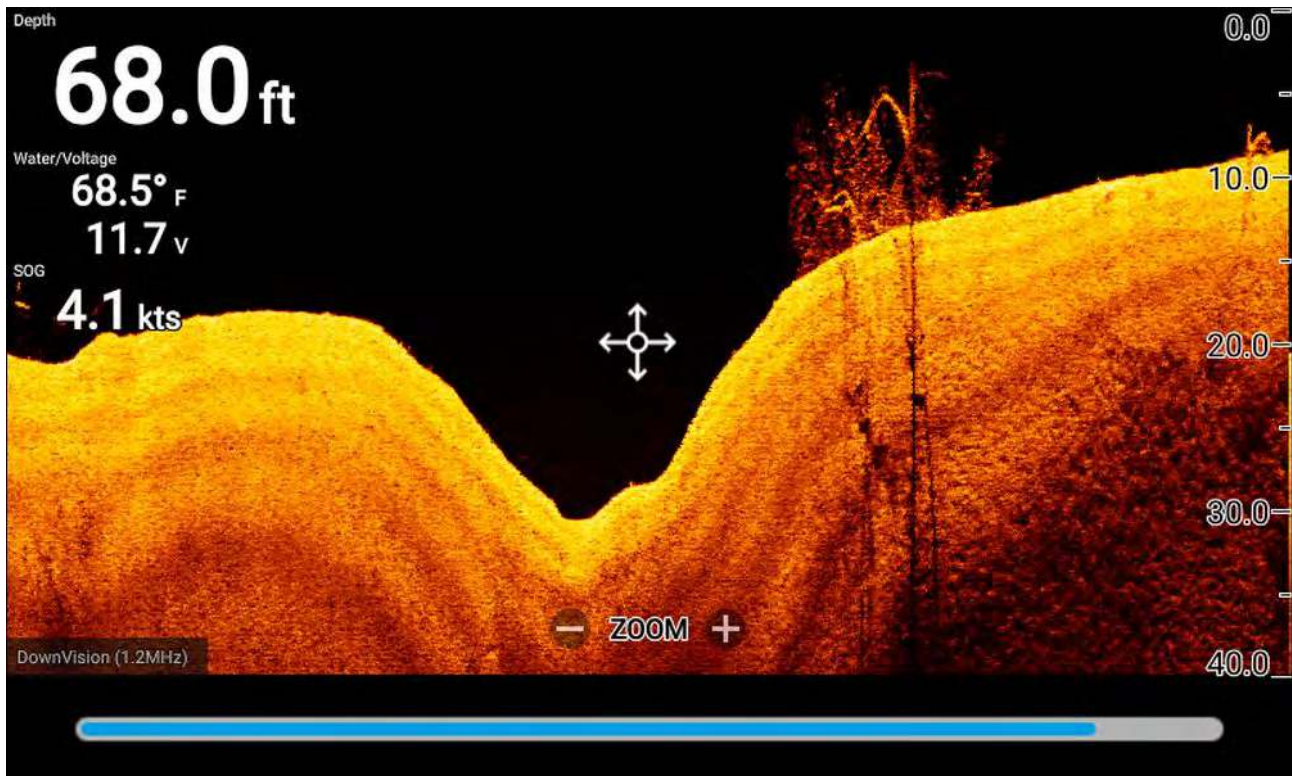
8.3 Sonar scroll back

You can "scroll back" in the Fishfinder app to playback sonar history when the Fishfinder app is in Pause / Playback mode.

To activate pause / playback mode:

- **Sonar / DownVision / SideVision** — Press any **Directional pad** button.
- **RealVision 3D** — Press the **OK** button.

In pause / playback mode the **Scroll back bar** is displayed.



The scrolling image can be played back from any point since the Fishfinder app was opened.

Playing back sonar history

The Fishfinder app's sonar history can be played back.

With the Fishfinder app in scrolling mode:

1. Press any button on the **Directional pad** or press the **OK** button when viewing a RealVision channel.
The Fishfinder app will enter Pause / playback mode.
2. Using the **Directional pad**, move the cursor in the same direction that the image is scrolling, until you reach the edge of the screen.

*e.g.: when viewing a DownVision channel use the **Left** button on the **Directional pad** to position the cursor on the left edge of the screen, continue to press the **Left** button to start scrolling back through the available sonar history.*

8.4 Fishfinder sensitivity controls

Optimum performance is usually achieved using the default settings. You can adjust the image using the Sensitivity controls to improve the displayed image. Sensitivity setting adjustment is also applied to the sonar history that is displayed when using sonar scroll back.

The sensitivity controls can be accessed from the Fishfinder app menu: **Menu > Adjust sensitivity**.

The following sensitivity controls are available to help you optimize the sonar image.

Control	Description
	Gain The gain control determines the signal strength at which target returns are shown onscreen. The gain control can be set to Auto or Manual. In Auto you can apply an offset of up to $\pm 50\%$. A higher value produces more target returns and noise onscreen.
	Intensity The intensity control sets the lower limit for the color used for the strongest target returns. All target returns above this value are displayed in the strongest color. Those with a weaker value are divided equally between the remaining colors. The intensity control can be set to Auto or Manual. In Auto you can apply an offset of up to $\pm 50\%$.
	Surface Filter The surface filter control determines the amount of noise displayed onscreen by varying the gain throughout the water column. A lower value decreases the depth at which the control is applied. The control can be set to Auto or Manual.
	All to Auto Sets all Sensitivity controls to Auto with 0% offset, where applicable.

8.5 Configuring transducer settings

For systems with a transducer connected, as part of setting up your system for the first time it is important that you correctly configure your transducer.

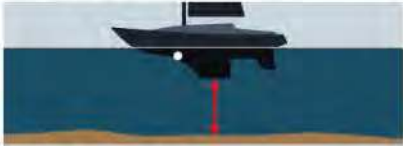
Transducer configuration settings are available from the **Fishfinder app**.

Settings

Sonar Display
Transducer
Sounder
Fish detection
Databoxes

Transducer: HV 3D Xdcr

Display depth as:



☐ Below keel



☐ Below waterline



☒ Below transducer

HV Transducer alignment: Forwards

TEMPERATURE READING

Enable temperature sensor: ●

Current temperature: 22.3°C

Calibrate temp

1. Select **Transducer** from the Fishfinder app's **Settings** menu: **Menu > Settings > Transducer**
2. If your installation required you to install an all-in-one transducer backwards (e.g.: this may occur when connecting the transducer to a trolling motor), then select **Backwards** from the **HV transducer alignment** option. This ensures that the port and starboard channels appear correctly orientated onscreen, otherwise keep the default setting: **Forwards**.
3. Select where you want your depth measurements taken from:
 - i. Below transducer (default) — No offset required
 - ii. Below keel — Enter the distance between the transducer face and the bottom of the keel.
 - iii. Below waterline — Enter the distance between the bottom of your keel and the waterline.
4. You can configure temperature settings as follows:
 - i. Enable or disable temperature readings as required.
 - ii. If enabled, check the temperature reading against the actual water temperature.
 - iii. If the current reading requires adjustment, select **Calibrate temp** and enter the difference between your 2 readings.

8.6 Fishfinder settings menu

The table below details the settings available in the Fishfinder app.

Note:

The availability of some fishfinder settings are dependent on the fishfinder channel being viewed.

Sonar display tab (RealVision™ 3D channel)

Menu item and description	Options
Boat icon Choose which boat icon to use.	List of available boat icons.
Target colors Changes the color palette used for target returns.	- Rainbow (default) - Burnt Yellow - Cool Blue - Lime Green - Ruby Red

Menu item and description	Options
Color targets by Changes the way targets are colored. Depth colors targets according to their depth, a gradient scale can be shown on the 3D grid to aid depth identification. Intensity colors targets according to their size, the bigger the target the darker the color used.	• Depth (default) • Intensity
Bottom colors Changes the color used for bottom structure.	• Copper • Inv Copper • Slate Gray • Lime Green • Inv Lime Green • Burnt Yellow (default) • Inv Burnt Yellow • Cool Blue • Inv Cool Blue • Ruby Red
Background Changes the color used for the app background.	• Black (default) • Blue • White • Gray
Target size Determines the size that target returns will appear onscreen. The higher the number the larger the target returns appear.	Value between 0 to 25 (5 (default))

Sonar display tab (SideVision™ channel)

Menu item and description	Options
Color palette Various color palettes are available to suit different conditions or your personal preference.	• Copper • Inv Copper • Slate Gray • Lime Green • Inv Lime Green • Burnt Yellow (default) • Inv Burnt Yellow • Cool Blue • Inv Cool Blue • Ruby Red
Range lines Displays vertical range lines onscreen.	• On • Off (default)
Color threshold Color threshold determines the signal strength below which target returns are not shown. A low value results in only the strongest colors or lightest shades being displayed.	Value between 0% to 100%. (100% (default))
Scroll speed Determines the scrolling speed for the Sonar image.	Value between 0% to 500% (100% (default)).

Sonar display tab (DownVision™ channel)

Menu item and description	Options
Color palette: Various color palettes are available to suit different conditions or your personal preference.	• Copper • Inv Copper • Slate Gray • Lime Green • Inv Lime Green • Burnt Yellow (default) • Inv Burnt Yellow • Cool Blue • Inv Cool Blue • Ruby Red
Depth lines: Displays horizontal depth lines.	• On • Off (default)
Temperature graph: When enabled overlays a temperature line on the scrolling sonar image. The temperature line will help to determine change in water surface temperature. In Pause / playback mode temperature labels are displayed on the temperature line.	• On • Off (default)
Manual temp range: When enabled you can specify a fixed manual minimum and maximum limit for water surface temperature. The Maximum and Minimum limits are displayed in the temperature graph. The temperature graph overlay must be enabled before manual temperature range can be enabled.	• On • Off (default)
Maximum temp: Specifies the fixed maximum water temperature limit for the temperature graph.	Temperature value.
Current temp: Displays the temperature currently being recorded by your transducer's temperature sensor.	Temperature value.
Minimum temp: Specifies the fixed minimum water temperature limit for the temperature graph.	Temperature value.
Beep: When manual temperature range has been selected the display can trigger an audible beep when the current temperature reading passes the minimum and maximum temperature thresholds.	• On • Off (default)
Color threshold Color threshold determines the signal strength below which target returns are not shown. A low value results in only the strongest colors or lightest shades being displayed.	Value between 0% to 100%.(100% (default))
Scroll speed Determines the scrolling speed for the Sonar image.	Value between 0% to 500% (100% (default)).

Sonar display tab (Sonar high CHIRP channel)

Menu item and description	Options
Color palette Various color palettes are available to suit different conditions or your personal preference.	• Classic Blue (default) • Classic Black • Classic White • Sunburst • Grayscale • Inv. Grayscale • Copper • Night Vision
A-scope A-Scope mode provides a splitscreen view that includes the normal scrolling sonar image and a smaller pane which shows a 'live' image of what is directly below your transducer.	• Off (default) • Center • Right • Cone
Depth lines Displays horizontal depth lines.	• On • Off (default)
White line Displays a solid white line along the detected bottom contour.	• On • Off (default)
Bottom fill Fills the area below the detected bottom contour with a solid color.	• On • Off (default)
Temperature graph: When enabled overlays a temperature line on the scrolling sonar image. The temperature line will help to determine change in water surface temperature. In Pause / playback mode temperature labels are displayed on the temperature line.	• On • Off (default)
Manual temp range: When enabled you can specify a manual minimum and maximum limit for water surface temperature. The temperature graph overlay must be enabled before manual temperature range can be enabled.	• On • Off (default)
Maximum temp: Specifies the fixed maximum water temperature limit for the temperature graph.	Temperature value.
Current temp: Displays the temperature currently being recorded by your transducer's temperature sensor.	Temperature value.
Minimum temp: Specifies the fixed minimum water temperature limit for the temperature graph.	Temperature value.
Beep: When manual temperature range has been selected the display can trigger an audible beep when the current temperature reading passes the minimum and maximum temperature thresholds.	• On • Off (default)

Menu item and description	Options
Color threshold Color threshold determines the signal strength below which target returns are not shown. A low value results in only the strongest colors or lightest shades being displayed.	Value between 0% to 100%.(100% (default))
Scroll speed Determines the scrolling speed for the Sonar image.	Value between 0% to 500% (100% (default)).

Transducer tab

Menu item and description	Options
Transducer: Displays the type of connected transducer.	N/A
Display depth as: Determines the position from where depth readings are taken.	- Below keel - Below waterline - Below transducer (default)
HV transducer alignment: You can select which orientation your HyperVision™ transducer has been installed in. E.g.: if you have installed the transducer on a trolling motor, the transducer may have been installed with the bow arrow pointing towards the stern of the trolling motor instead of the bow. Forwards should be selected if the transducer's bow arrow is pointing towards the bow. Backwards should be selected if the transducer's bow arrow is pointing towards the stern.	- Forwards (default) - Backwards
Enable temperature sensor: Enables and disables the selected transducer's temperature sensor.	- On - Off
Current temperature: Displays the transducer's current temperature reading.	N/A
Calibrate temp Allows you to enter an offset between the actual measured water temperature and the current temperature displayed by your transducer.	Offset temperature value.

Sounder tab

Menu item and description	Options
Ping enable: Enables and disables transducer ping.	- On (default) - Off
Ping rate limit: Allows you to restrict the transducer's maximum ping rate to suit current conditions.	Value between 1 and 100 (80 (default)).
Interference rejection Removes interference caused by other transducers on your vessel or from vessels equipped with transducers close by.	- Auto (default) - Low - Medium - High - Off

Menu item and description	Options
2nd echo rejection The control helps to remove false target returns or false bottom that can be caused by signal reflection.	• Off • Low (default) • High
Reset sounder Resets the sonar module to factory default settings.	• Yes • No

Note:

The fish detection tab is only available when viewing a high CHIRP sonar channel.

Fish detection tab

Menu item and description	Options
Fish detection beep: Enables and disables audible beep when a target is detected that is considered to be a fish.	• On • Off (default)
Fish icons: Enables and disables display of a fish icon over targets considered to be fish.	• On • Off (default)
Fish depth labels: Enables and disables display of depth labels next to targets considered to be fish.	• On • Off (default)
Detection sensitivity: Determines how sensitive the fish detection algorithm is. The higher the value, the more target returns will be considered to be fish.	Values from 0 to 100 (75 (default)).
Ignore fish shallower than: Targets returns found in water shallower than the specified depth will not be considered to be fish.	0 ft to 1000 ft (3.3 ft (default)) or equivalent units.
Note: The shallow limit cannot be greater than the deep limit.	
Ignore fish deeper than: Targets returns found in water deeper than the specified depth will not be considered to be fish.	0 ft to 1000 ft (984 ft (default)) or equivalent units.
Note: The deep limit cannot be less than the shallow limit.	

Databoxes tab

Description	Option
Determines the data item displayed in databox 1.	1:
Determines the data item displayed in databox 2.	2:
Determines the data item displayed in databox 3.	3:
Determines the data item displayed in databox 4.	4:
Selecting will reset all databoxes to factory defaults.	Reset all

Chapter 9: Dashboard app

Chapter contents

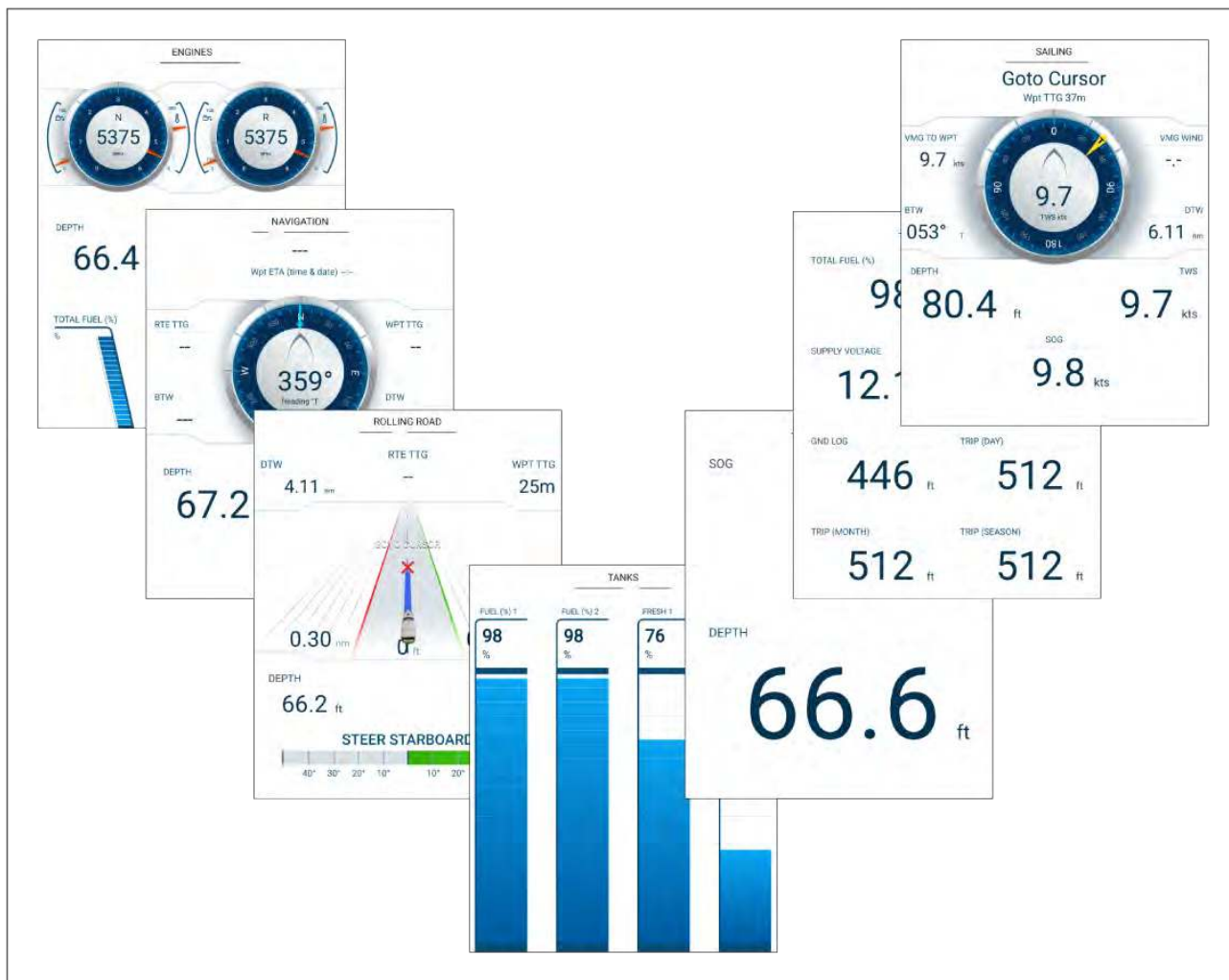
- [9.1 Dashboard app overview on page 118](#)
- [9.2 Navigation and sailing dials on page 119](#)
- [9.3 Rolling road on page 120](#)
- [9.4 Customizing existing data pages on page 121](#)
- [9.5 Data items on page 122](#)
- [9.6 Dashboard app settings menu on page 125](#)

9.1 Dashboard app overview

The Dashboard app enables you to view system data. System data may be generated by your display or by devices connected to your display via SeaTalkng® / NMEA 2000.

Note:

For data to be available in the Dashboard app it must be transmitted to your display from compatible hardware using supported protocols and messages.



You can configure which data pages you want visible in the Dashboard app, the Data page selection will persist over a power cycle.

The Dashboard app is pre-configured, based on start up wizard selections, with a number of customizable data pages.

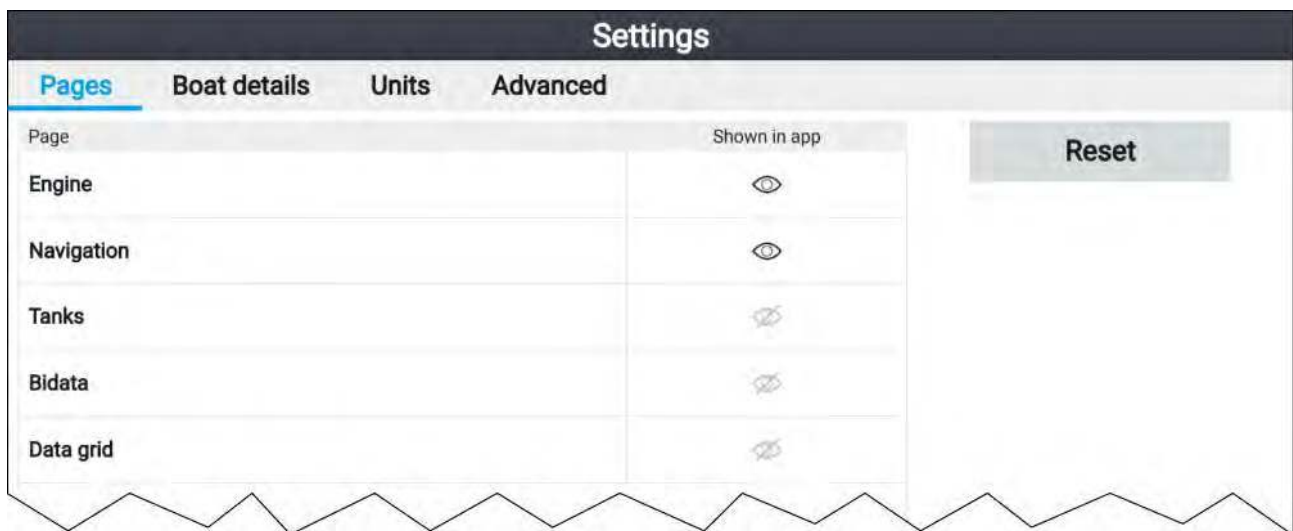
Switching data page

When the Dashboard app is the active app you can cycle through the available data pages.

1. Use the **Left** and **Right** buttons to cycle through the available data pages.

Alternatively, you can select a page you want to display using the page icons found in the app menu.

Hiding and showing data pages

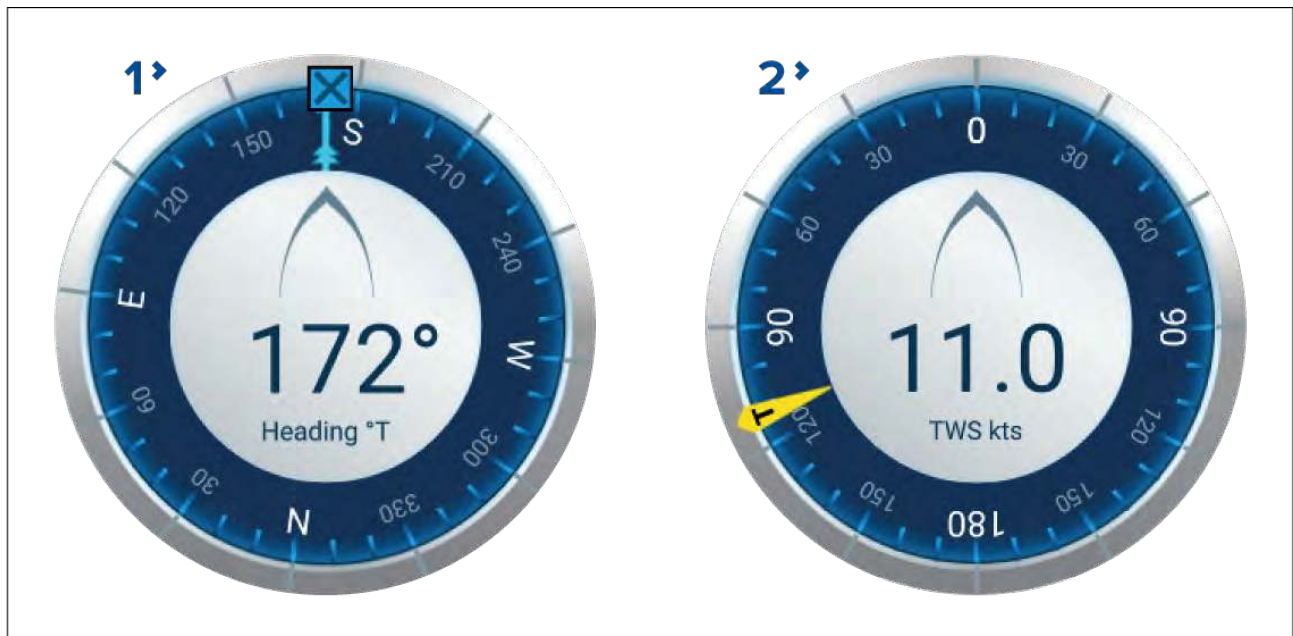


With the Dashboard app displayed and active:

1. Press the **Menu** button.
2. Select the **Settings** icon.
The menu is opened on the **Pages** tab.
3. Using the **Up** button and **Down** button, highlight the page you want to hide or show.
4. Press the **OK** button.
5. Select either **Hide page** or **Show page**.
6. Press the **Menu** button to close the menu.

9.2 Navigation and sailing dials

Dials are available for the navigation and sailing pages which provide a compass dial that includes various data indicators.



1. **Navigation dial** — The navigation dial provides a full compass with Heading read out, COG indicator and destination waypoint indicator.
2. **Sailing dial** — The sailing dial provides a full compass with wind speed read out and wind angle indicator. The sailing dial can be switched between displaying True wind and Apparent wind.

Dial indicators:

	COG indicator Visual identification of your course over the ground. The COG indicator is available on the navigation dial when COG data is available.
	Destination waypoint indicator Visual identification of the course to your current destination. The Destination waypoint indicator is available during active navigation (i.e.: Navigating to a waypoint, performing a goto or following a route).
	True wind angle indicator Visual identification of the true wind angle. The indicator is available on the sailing dial when wind data is available and the dial is set to TWS.
	Apparent wind angle indicator Visual identification of the apparent wind angle. The indicator is available on the sailing dial when wind data is available and the dial is set to AWS.

Switching between TWS and AWS sailing dials

The sailing dial can be configured to display either True wind data or Apparent wind data.

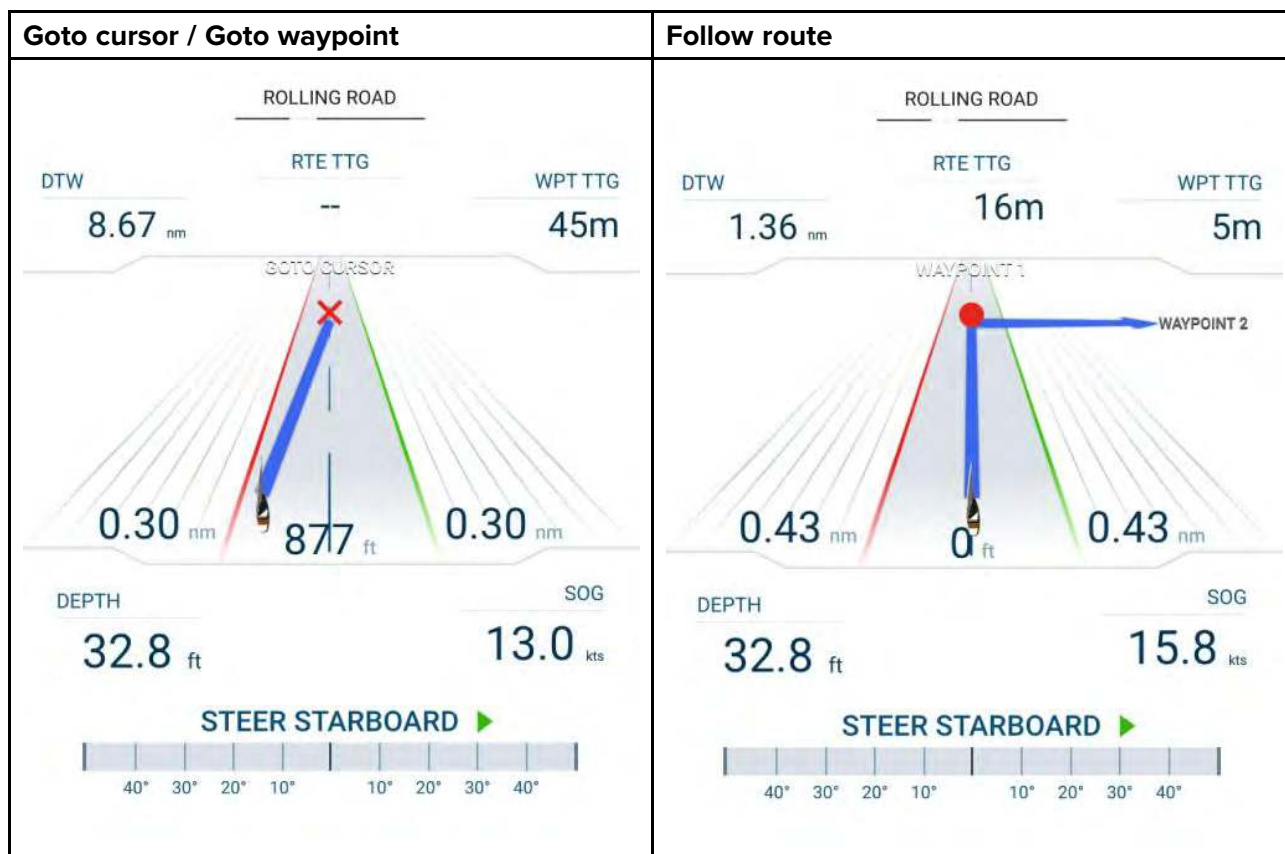
From the Dashboard app with the sailing page displayed:

1. Press the **Menu** button.
2. Select **Customize page**.
The Dashboard app page will enter edit mode with the sailing dial highlighted.
3. Press the **OK** button.
4. Select **Edit** from the pop-over menu.
5. Select **Wind**.
6. Select **TWS** to display the True wind dial, or select **AWS** to display the Apparent wind dial.
7. Press the **Back** button to exit edit mode.

9.3 Rolling road

The rolling road dashboard page provides a graphical representation of your vessel's course and indicates if your vessel has deviated from its course.

With your display receiving accurate heading and position data, you can use the rolling road page to monitor your course and accurately steer to a target destination.



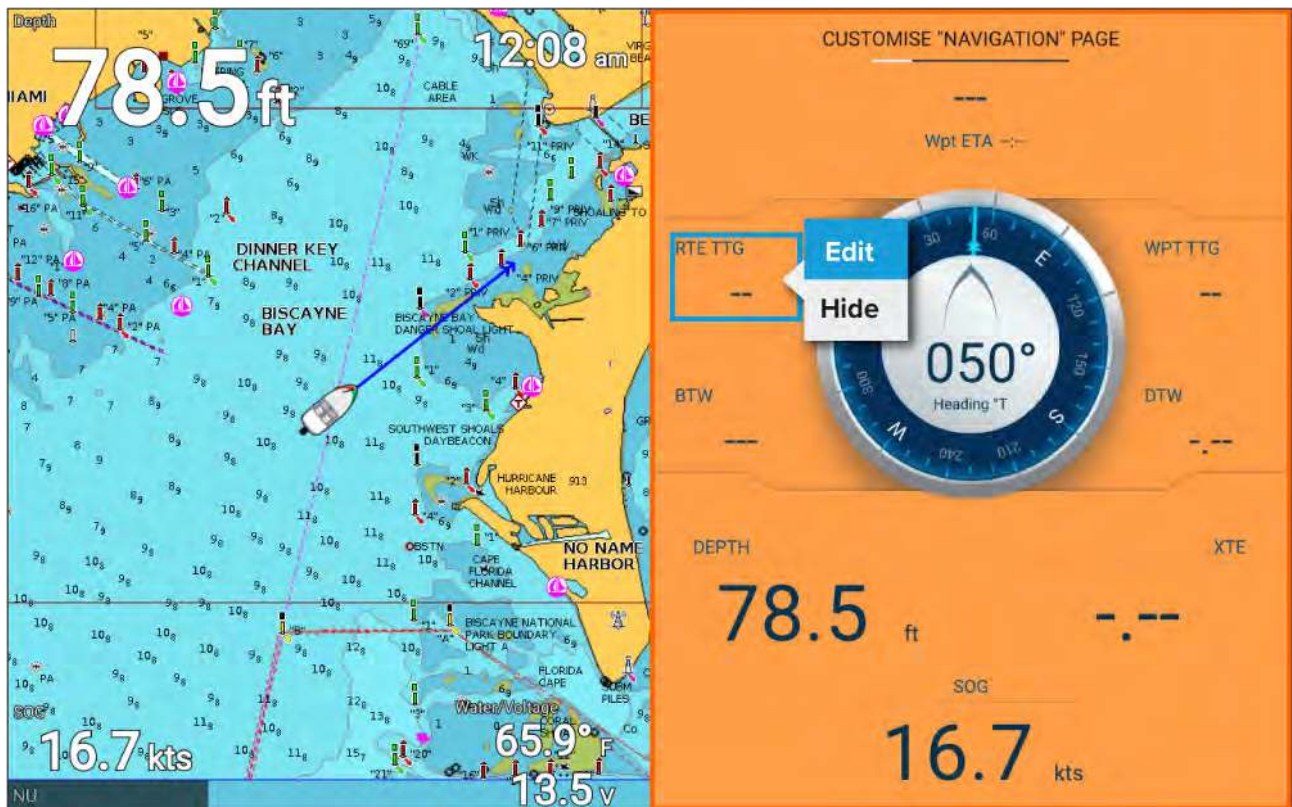
The rolling road graphic represents a width of water, equal to the limit specified in the cross track error (XTE) alarm, on each side of your vessel. The Cross track error alarm can be configured from the alarms menu: **Homescreen > Settings > Alarms > Cross-track error**.

During active navigation (performing a **Goto** or **Follow**) , navigational data and steering advise are provided on the page.

Follow the steering advise to correct any course deviation that occurs and maintain your course to the target destination.

9.4 Customizing existing data pages

The data items displayed on each page can be changed.



1. Select **Customize page** from the Dashboard app menu: **Menu > Customize page**.
2. Select the data item that you want to change.
3. Select **Edit** from the data item pop-over menu.
4. Select the new data item that you want to display.

9.5 Data items

The following data items can be displayed in Databoxes.

Note:

Where more than 1 data source is available for a data item, based on the specified Boat details (**Homescreen > Settings > Boat details**), then data items will be available for each data source.

Category	Data item
Battery • Battery 1 • Battery 2 • Battery 3	• Time till zero charge • State of charge • Battery temperature • Battery voltage • Battery current
Boat	• Fresh water (%) • Live well (%) • Gray water (%) • Black water (%)
Depth	• Depth
Display	• Supply voltage

Category	Data item
Distance	• Trip (season) • Trip (month) • Trip (day) • Ground Log
Engine • Port engine • Starboard engine • All engines	• Engine hours • Engine RPM (Revolutions per minute) • Boost pressure • Oil temperature • Oil pressure • Alternator • Coolant pressure • Coolant temperature • Engine load • Engine trip • Fuel flow • Fuel flow (inst) • Fuel flow (avg) • Fuel pressure • Gear • Trans oil pressure • Trans oil temperature
Fuel • Tank 1 • Tank 2 • All Tanks	Tank 1 and Tank 2: • Fuel level (%) All Tanks: • Engine economy total • Fuel flow total • Time to empty • Distance to empty • Fuel used (season) • Fuel used (trip) • Est. fuel remaining • Total fuel (%)
Environment	• Max water temp • Min water temp • Water temp • Set • Drift • Water & Supply (Water temp and supply voltage) • Sunrise/set

Category	Data item
GPS	• Course over ground • Average SOG (Average Speed Over Ground) • Maximum SOG • SOG • Vessel position • Course over ground SOG
Heading	• Heading
Navigation	• Route ETA (Route Estimated Time of Arrival) • Route TTG (Route Time To Go) • Active waypoint • Waypoint TTG • Estimated arrival time • Distance to waypoint • Cross track error • Bearing to waypoint • Wpt info (Waypoint information)
Speed	• VMG to waypoint (Velocity Made Good to Waypoint) • VMG to windward (Velocity Made Good to Wind) • Avg speed • Max speed • Speed thru water
Time	• Time • Date • Time and Timer
Wind	• Cardinal • Beaufort • Ground wind direction • True wind direction • Minimum true wind angle • Maximum true wind angle • True wind angle • Maximum true wind speed • Minimum true wind speed • True wind speed • Minimum app wind angle • Maximum app wind angle • App wind angle • Minimum app wind speed • Maximum app wind speed • App wind speed

9.6 Dashboard app settings menu

Pages tab

Navigation	The pop-over menu provides the following options: • Hide page / Show page — When hidden the page will not be displayed in the Dashboard app. • Move up — Moves the page up in the page order. • Move down — Moves the page down in the page order. • Rename — Renames the page. The data pages can be reset to factory defaults using the Reset button,
Tanks	
Bidata	
Data grid	
Engines	

Boat details

To ensure correct operation and display of data you should set the Boat Details settings according to your requirements.

Boat details can be accessed from the **Settings** menu: **Homescreen > Settings > Boat Details**

Option	Description
Min safe height:	Enter your vessel's maximum unladen height from the waterline. To ensure adequate clearance, it is recommended that you add a safety margin to this figure to allow for variation caused by vessel movements.
Min safe width:	Enter your vessel's maximum width at its widest point. To ensure adequate clearance on both sides, it is recommended that you add a safety margin for port and starboard to this figure to allow for variation caused by vessel movements.
Min safe depth:	Enter your vessel's maximum depth when fully laden. This is the depth from the waterline to the lowest point on the vessel's keel. To ensure adequate clearance, it is recommended that you add a safety margin to this figure to allow for variation caused by vessel movements.
Num of engines:	You can configure your system to display data for up to 2 engines, when connected to a compatible engine management system.
Identify engines:	Once you have selected the number of engines, select Identify engines and follow the onscreen instructions to configure your engines. May require an extra hardware interface to enable engine data to be displayed.
Fuel tanks:	You can configure your system to display data for up to 2 fuel tanks.
Fresh water tanks:	You can configure your system to display data for up to 2 fresh water tanks.
Live well tanks:	You can configure your system to display data for up to 2 Live well tanks.
Gray water tanks:	You can configure your system to display data for a Gray water tank.
Black water tanks:	You can configure your system to display data for a Black water tank.
Batteries:	You can configure your system to display data for up to 3 batteries.
Transducer:	You can select the transducer type that is connected to your display. Important: Ensure the display is powered off before physically changing your transducer.

Units of measure

You can select your preferred units for data readings from the **Units** menu: **Homescreen > Settings > Units**.

Default units of measure are determined by the selected user interface language.

Measurement	Units
Distance units:	• Nautical Miles • NM & m • Statute Miles • Kilometers
Speed units:	• Kts • MPH • KPH
Depth units:	• Meters • Feet • Fathoms
Temperature units:	• Celsius • Fahrenheit
Wind speed units:	• Knots • Metres per Second
Volume units:	• US Gallons • Imperial Gallons • Liters
Economy units:	• Distance per Volume • Volume per Distance • Liters per 100 km
Pressure units:	• Bar • PSI • Kilopascals
Date format:	• MM:DD:YYYY • DD:MM:YYYY • MM:DD:YY • DD:MM:YY
Time format:	• 12hr • 24hr
Time zone:	• UTC offsets

Measurement	Units
Bearing mode:	• True • Magnetic
System datum:	List of available datums.
Variation:	• Auto • Manual
Manual variation:	• 30°W to 30°E

Advanced settings menu

Menu item and description	Options
Maximum RPM: The maximum RPM (Revolutions Per Minute) field determines the maximum RPM value displayed on the engine dial. when set to auto the system decides the maximum RPM value.	• Auto (default) • 3000RPM • 4000RPM • 5000RPM • 6000RPM • 7000RPM • 8000RPM • 9000RPM • 10000RPM
Custom RPM red zone: When enabled the engine RPM dial will show a Red zone between the Custom RPM red zone and the value specified in the RPM red zone start value field.	• On • Off (default)
RPM red zone start value	0 RPM to 10,000 RPM

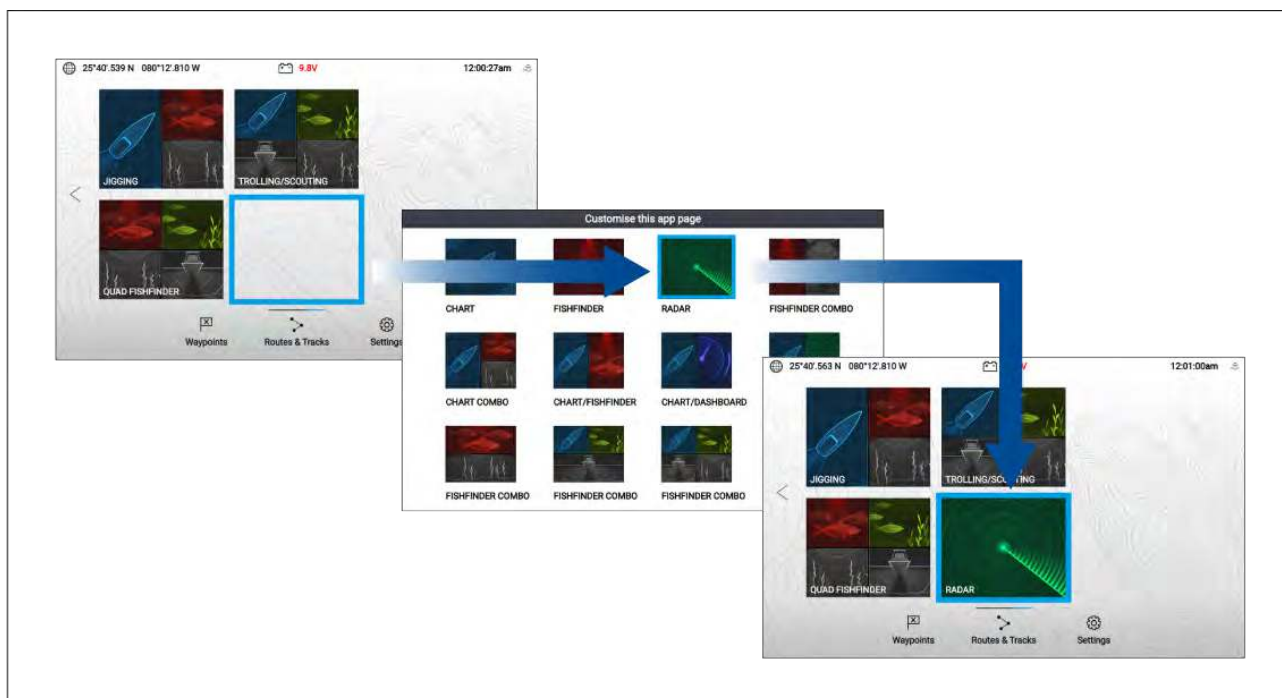
Chapter 10: Radar app

Chapter contents

- [10.1 Adding the Radar app icon to the homescreen on page 130](#)
- [10.2 Opening the Radar app on page 131](#)
- [10.3 Radar app overview on page 133](#)
- [10.4 Radar modes on page 135](#)
- [10.5 Automatic Identification System \(AIS\) support on page 136](#)
- [10.6 Range and bearing on page 140](#)
- [10.7 Guard zone alarm on page 143](#)
- [10.8 Sensitivity controls on page 144](#)
- [10.9 Radar settings menu on page 145](#)

10.1 Adding the Radar app icon to the homescreen

If the Radar app icon is not displayed on the homescreen it can be added manually following the steps below.



From the homescreen:

1. Using the **Directional pad**, highlight a blank space on the homescreen.
2. Press and hold the **OK** button.
3. Highlight the Radar app icon and press the **OK** button.

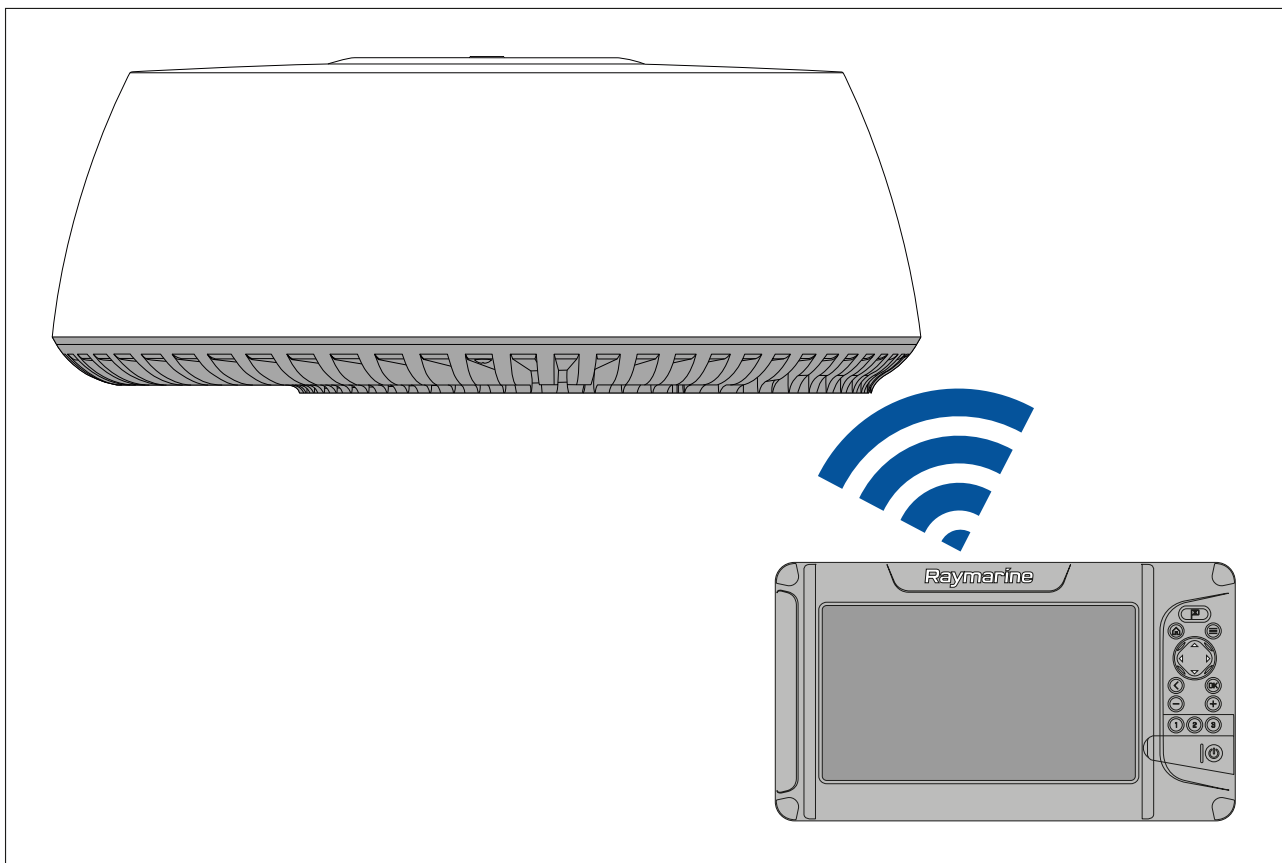
The Radar app icon is now displayed on the homescreen.

Pairing a Quantum™ radar scanner

You can connect a Quantum™ radar scanner to your display using the Wi-Fi connection.

Pre-requisites:

- Ensure you have installed and connected your Quantum™ radar scanner to a power supply following the instructions supplied with the radar scanner.
- Ensure you know your Quantum™ radar scanner's SSID and passcode.



1. Select **Pair with Quantum** from the **This display** tab: **Homescreen > Settings > This display > Quantum Radar: > Pair with Quantum**.
2. Enter the SSID and passcode for your Quantum™ radar.
3. Select **Connect**.
4. Follow any onscreen instructions to continue pairing with your Quantum™ radar.

The pairing process may take several minutes to complete.

For more information on the Quantum™ radar pairing process (including troubleshooting information), refer to your Quantum™ radar documentation.

10.2 Opening the Radar app

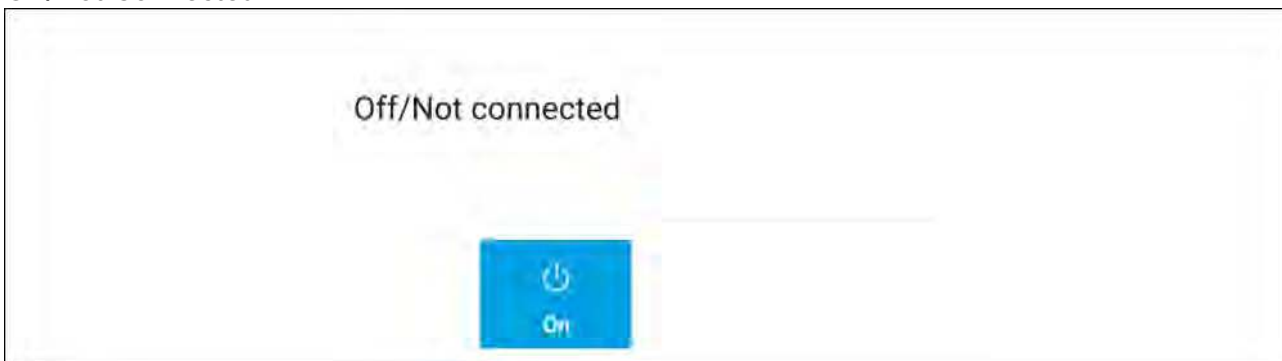
The Radar app is opened by selecting a page icon from the homescreen that includes the Radar app.

Pre-requisites:

1. Ensure your radar scanner is compatible, check the latest details available on the Raymarine website, if in doubt please contact an authorized Raymarine dealer for advice.
2. Ensure you have installed your radar scanner in accordance with the documentation that was supplied with your Radar.

The Radar app will open in one of the following states:

Off/Not Connected



If the '**Off/Not Connected**' message is displayed then the display cannot establish a connection with your radar scanner:

Ensure that your display and radar scanner are paired correctly and then select **On** to power up your radar.

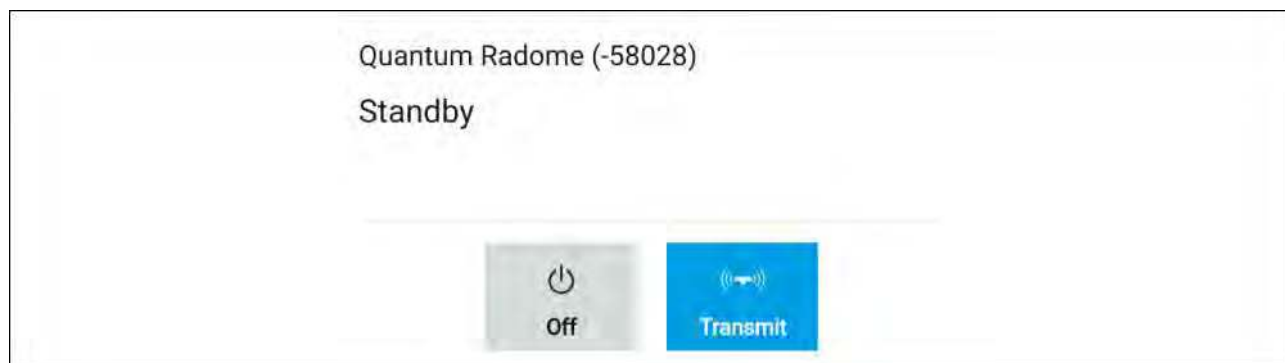
If the '**Radar not found**' message is displayed then power cycle your system and perform the pairing procedure again. If the radar scanner still cannot be found refer to your Radar's installation documentation for further troubleshooting information.

Off



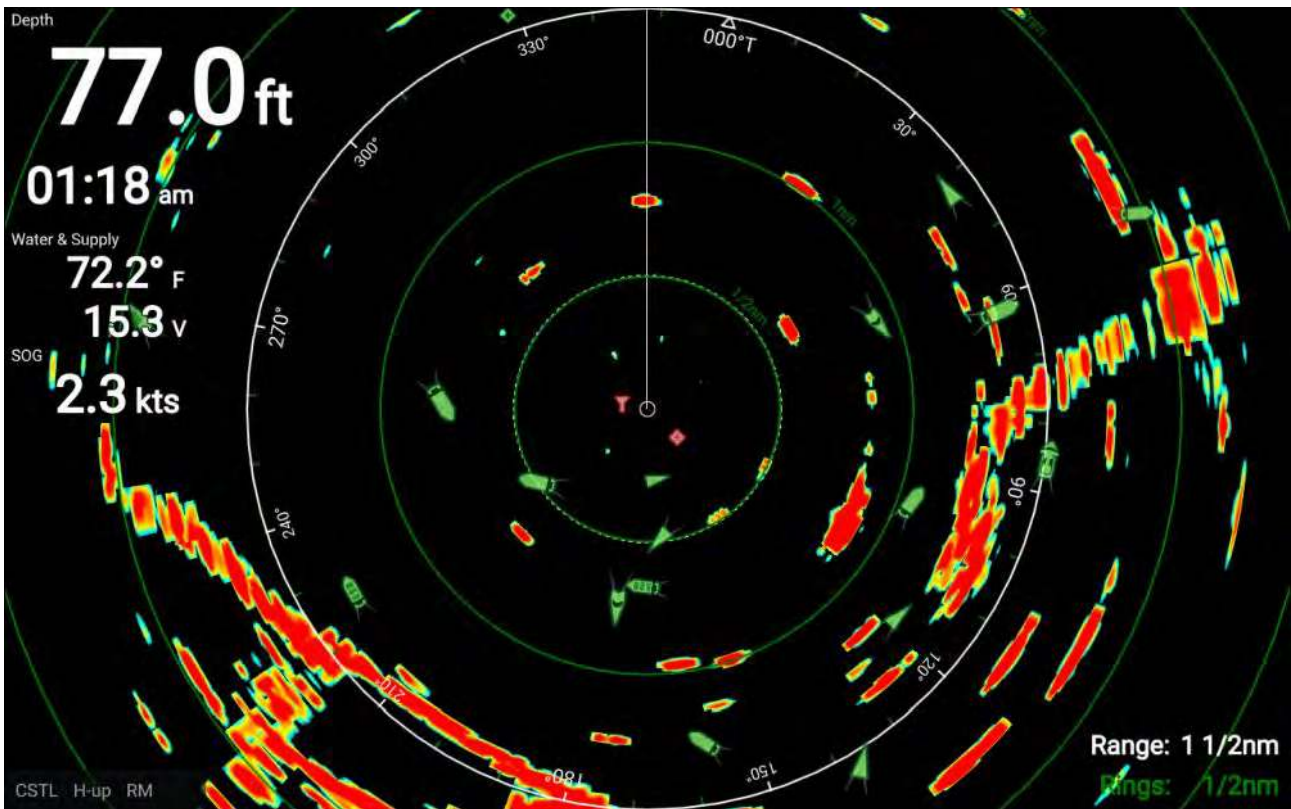
If the '**Off**' message is displayed then your radar scanner is powered off, select **On** to power up your Radar

Standby (Not transmitting)



If the '**Standby**' message is displayed then select **Transmit** to begin transmitting.

Transmitting



If your radar scanner is connected, powered up and transmitting then the radar image is displayed and echoes returns are displayed onscreen.

Putting the radar into standby

With your selected radar displayed onscreen:

1. Select **Transmit** from the main menu.

The radar scanner will stop transmitting and is put into standby mode.

Powering down your radar scanner

With your radar scanner in standby mode:

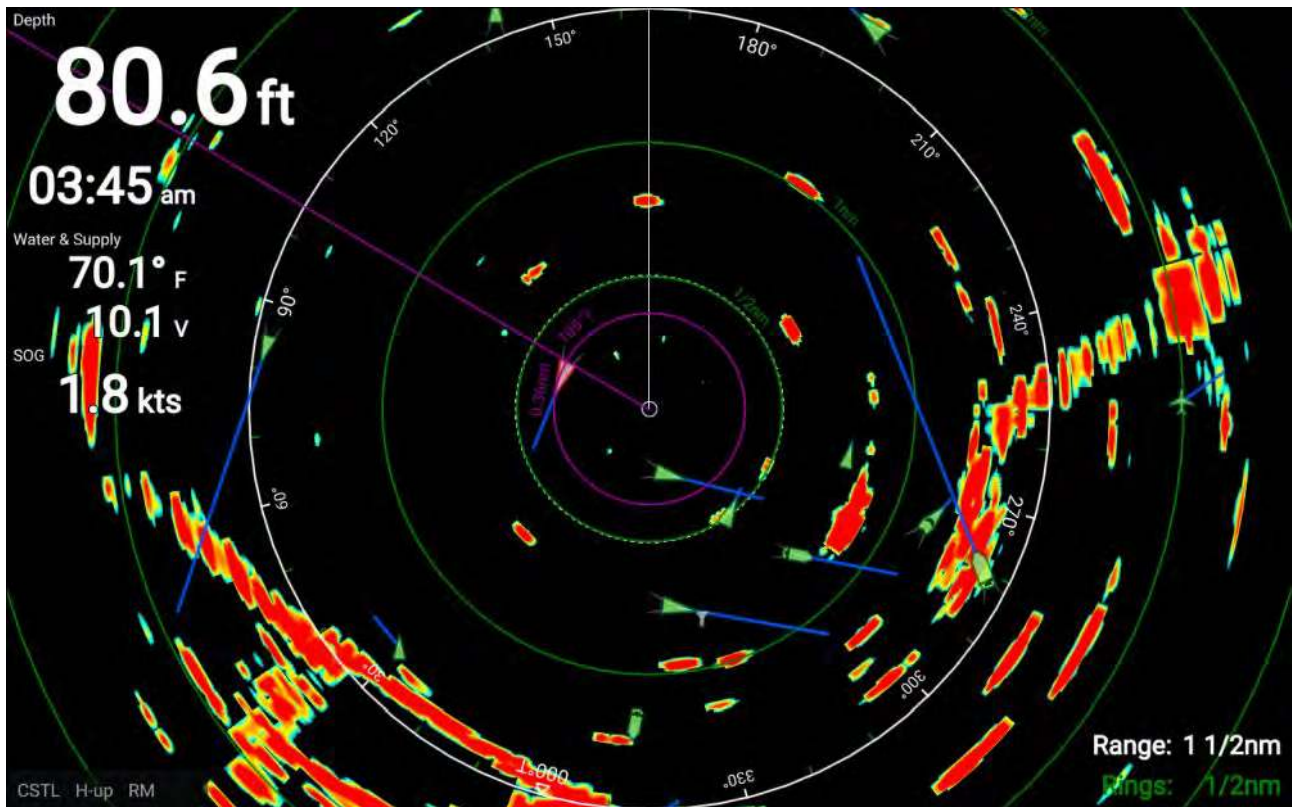
1. Select the **Off** icon.
2. Select **Yes** to confirm power down.

The radar scanner will still consume a small amount of power whilst it is powered off, this is to ensure the radar can be powered back up quickly.

10.3 Radar app overview

Radio Detection and Ranging (RADAR) is used on the water to detect the presence of objects at a distance, and if they are moving, detect their speed. Radar works by transmitting radio pulses, then detecting reflections of these pulses (echoes) from objects in the area. The Radar app is a navigation aid, used to enhance situational awareness by displaying a visualization of the echoes received by a connected radar scanner.

The Radar app can be displayed in Fullscreen and splitscreen app pages.



Note:

- Some features of the Radar app require your display to have both a GNSS (GPS) position fix and compass heading data available, e.g.: to enable accurate display of AIS targets in relation to your vessel and to report geographical positions (Latitude and Longitude) of the cursor position.
- Radar target tracking and Doppler features are not available in LightHouse™ Sport.

The Radar app allows you to configure a **Guard Zone** alarm which is triggered when an object is located within the specified guard zone area.

The Range rings, the bearing ring and a VRM/EBL can be used to identify a target's range and bearing in relation to your vessel.

AIS targets can also be displayed and tracked in the Radar app.

Compatible radar scanners

Element™ displays that include Wi-Fi can be connected wirelessly to the following radar scanners:

- Quantum™ Q24W (E70344)
- Quantum™ Q24C (E70210)
- Quantum™ 2 Doppler Q24D (E70498)

Note:

Element displays do not support tracking of radar targets or doppler features

Radar app controls

The Radar app has 2 control modes, motion mode and cursor mode. The behavior of some controls are dependent upon control mode.

Motion mode

Motion mode is the default mode when the Radar app is opened. In motion mode the cursor is not displayed onscreen.

Controls behavior:

- Pressing the **OK** button opens the sensitivity controls.
- Pressing any button on the **Directional pad** will switch to Cursor mode.
- Pressing the **Waypoint** button will place a waypoint at your vessel's current location.

- Pressing the **Plus** or **Minus** buttons will range in and range out respectively, centered around your vessel .

Cursor mode

In cursor mode the cursor can be used to select objects onscreen.

Controls behavior:

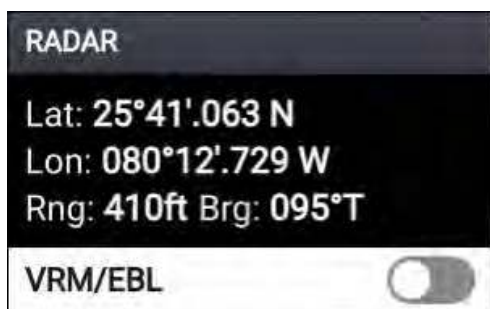
- Pressing the **OK** button opens the context menu for the area or object directly under the cursor's position.
- Pressing any button on the **Directional pad** moves the cursor in the respective direction.
- Pressing the **Waypoint** button will place a waypoint at your vessel's current location.
- Pressing the **Plus** or **Minus** buttons will range in and range out respectively.
- Pressing the **Back** button will switch back to Motion mode.

Note:

Waypoints are not shown in the Radar app.

Radar app context menu

The Radar context menu provides context sensitive data and menu options.



- The Radar context menu is accessed by highlighting a location or object onscreen and pressing the **OK** button.
- The context menu provides Latitude, longitude, range and bearing details for the selected location or object in relation to your vessel's position.
- The context menu provides access to the VRM/EBL marker control

10.4 Radar modes

The Radar app provides preset modes that can be used to quickly achieve the best picture depending on your current situation. Only Radar modes supported by your Radar scanner are shown.

To change radar mode select the required mode from the Radar app menu.



HARBOR

Harbor mode takes into account land clutter that is typically encountered in a Harbor, so that smaller targets are still visible. This mode is useful when navigating in a Harbor.



COASTAL

Coastal mode takes into account slightly higher levels of Sea clutter that are encountered out of Harbor areas. This mode is useful when in open water but keeping to coastal areas.



OFFSHORE

Offshore mode takes into account high levels of Sea clutter so that targets are still visible, useful when navigating in open water away from the coast.



WEATHER

Weather mode optimizes the display to help identify precipitation, useful for helping determine weather fronts.

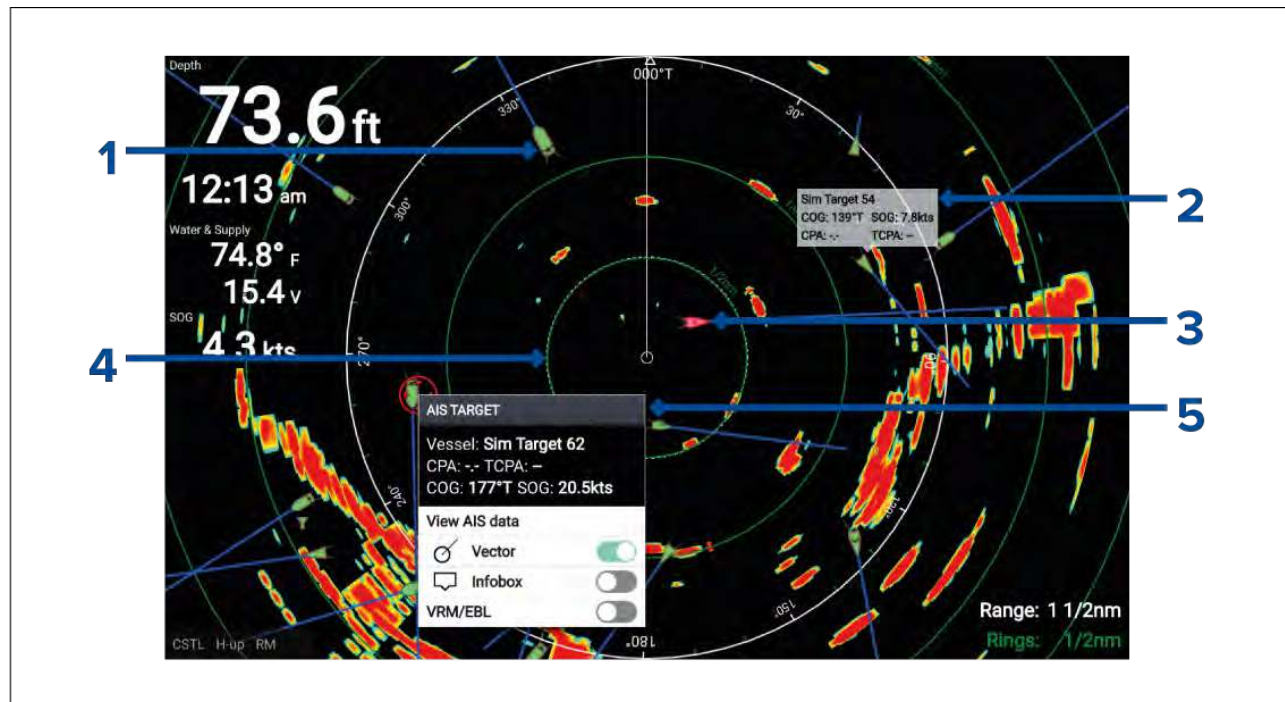
10.5 Automatic Identification System (AIS) support

With compatible AIS hardware connected to your display, AIS targets can be tracked.

AIS equipped vessels that are transmitting their position, and are within range of your vessel, can be represented in the Radar app using AIS target icons.

Note:

A maximum of 100 AIS targets can be tracked simultaneously. If there are more than 100 AIS targets within range of your vessel the closest 100 targets will be displayed.



1. **AIS target icon** — Example of an AIS target icon.
2. **AIS Infobox** — Information can be displayed for each AIS target.
3. **Dangerous AIS target icon** — Example of an AIS target icon that is dangerous.
4. **Safe distance ring** — A ring can be displayed which represents the dangerous AIS target alarm's Safe distance.
5. **AIS context menu** — The AIS context menu is displayed when an AIS target is selected.

AIS target context menu

The AIS target context menu provides context sensitive data and menu options related to AIS targets.

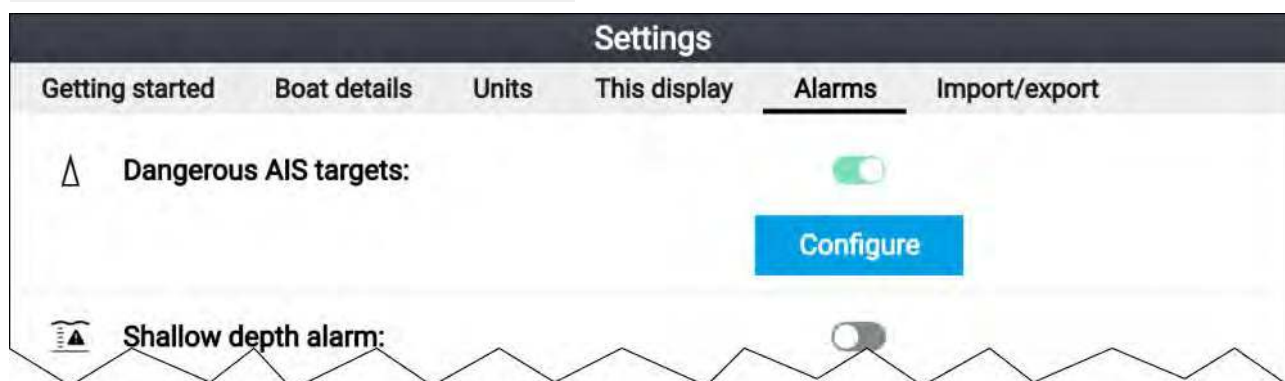


- The AIS target context menu is accessed by highlighting an AIS target onscreen and pressing the **OK** button.
- The context menu provides vessel name or MMSI, CPA and TCPA, if available, COG and SOG data.
- The following menu options are available:
 - **View AIS data** (displays more detailed AIS data on a fullscreen page)
 - **Vector** (enables and disables display of the AIS target vector) Vector is a global setting and applies to both the Radar app and Chart app.
 - **Infobox** (displays the AIS data that is shown in the context AIS target context menu onscreen, next to the AIS target)
 - **VRM/EBL** (allows creation of a Variable Range Marker / Electronic Bearing Line)

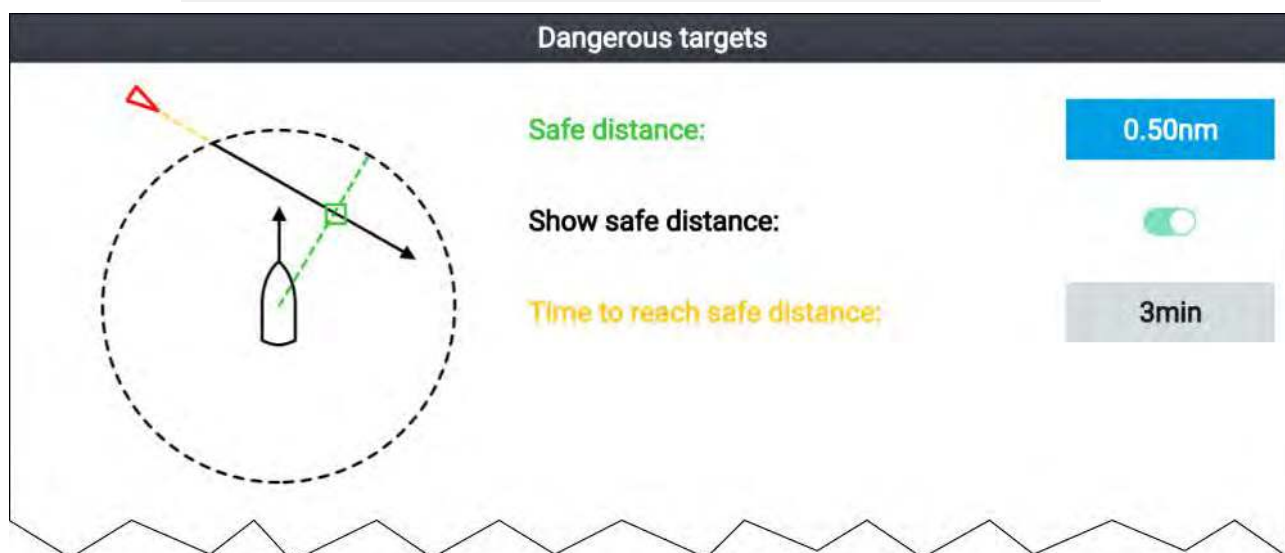
AIS dangerous targets

If AIS targets enter a dangerous target state they can trigger an alarm on your display. AIS targets are considered to be dangerous if they will pass within a specified safe distance from your vessel within a specified time interval.

The dangerous target alarm can be enabled and disabled from the alarms menu: **Homescreen > Settings > Alarms > Dangerous AIS targets** .



The dangerous target alarm can be configured from the Dangerous target page, accessed from the alarms menu: **Homescreen > Settings > Alarms > Dangerous AIS targets > Configure**.



To set up the AIS dangerous target alarm, first adjust the **Safe distance** to the desired value and then select a **Time to reach safe distance**. The alarm will be triggered if a tracked target will reach the specified Safe distance from your vessel within the time period selected.

You can display a Safe distance ring around your vessel in the Chart app and Radar app by enabling **Show safe distance**.

AIS vectors

Vectors can be displayed for AIS targets.

AIS target vectors settings can be accessed from the **Target Settings** tab: **Menu > AIS Targets > Target Settings**.

The length of the vector indicates the predicted position of the target after the time interval specified in **Vectors period** has passed. Adjusting the **Vectors period** option will adjust the length of the vector.

AIS vectors can be enabled and disabled using the **AIS vectors** toggle switch.

Target vectors can be enabled and disabled for individual targets: Press and hold on an AIS target to display the context menu, and then select **Vector**.

The vectors can be set to **True** or **Relative**.

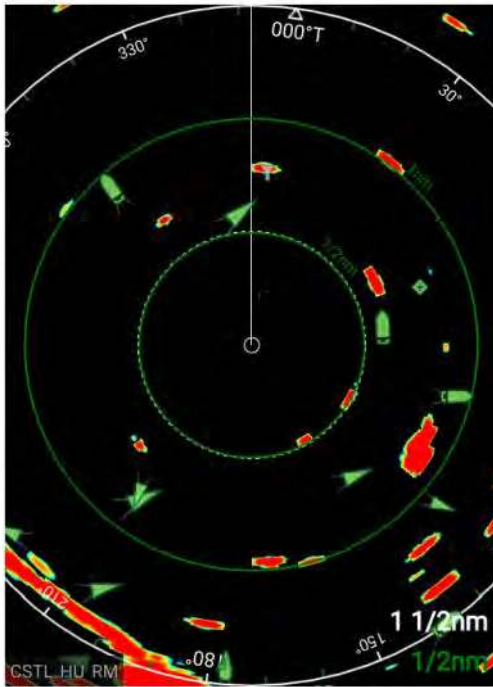
	True vectors In true mode the vectors are shown ground referenced (i.e.: their actual path over ground).
	Relative vectors In relative mode the vectors are shown relative to your vessel's position.

AIS targets list

Tracked AIS targets are listed in the AIS targets list.

The AIS targets list can be accessed from the Radar app menu: **Menu > AIS Targets**.

Targets					
AIS Target Settings					
Target	Range	Bearing	CPA	TCPA	
 Sim Target 154	0.58nm	082°S			
 85	0.60nm	004°P			
 Sim Target 152	0.74nm	140°S			
 Sim LBS 148	0.76nm	005°S	0.45nm	29m 41s	
 Sim AtoN 141	0.78nm	071°S			
 Sim Target 151	0.83nm	143°P			
 Sim Target 143	0.82nm	145°P	0.69nm	4m 21s	
 Sim Target 150	0.92nm	042°P			
 Sim Target 147	0.93nm	104°S			
 153					



When an AIS target is highlighted in the list the selected AIS target will also be highlight in the LiveView pane.

When an AIS target is selected the AIS target details page is displayed.

AIS Settings

Settings related to AIS can be accessed from the Target Settings menu: **Menu > AIS Targets > Target Settings**.

AIS:	Enables and disables display of AIS targets in the Chart app. Note: When disabled AIS targets and details are still available in the AIS targets list.
Silent mode (don't transmit my position):	Your AIS hardware will not transmit any data when in silent mode. In Silent mode AIS data can still be received from other vessels.
Hide static targets:	Targets travelling under 2 knots will be hidden, unless the target is dangerous or becomes dangerous.
AIS vectors:	Enables and disables display of vectors on AIS targets.

Vectors period:	Determines the predicted position of the target (and therefore the length of the vector). Note: The Vectors period settings also applies to your vessel's COG vector.
Reference mode:	Determines whether vectors are shown in true or relative mode.

AIS target symbols

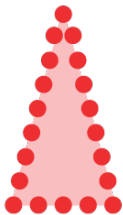
Different symbols are used to identify type of AIS target and their status.

AIS symbols

	Sailing Vessel		Commercial
	High speed vessel / Wing In Ground vessel		Cargo vessel
	Passenger vessel		Other
	Land based station		ATON

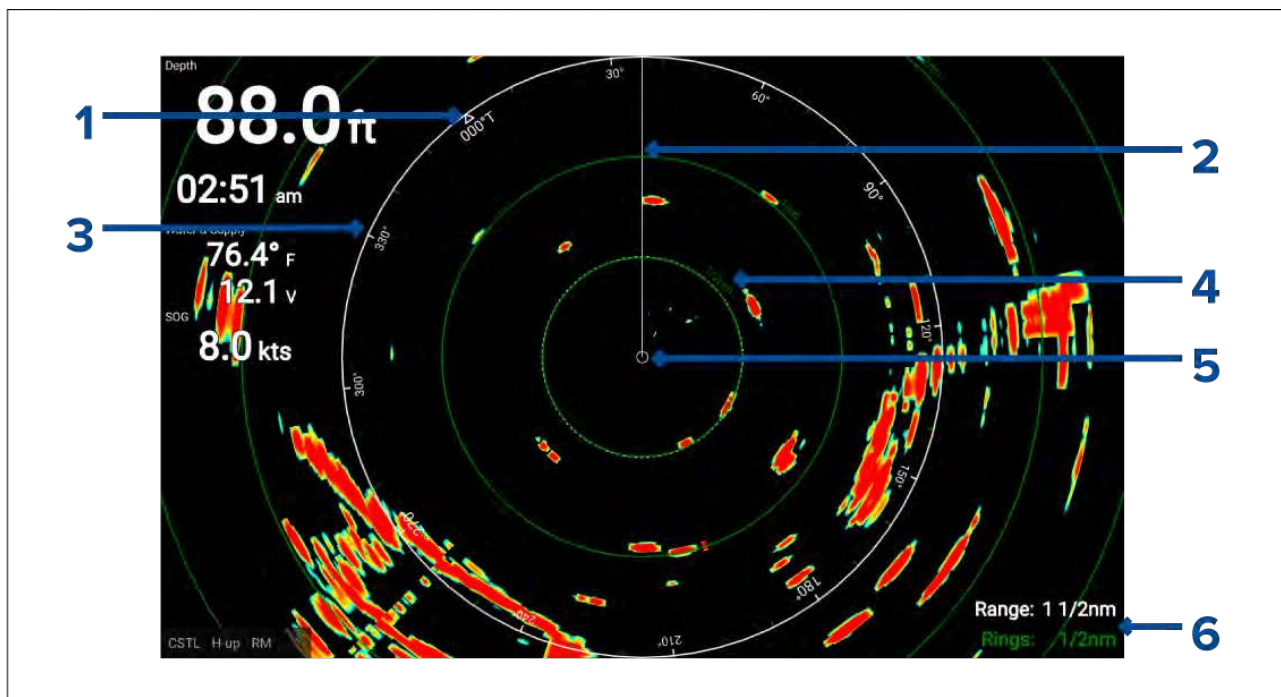
	SAR (Search and Rescue)		Virtual ATON
	SART (Search and Rescue Transponder)		

AIS target symbol status

	Lost (No border, crossed through)		Uncertain (Dashed outline)
	Dangerous and Uncertain (Dashed outline and Flashes Red)		
	Dangerous (Flashes Red)		ATON off position (Red border)

10.6 Range and bearing

The Radar app helps you identify a target's range (distance) and bearing from your vessel.



1. North indicator (Always points north).
2. SHM (Ships Heading Marker).
3. Bearing indicator ring (White).
4. Range rings with range indicator (Green).
5. Vessel position.
6. Current displayed bearing and range ring separation distance (Range: identifies the distance from your vessel to the bearing indicator ring. Rings: identifies the distance between each range ring).

The displayed range can be adjusted at anytime using the **Plus** and **Minus** buttons.

Range rings can be switched off from the Presentation tab: **Menu > Settings > Presentation > Range rings:**

You can also choose whether to display a numerical range indicator against each ring using the **Range ring labels:** option.

VRM (Variable Range Marker) / EBL (Electronic Bearing Line)

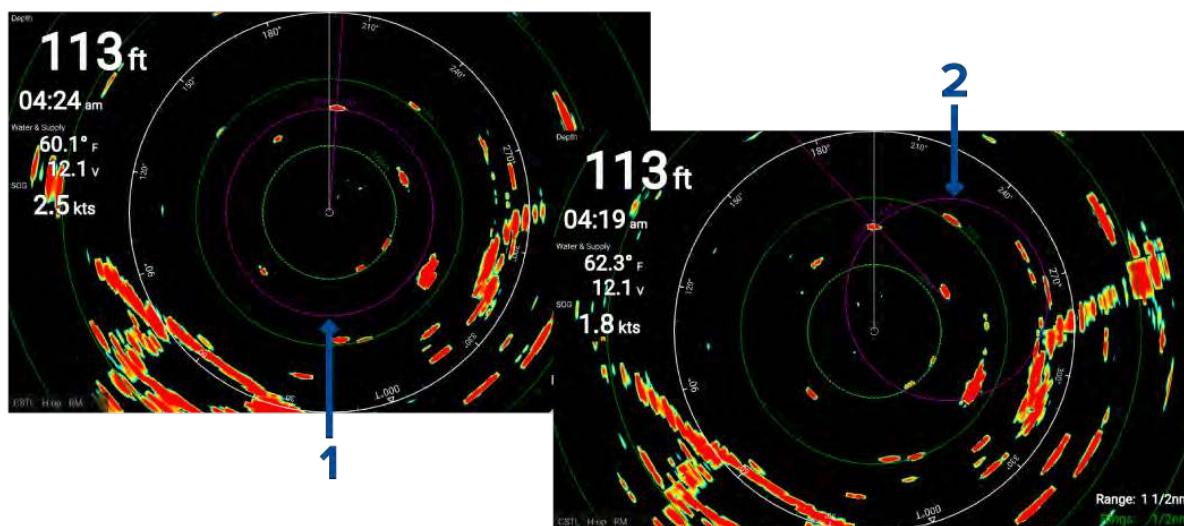
The VRM/EBL is used to determine range and bearing of radar objects.

Variable range marker (VRM)

The VRM is a circle centered on one object and then adjusted so that the circle meets a second object. The range between the 2 objects is displayed along the circle.

Electronic Bearing Line (EBL)

The EBL is a straight line from the center of the VRM to the edge of the screen and signifies the bearing from the object in the center of the VRM to the second object which the EBL should pass through.



1. **Centered VRM/EBL** By default when the VRM/EBL is enabled it will be centered around your vessel. You can use the 'centered' VRM/EBL to determine the range and bearing of an object in relation to your vessel.
2. **Floating VRM/EBL** You can adjust the VRM/EBL so that it is centered on another object, know as a 'floating' VRM/EBL. You can use the floating VRM/EBL to determine the range and bearing between the 2 objects.

The reference point used for the VRM/EBL can be configured to either measure bearing from true north / magnetic north or be a bearing relative to your vessel.

When set to **True/Mag** bearing is measured from the display's selected bearing reference (i.e.: True or Magnetic north). The display's bearing reference can be specified from the **Units** menu: **Homescreen > Units > Bearing**.

When set to **Relative** bearings are taken from the Ships Heading Marker (SHM).

Creating a centered VRM/EBL

To create a VRM/EBL centered on your vessel follow the steps below.

From the Radar app:

1. Press a button on the **Directional pad** to enter cursor mode.
2. Press the **OK** button.
The radar context menu is displayed.
3. Enable the **VRM/EBL** toggle switch.
4. Use the **Directional pad** to change the size of the VRM and location of the EBL.
5. Press the **Back** button to place the VRM/EBL.

Creating a floating VRM/EBL

To create a floating VRM/EBL follow the steps below

From the Radar app:

1. Press a button on the **Directional pad** to enter cursor mode.
2. Press the **OK** button.
The radar context menu is displayed.
3. Enable the **VRM/EBL** toggle switch.
4. Press and hold the **OK** button for approximately 3 seconds, until the VRM/EBL lines turn White.
5. Use the **Directional pad** to change the center location of the VRM.
6. Press and hold the **OK** button for approximately 3 seconds, until the VRM/EBL lines turn Blue.
7. Use the **Directional pad** to change the location where the VRM and EBL intersect.
8. Press the **Back** button to place the VRM/EBL.

Editing a VRM/EBL

Once the VRM/EBL has been placed you can adjust its size and position.

With a VRM/EBL displayed:

1. Press a button on the **Directional pad** to enter cursor mode.
2. Press the **OK** button.
The radar context menu is displayed.
3. Select **Edit VRM/EBL**.
4. Use the **Directional pad** to change the size of the VRM and location of the EBL.
5. Press and hold the **OK** button for approximately 2 seconds, until the VRM/EBL lines turn White to move the center of the VRM.
6. Press the **Back** button to place the VRM/EBL.

10.7 Guard zone alarm

The guard zone alerts you if radar returns (objects) are detected within the specified guard zone area.

The guard zone can be configured from the Guard zone menu:

The guard zone can be configured from the **Guard zone alarm** menu: **Menu > Guard zone alarm**.

Guard zone alarm

Warn me if any Radar returns are detected within the guard zone ☒

GUARD ZONE



☐ Circular



☒ Sector

Outer perimeter: **12.00nm**

Inner perimeter: **10.00nm**

Sector width: **075°**

Sector center: **000°**

Show zone while alarm active ☒

Sensitivity: 50%

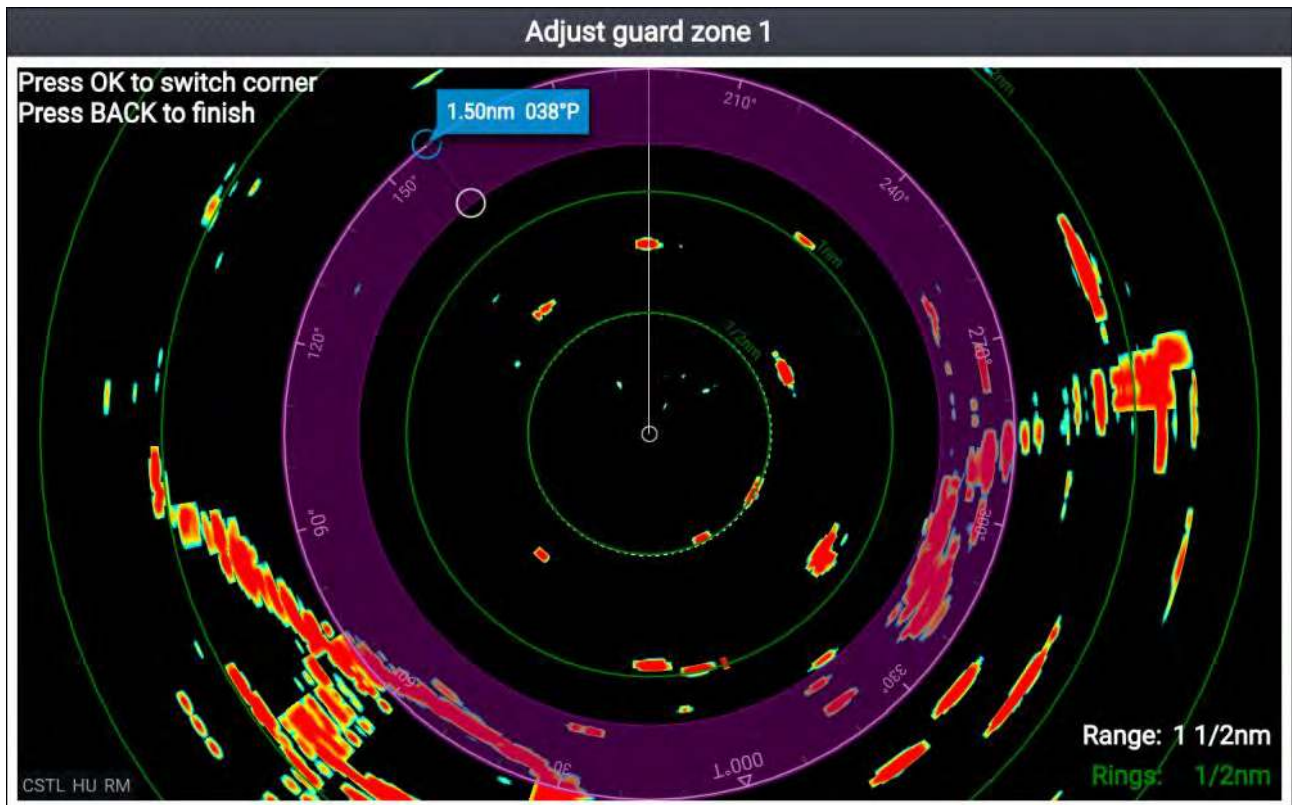
Adjust Zone

The guard zone can be configured as a sector or as a circle around your vessel.

If required, the sensitivity of the guard zone can be adjusted using the **Sensitivity** field. Sensitivity determines the size at which objects will trigger the alarm. A Higher sensitivity setting will detected smaller objects than a lower sensitivity setting.

Adjusting the guard zone alarm

The size and position of the guard zone can be adjusted.



1. Select **Adjust zone** from the guard zone alarm menu.
2. Use the **Directional pad** to adjust the size and position of the outer perimeter to the desired location.
3. Press the **OK** button to switch to the inner perimeter.
4. Use the **Directional pad** to adjust the size and position of the inner perimeter to the desired location.
5. Press the **Back** button to set the guard zone.

10.8 Sensitivity controls

Optimum performance is usually achieved using the default settings. You may be able to enhance the radar image using the sensitivity controls.

Sensitivity settings can be accessed by pressing the **OK** button while in motion mode, or the **Adjust sensitivity** menu: **Menu > Adjust sensitivity**.

Control	Description
	'G' Gain The control determines the signal strength at which target returns are shown onscreen. A higher value produces more target returns and noise onscreen.
	'R' Rain Precipitation appears on the radar screen as lots of small echoes which continuously change size, intensity and position. The rain control suppresses these echoes making it easier to identify real objects. The higher the rain control is set the more echoes will be suppressed.

Control	Description
	‘S’ Sea clutter Radar echoes from waves can clutter the radar screen. The sea control suppresses these echoes (for up to 5 nm depending on conditions) making it easier to identify real objects. The higher the sea control is set the more echoes will be suppressed.
	‘CG’ Color Gain The control sets the lower limit for the color used for the strongest target returns. All target returns above this value are displayed in the strongest color. Those with a weaker value are divided equally between the remaining colors.
	All to Auto Sets all Sensitivity settings to Auto .

10.9 Radar settings menu

The settings menu provides access to the Radar app’s settings and options.

Transmission tab

Description	Options
Scanner Displays the name of the connected radar scanner.	N/A

View & Motion tab

Description	Options
Orientation: The orientation setting determines how the radar image is displayed onscreen in relation to your vessel.	• Head-up — The top of the screen always points towards your vessel’s current heading and as your heading changes the radar image rotates accordingly. In head-up the motion mode is fixed to relative motion. • North-up — The top of the screen always points towards north and as your vessel’s heading changes the SHM rotates accordingly. • Course-up — In course-up the top of the screen always points towards your destination and as your heading changes the SHM rotates accordingly.
Motion mode Motion mode determines whether your vessel remains in a fixed position onscreen or moves relative to other moving objects. Note: In True motion mode the boat position is fixed to Full offset.	• Relative motion — The position of your vessel remains fixed onscreen and the radar image moves relative to your position. In relative motion mode you can adjust your vessel’s onscreen position using the boat position setting. • True motion — Stationary radar targets remain fixed and moving targets, including

Description	Options
	your vessel, move in true perspective to each other and to landmass. As your vessel's position reaches the edge of the screen, the image is redrawn to reveal the area ahead.
Boat position Boat position determines the position of your vessel onscreen. You can adjust the boat position to provide a greater distance ahead of your vessel. Note: Boat position can only be changed in Relative motion mode.	• Center — Vessel position is in the center of the screen • Partial offset — Vessel position is partially offset from the center to provide greater distance in front of your vessel. • Full offset — Vessel position is fully offset to provide the maximum distance in front of your vessel.

Presentation tab

Description	Options
Range rings: Enables and disables display of range rings.	• On • Off
Range ring labels: Enables and disables display of distance labels on each range ring.	• On • Off
Show AIS targets in radar: Enables and disables the display of AIS targets.	• On • Off
Silent mode (don't transmit my position): Enables and disables your vessel's transmission of AIS data.	• On • Off
Hide static targets: Enables and disables the display of static AIS targets.	• On • Off
Color palette: Allows selection of the color palette.	List of color palettes.

Advanced tab

Note: Under normal circumstances it should not be necessary to adjust Advanced settings.	
Description	Option
VRM/EBL reference: Determines the reference point used for VRM/EBLs.	• True/MagWhen set to True/Mag bearing is measured from the display's selected bearing reference (i.e.: True or Magnetic north). The display's bearing reference can be specified from the Units menu: Homescreen > Units > Bearing. • RelativeWhen set to Relative bearings are taken from the Ships Heading Marker (SHM).
Interference rejection: Suppresses interference from other close by radar scanners.	• On • Off

Description	Option
IR level: Determines the level of suppression used. The higher the suppression the less interference will be displayed. Note: Only available when Interference rejection is enabled.	• Level 1 (lowest suppression) • Level 2 • Level 3 • Level 4 • Level 5 (highest suppression)
Main Bang Suppression (MBS): MBS eliminates saturation which appears immediately around your vessel.	• On • Off
Target expansion: When enabled, increases the radar pulse length to provide larger target returns.	• On • Off
Bearing alignment: Enables you to align the radar image correctly in relation to your vessel's bow.	• 179.5° Port to 180° Starboard
Sea clutter curve (manual mode): When the sea sensitivity control is set to manual the sea clutter curve setting is available. Radar echoes produced by waves can make it difficult to distinguish between waves and real objects. these echoes are known as 'sea clutter'. The sea clutter curve setting adjusts your radar scanner's sensitivity to sea clutter. The higher setting will display less sea clutter.	• 1 • 2
Transmit frequency Changing the transmit frequency can reduce interference on the radar image by shifting the frequency band used by your radar scanner. Note: The transmit frequency settings is only not available when the radar range is set to less than 1/2 nm.	• Low • Normal • High
Reset advanced settings Resets the advanced settings to factory defaults.	N/A

Databoxes tab

Settings	Description
1:	Determines the data item displayed in databox 1.
2:	Determines the data item displayed in databox 2.
3:	Determines the data item displayed in databox 3.
4:	Determines the data item displayed in databox 4.
Reset all	Selecting will reset all databoxes to factory defaults.

Bearing alignment

The radar's bearing alignment ensures that radar echoes (objects) appear at the correct bearing relative to your vessel's bow. You should check the bearing alignment for any new installation.

Checking alignment

Align the bow with a stationary object between 0.25 nm and 2 nm away.

Reduce the gain sensitivity control to make the target as small as possible on the screen.

Note the position of the object on the screen. If the object is not under the ship's heading marker (SHM), then bearing alignment is required.

Adjusting alignment

Adjust the **Bearing alignment** setting until the target object appears under the SHM.

Bearing alignment setting can be accessed from the **Advanced** tab: **Menu > Advanced > Bearing alignment**.

Chapter 11: Troubleshooting

Chapter contents

- [11.1 Troubleshooting on page 150](#)
- [11.2 Power up troubleshooting on page 151](#)
- [11.3 GPS / GNSS troubleshooting on page 153](#)
- [11.4 Sonar troubleshooting on page 154](#)
- [11.5 Wi-Fi troubleshooting on page 156](#)

11.1 Troubleshooting

The troubleshooting information provides possible causes and corrective action required for common problems associated with installation and operation of your product.

Before packing and shipping, all Raymarine products are subjected to comprehensive testing and quality assurance programs. If you do experience problems with your product this section will help you to diagnose and correct problems in order to restore normal operation.

If after referring to this section you are still having problems with your product, please refer to the Technical support section of this manual for useful links and Raymarine Product Support contact details.

11.2 Power up troubleshooting

Product does not turn on or keeps turning off

Possible causes	Possible solutions
Blown fuse / tripped breaker.	1. Check condition of relevant fuses and breakers and connections, replace if necessary. (Refer to the <i>Technical Specification</i> section of your product's installation instructions for fuse ratings.) 2. If fuse keeps blowing check for cable damage, broken connector pins or incorrect wiring.
Poor / damaged / insecure power supply cable / connections	1. Check that the power cable connector is correctly orientated and fully inserted into the display connector and locked in position. 2. Check the power supply cable and connectors for signs of damage or corrosion, and replace if necessary. 3. With the display turned on, try flexing the power cable near to the display connector to see if this causes the unit to restart or lose power. Replace if necessary. 4. Check the vessel's battery voltage and the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion. Replace if necessary. 5. With the product under load, using a multi-meter, check for high voltage drop across all connectors / fuses etc, and replace if necessary.
Incorrect power connection	The power supply may be wired incorrectly, ensure the installation instructions have been followed.

Product will not start up (restart loop)

Possible causes	Possible solutions
Power supply and connection	See possible solutions from the table above, entitled 'Product does not turn on or keeps turning off'.
Software corruption	1. In the unlikely event that the product's software has become corrupted, try downloading and installing the latest software from the Raymarine website. 2. On display products, as a last resort, attempt to perform a 'Power on Reset'. Be aware that this will delete all settings / presets and user data (such as waypoints and tracks), and revert the unit back to factory defaults.

Performing a power on reset

As part of troubleshooting you may be requested to perform a power on reset.

Important:

Before performing a power on reset ensure you have backed up your settings and user data to a memory card.

With the display powered off:

1. Press and hold the **Home** button.
2. Press and hold the **Power** button until the display beeps.
3. Let go of the **Power** button.
4. When the Raymarine logo appears, let go of the **Home** button.
5. Use the **Down** button to highlight **Wipe data/factory reset**.
6. Press the **OK** button.
7. Use the **Down** button to highlight **Yes**.
8. Press the **OK** button.

The display will now be reset to factory default settings and all user data will be removed. 'Data wipe complete' is displayed at the bottom of the screen when the reset is finished.

9. Ensure **Reboot system now** is highlighted.
10. Press the **OK** button.

11.3 GPS / GNSS troubleshooting

Potential problems with the GPS / GNSS receiver and possible causes and solutions are described here.

Problem	Possible causes	Possible solutions
“No Fix” status icon is displayed. or display keeps losing position fix.	Geographic location or prevailing conditions preventing satellite fix.	Check periodically to see if a fix is obtained in better conditions or another geographic location.
	Display in poor location. For example: • Below decks. • Close proximity to transmitting equipment such as VHF radio.	Ensure the display has an unobstructed view of the sky.

Note:

A GPS / GNSS status screen is accessible from the display’s Homescreen. This provides satellite signal strength and other relevant information.

11.4 Sonar troubleshooting

Problems with the sonar and their possible causes and solutions are described here.

No transducer connected message displayed

Possible causes	Possible solutions
Incorrect display software version	Display software may be incompatible with your connected transducer. Check the Raymarine website and ensure that the display is running the latest available software.
Transducer not connected	Connect compatible transducer / Ensure that the transducer cable connector is fully inserted and locked in position and reboot the display.
Wrong transducer selected	Transducer selection is performed as part of the initial start up wizard, if an incorrect transducer was selected then the 'No transducer connected' message is displayed each time a new instance of the Fishfinder app is opened. To view the Fishfinder image, press the Menu button and select the fishfinder channel you want to view. To prevent further 'No transducer connected' warnings perform a factory reset and ensure the correct transducer is selected from the bottom of the Boat details page of the startup wizard.
Damaged display connector	Check that the transducer connector pins on the back of the display are not bent or broken / missing. If damage is detected replace the display or send it to an authorized service agent for repair.
Damaged transducer or cable	1. Check that the transducer cable connector is free from damage, is correctly orientated and fully inserted into the display and that the connector is locked in position. If damage is detected, replace the transducer. 2. Check the condition of the transducer and cabling for signs of damage. If damage is detected, replace the transducer.
Wrong transducer fitted	Check product and transducer documentation and ensure that the transducer is compatible with your system. Replace with a compatible transducer, if necessary.

Scrolling image is not being displayed or is intermittent

Possible causes	Possible solutions
Sonar ping disabled	Enable sonar ping from the shortcuts page by pressing the Power button and enabling Sonar ping .
Transducer location	Check that the transducer has been installed in accordance with the instructions provided with the transducer. The transducer must be installed where it is , always submerged, is parallel to the waterline and in an area free from turbulence and aeration.
Damaged display connector	Check that the transducer connector pins on the back of the display are not bent or broken / missing. If damage is detected replace the display or send it to an authorized service agent for repair.

Possible causes	Possible solutions
Damaged transducer or cable	1. Check that the transducer cable connector is free from damage, is correctly orientated and fully inserted into the display and that the connector is locked in position. If damage is detected, replace the transducer. 2. Check the condition of the transducer and cabling for signs of damage. If damage is detected, replace the transducer.
Fouled transducer	Check transducer condition, ensuring it is free from debris/fouling. If necessary, clean or replace your transducer. After cleaning or replacement coat the transducer using a water-based anti-fouling paint.
Wrong transducer fitted	Check product and transducer documentation and ensure that the transducer is compatible with your system.
Proximity of high power cables	If the transducer cable runs too close to engine and other high power cables the transducer signal may be interrupted causing loss of transducer connection and or electrical noise to appear onscreen. These issues may be more prevalent at higher engine revs. Move transducer cable as far away from high power cables as possible.

Poor / problematic image

Possible causes	Possible solutions
Poor and problematic images can be caused by the same issues as when no depth reading or bottom lock is possible. In addition to the solutions listed under 'No depth reading / lost bottom lock' try the following:	
Vessel stationary	Fish arches are not displayed if the vessel is stationary; fish will appear on the display as straight lines.
Cursor mode is active	The scrolling screen is paused in cursor mode, press the Back button to resume scrolling.
Sensitivity settings may be inappropriate for present conditions.	Check and adjust sensitivity settings or perform a Sonar reset.
Turbulence around the transducer at higher speeds may affect transducer performance	Slow vessel speed and recheck.
Interference from another transducer	1. Turn off the transducer causing the interference. 2. Reposition the transducers so they are farther apart.

11.5 Wi-Fi troubleshooting

Before troubleshooting problems with your Wi-Fi connection, ensure that you have followed the Wi-Fi location requirements guidance provided in the relevant installation instructions and performed a power cycle/reboot of the devices you are experiencing problems with.

Cannot find router network

Possible cause	Possible solutions
Router out of range or signal blocked.	• Ensure router is broadcasting and in range of your display. If necessary, move router and display closer together and then turn the display's Wi-Fi off and back on again. • If possible, remove any obstructions and then turn the display's Wi-Fi off and back on again.
Display Wi-Fi disabled.	Ensure Wi-Fi is enabled on the Display.
Router problem.	If possible, power cycle the router and then turn the display's Wi-Fi off and back on again.
Device not broadcasting.	1. If possible, enable broadcasting in the router's settings. 2. You may still be able to connect to the router, when it is not broadcasting, by manually entering the router's network name and password in the Display's Wi-Fi settings page.
Router's Wi-Fi network is incompatible	The Display's Wi-Fi can only connect to 2.4 GHz networks.

Cannot connect to network

Possible cause	Possible solutions
Trying to connect to the wrong Wi-Fi network.	Ensure you are trying to connect to the correct Wi-Fi network; the Wi-Fi network's name can be found in the router's settings.
Incorrect network credentials.	Ensure you are using the correct password; the Wi-Fi network's password can be found in the router's settings.
Bulkheads, decks and other heavy structure can degrade and even block the Wi-Fi signal. Depending on the thickness and material used, it may not always be possible to pass a Wi-Fi signal through certain structures.	1. Try repositioning the display and if possible the router, so the structure is removed from the direct line of sight between the devices.
Interference being caused by other Wi-Fi enabled or older Bluetooth enabled devices (Bluetooth and Wi-Fi both operate in the 2.4 GHz frequency range, some older Bluetooth devices may interfere with Wi-Fi signals.)	1. If possible, change the Wi-Fi Channel that your router is using and retry the connection. You can use free Wi-Fi analyzer apps on a smart device to help you choose a better channel (channel with least traffic). 2. Temporarily disable each wireless device in turn until you have identified the device causing the interference.

Possible cause	Possible solutions
Interference caused by other devices that use the 2.4 GHz frequency. See following list of some common devices that use the 2.4 GHz frequency: • Microwave ovens • Fluorescent lighting • Cordless phones / baby monitors • Motion sensors	Temporarily switch off each device in turn until you have identified the device causing the interference, then remove or reposition the offending device(s).
Interference caused by electrical and electronic devices and associated cabling could generate an electromagnetic field which may interfere with the Wi-Fi signal.	Temporarily switch off each item in turn until you have identified the device causing the interference, then remove or reposition the offending device(s).

Connection extremely slow and / or keeps dropping out

Possible cause	Possible solutions
Wi-Fi performance degrades over distance, so products farther away will receive less network bandwidth. Products installed close to their maximum Wi-Fi range will experience slow connection speeds, signal dropouts or not being able to connect at all.	Move display closer to router.
Interference being caused by other Wi-Fi enabled or older Bluetooth enabled devices (Bluetooth and Wi-Fi both operate in the 2.4 GHz frequency range, some older Bluetooth devices may interfere with Wi-Fi signals.)	1. If possible, change the Wi-Fi Channel that your router is using and retry the connection. You can use free Wi-Fi analyzer apps on a smart device to help you choose a better channel (channel with least traffic).. 2. Temporarily switch off each item in turn until you have identified the device causing the interference, then remove or reposition the offending device(s).
Interference from devices on other vessels. When in close proximity to other vessels (for example, when moored up in a marina), many other Wi-Fi signals may be present.	1. If possible, change the Wi-Fi Channel that your router is using and retry the connection. You can use free Wi-Fi analyzer apps on a smart device to help you choose a better channel (channel with least traffic). 2. If possible, move your vessel to a location with less Wi-Fi traffic.

Network connection established but no data

Possible cause	Possible solutions
No internet connection to router.	Ensure that your display is connected to a network with an internet connection.

Chapter 12: Technical support

Chapter contents

- [12.1 Raymarine product support and servicing on page 160](#)
- [12.2 Learning resources on page 163](#)

12.1 Raymarine product support and servicing

Raymarine provides a comprehensive product support service, as well as warranty, service, and repairs. You can access these services through the Raymarine website, telephone, and e-mail.

Product information

If you need to request service or support, please have the following information to hand:

- Product name.
- Product identity.
- Serial number.
- Software application version.
- System diagrams.

You can obtain this product information using diagnostic pages of the connected MFD.

Servicing and warranty

Raymarine offers dedicated service departments for warranty, service, and repairs.

Don't forget to visit the Raymarine website to register your product for extended warranty benefits: <http://www.raymarine.co.uk/display/?id=788>.

Region	Contact
United Kingdom (UK), EMEA, and Asia Pacific	• E-Mail: emea.service@raymarine.com • Tel: +44 (0)1329 246 932
United States (US)	• E-Mail: rm-usrepair@flir.com • Tel: +1 (603) 324 7900

Web support

Please visit the “Support” area of the Raymarine website for:

- **Manuals and Documents** — <http://www.raymarine.com/manuals>
- **Technical support forum** — <http://forum.raymarine.com>
- **Software updates** — <http://www.raymarine.com/software>

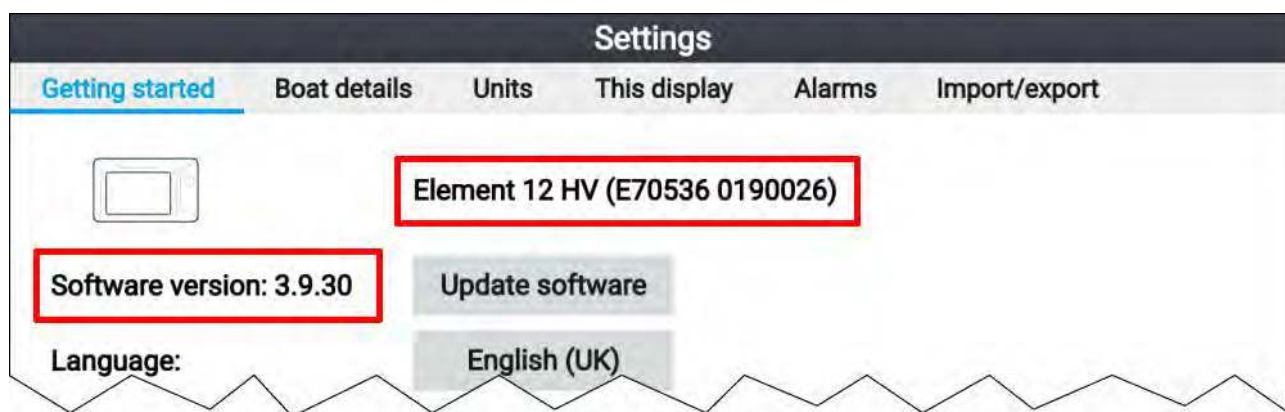
Worldwide support

Region	Contact
United Kingdom (UK), EMEA, and Asia Pacific	• E-Mail: support.uk@raymarine.com • Tel: +44 (0)1329 246 777
United States (US)	• E-Mail: support@raymarine.com • Tel: +1 (603) 324 7900 (Toll-free: +800 539 5539)
Australia and New Zealand (Raymarine subsidiary)	• E-Mail: aus.support@raymarine.com • Tel: +61 2 8977 0300
France (Raymarine subsidiary)	• E-Mail: support.fr@raymarine.com • Tel: +33 (0)1 46 49 72 30
Germany (Raymarine subsidiary)	• E-Mail: support.de@raymarine.com • Tel: +49 (0)40 237 808 0
Italy (Raymarine subsidiary)	• E-Mail: support.it@raymarine.com • Tel: +39 02 9945 1001
Spain (Authorized Raymarine distributor)	• E-Mail: sat@azimut.es • Tel: +34 96 2965 102
Netherlands (Raymarine subsidiary)	• E-Mail: support.nl@raymarine.com • Tel: +31 (0)26 3614 905

Region	Contact
Sweden (Raymarine subsidiary)	- E-Mail: support.se@raymarine.com - Tel: +46 (0)317 633 670
Finland (Raymarine subsidiary)	- E-Mail: support.fi@raymarine.com - Tel: +358 (0)207 619 937
Norway (Raymarine subsidiary)	- E-Mail: support.no@raymarine.com - Tel: +47 692 64 600
Denmark (Raymarine subsidiary)	- E-Mail: support.dk@raymarine.com - Tel: +45 437 164 64
Russia (Authorized Raymarine distributor)	- E-Mail: info@mikstmarine.ru - Tel: +7 495 788 0508

Identify display variant and software version

Refer to the Getting started menu: **Homescreen > Settings > Getting started** on your display to identify product variant and current software version.



Viewing product information

You can view detailed product information about your display.

Product information

Element 12 HV E70536 0190026

Save data

Product info

CPU revision:quad core 1GB

Hardware revision:7

Product family:Element

Product ID:E70536

Supply voltage:14.1V

System Up Time:1 hours

Cartography info

CMAP base map version:1.0-00006

Navionics base map version:1.0-00006

Rx5 base map version:1.0-00006

Software info

Application version:3.9.57

CMAP library version:CI-2.0.0R SDK-15.0.0R (04/09/2017)

Crash logs:1

Kernel version:3.18.31-perf (Fri Apr 5 05:39:28 BST 2019)

Navionics library version:NI_01.03.40.21_UV_2337_CI_03.09

Platform version:0.00.111

Power micro version:200

1. Select the **Settings** icon from the **Homescreen**.
2. Select the **This display** tab.
3. Select **About this product** from the **DIAGNOSTICS** section.
4. If the **Save data** button is highlighted press the **Left** button.
5. Use the **Up** button and **Down** button to scroll through the available information.

Saving product information

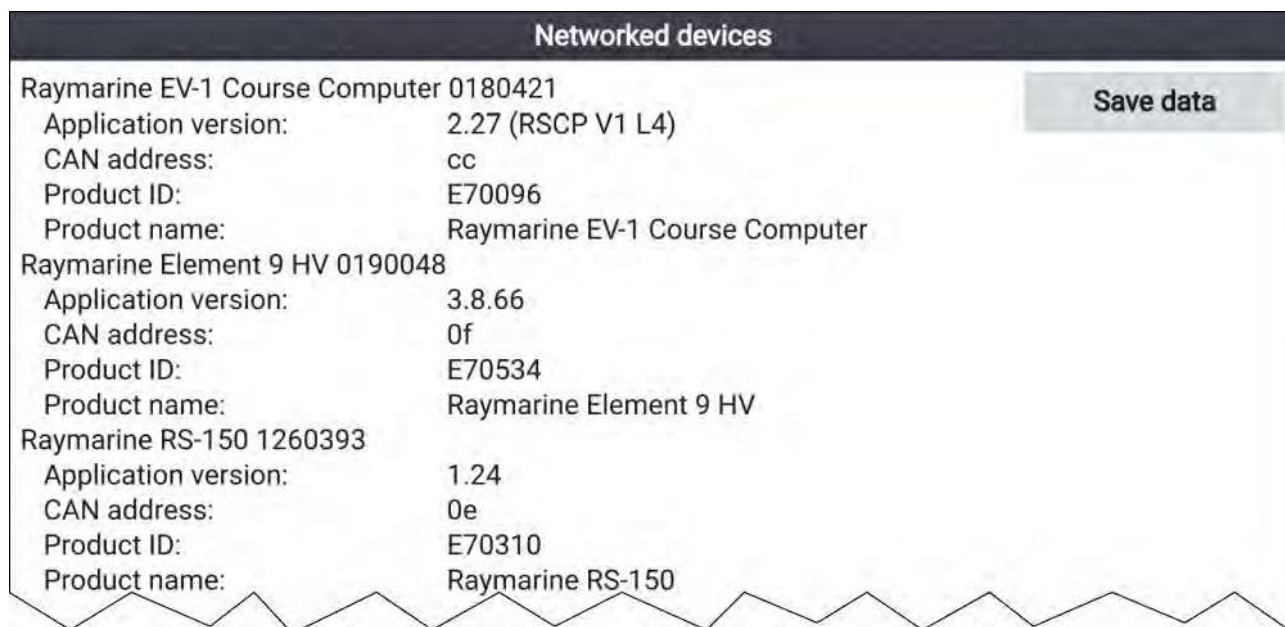
The information displayed on the Product information page can be saved to memory card.

With the Product info page displayed:

1. Use the **Right** button to select **Save data**.
2. Enter a filename for the data using the onscreen keyboard, or keep the default filename.
3. Select **Save**.
4. Select **Eject card** to safely remove the memory card, or select **OK** to return to the **Product information** page.

Viewing information about networked products

Product information for networked products can be viewed from the Networked devices list.



From the Homescreen:

1. Select **Settings**.
2. Select **This display**.
3. Select **Networked devices**.
Product information for compatible connected products is displayed.
4. If required, use the **Up** and **Down** buttons to scroll through the list of product information.
5. Press the Right button to highlight the **Save data** button, to save product information to a memory card.

Saving system logs

You can save system logs to memory card for diagnostic purposes.

From the Homescreen settings menu: **Homescreen > Settings**.

1. Select **This display**.
2. Select **Logs**.
The Logs pop-over menu is displayed. The pop-over menu will identify whether there are any logs that can be saved.
3. Select **Save system logs**.

12.2 Learning resources

Raymarine has produced a range of learning resources to help you get the most out of your products.

Video tutorials

	Raymarine official channel on YouTube: • YouTube LightHouse™ 3 tips and tricks: • Raymarine website
	Video Gallery: • Raymarine website

Note:

- Viewing the videos requires a device with an Internet connection.
- Some videos are only available in English.

Training courses

Raymarine regularly runs a range of in-depth training courses to help you make the most of your products. Visit the Training section of the Raymarine website for more information:

- <http://www.raymarine.co.uk/view/?id=2372>

Technical support forum

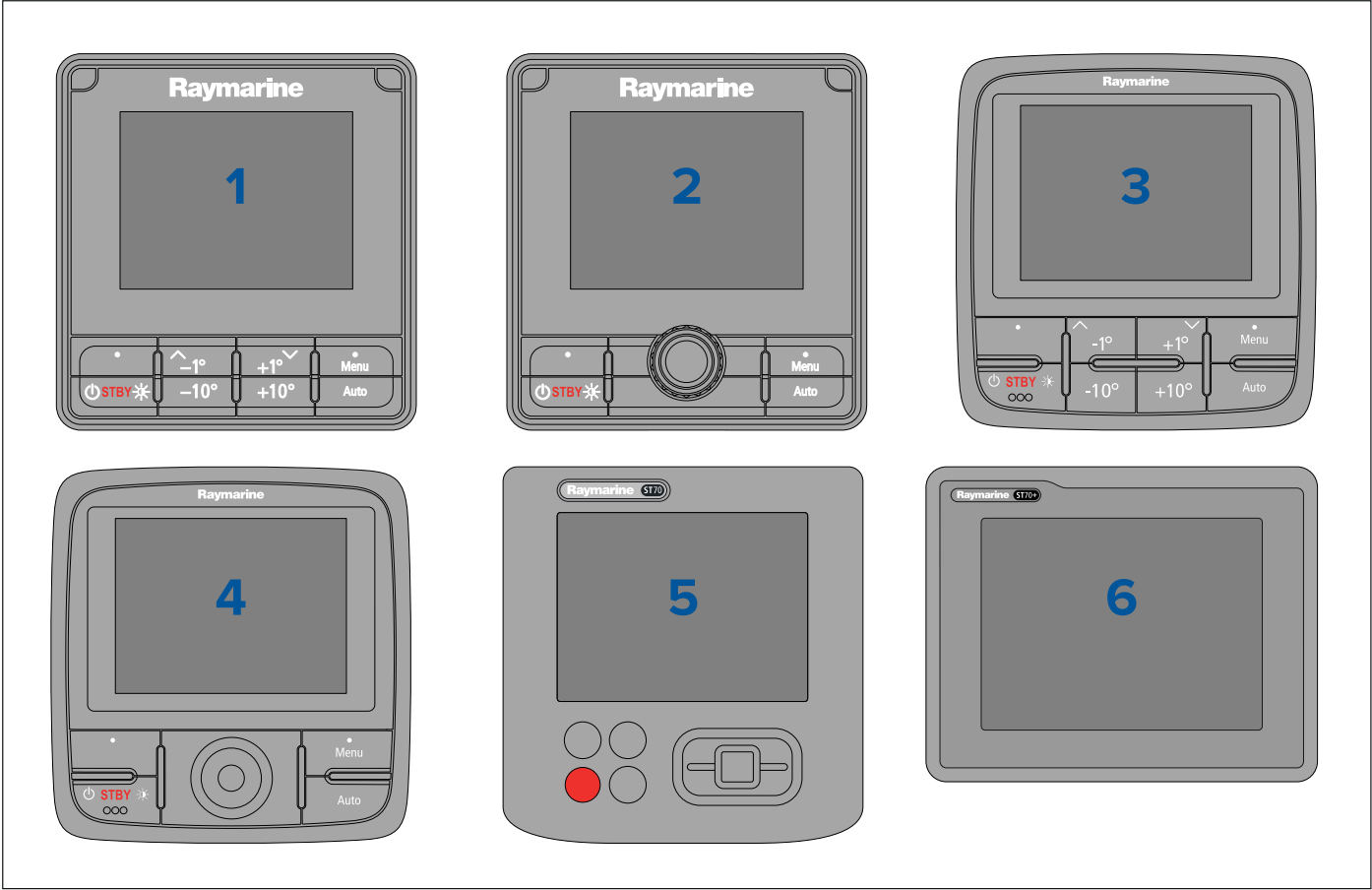
You can use the Technical support forum to ask a technical question about a Raymarine product or to find out how other customers are using their Raymarine equipment. The resource is regularly updated with contributions from Raymarine customers and staff:

- <http://forum.raymarine.com>

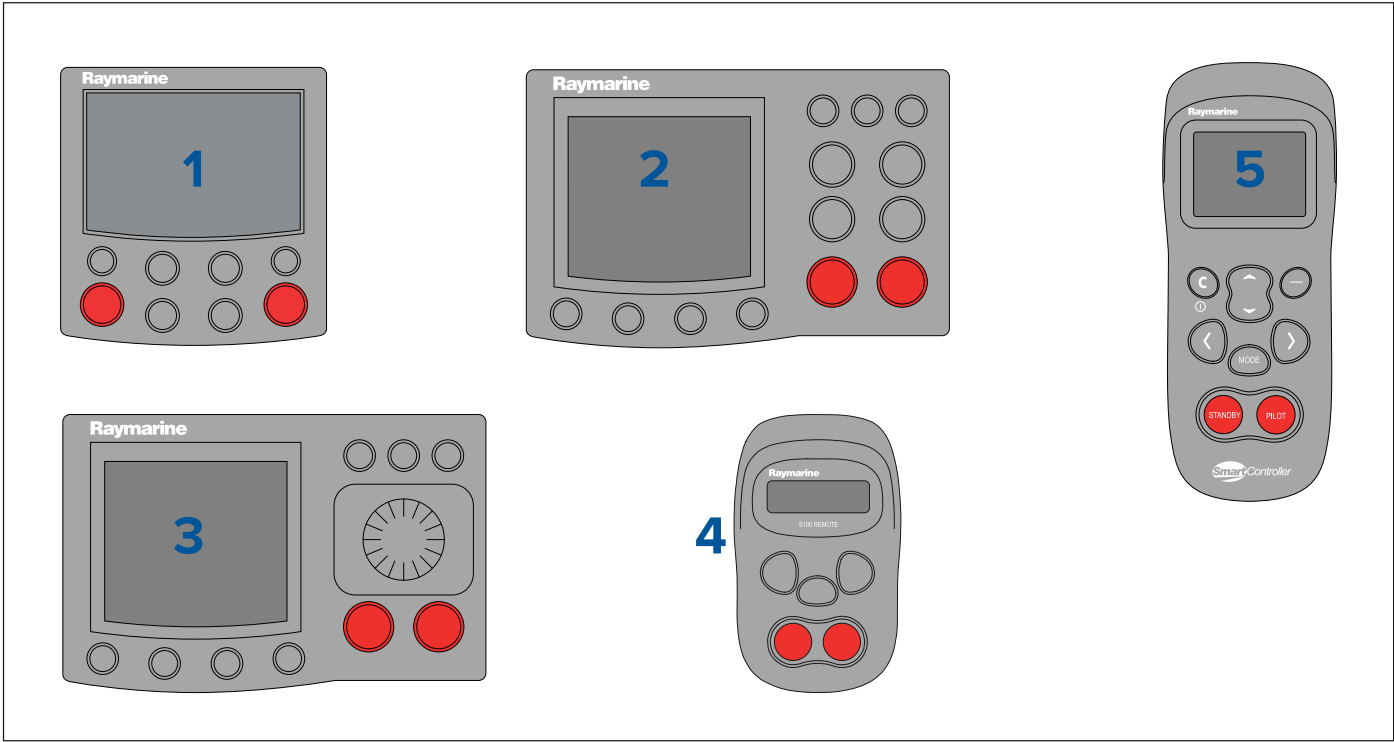
Appendix A Compatible autopilot controllers

A SeaTalkng[®] autopilot controller is required to operate your autopilot system. A SeaTalk[®] autopilot controller can be used when connected via a SeaTalk to SeaTalkng[®] converter, but may have limited functionality. More than 1 autopilot controller can be used to control your autopilot system.

SeaTalkng[®] autopilot controllers



	Product details		Product details
1	p70s (E70328)	2	p70Rs (E70329)
3	p70 (E22166)	4	p70R (E22167)
5	ST70 (E22105)	6	ST70+ (E22115)



	Product details		Product details
1	ST6002 (E12098–P / E12100–P)	2	ST7002 (E12099–P / E12182)
3	ST8002 (E12119–P / E12183)	4	S100 (repeat controller only) (E15024)
5	SmartController (repeat controller only) (E15023)		

Appendix B NMEA 2000 PGNs

PGN	Description	Transmit (Tx) / Receive (Rx)
59392	ISO Acknowledgement	Tx / Rx
59904	ISO Request	Tx / Rx
60160	ISO Transport Protocol, Data Transfer	Rx
60416	ISO Transport Protocol, Connection Management — BAM group function	Rx
60928	ISO Address Claim	Tx / Rx
65240	ISO Commanded Address	Rx
126208	NMEA - Group Function	Tx / Rx
126464	PGN Lists	Tx / Rx
(1)126992	System Time	Tx / Rx
126993	Heartbeat	Tx / Rx
126996	Product Information	Tx / Rx
126998	Configuration Information	Tx / Rx
127237	Heading / track Control	Rx
127245	Rudder	Rx
127250	Vessel Heading	Rx
127251	Rate of Turn	Rx
127258	Magnetic Variation	Tx
127488	Engine Parameters, Rapid Update	Rx
127489	Engine Parameters, Dynamic	Rx
127493	Transmission Parameters, Dynamic	Rx
127496	Trip Fuel Consumption, Vessel	Rx
127497	Trip Fuel Consumption, Engine	Rx
127498	Engine Parameters, Static	Rx
127503	AC Input Status — DEPRECATED	Rx
127504	AC Output Status — DEPRECATED	Rx
127505	Fluid Level	Rx
127506	DC Detailed Status	Rx
127507	Charger Status — DEPRECATED	Rx
127508	Battery Status	Rx
127509	Inverter Status — DEPRECATED	Rx
128259	Speed Water Referenced	Rx
128267	Water Depth	Rx
(1)129026	COG & SOG, Rapid Update	Tx / Rx
(1)129029	GNSS Position Data	Tx / Rx
(1)129033	Local Time Offset	Tx
129038	AIS Class A Position Report	Rx
129039	AIS Class B Position Report	Rx
129040	AIS Class B Extended Position Report	Rx
129041	AIS Aids To Navigation (AtoN) Report	Rx
(1)129044	Datum	Tx / Rx
129283	Cross Track Error	Tx / Rx

PGN	Description	Transmit (Tx) / Receive (Rx)
129284	Navigation Data	Tx / Rx
129285	Navigation — Route / WP information	Tx / Rx
129291	Set & Drift, Rapid Update	Tx / Rx
129301	Time to / from Mark	Rx
(1)129539	GNSS DOPs	Tx / Rx
(1)129540	GNSS Sats in View	Tx / Rx
(1)129542	GNSS Pseudorange Noise Statistics	Tx / Rx
(1)129547	GNSS Pseudorange Error Statistics	Tx / Rx
129793	AIS UTC and Date Report	Rx
129794	AIS Class A Static and Voyage Related Data	Rx
129798	AIS SAR Aircraft Position Report	Rx
129801	AIS Addressed Safety Related Message	Rx
129802	AIS Safety Related Broadcast Message	Rx
129809	AIS Class B “CS” Static Data Report, Part A	Rx
129810	AIS Class B “CS” Static Data Report, Part B	Rx
130064	Route and WP Service — Database List	Tx / Rx
130070	Route and WP Service — WP Comment	Tx / Rx
130072	Route and WP Service — Database Comment	Tx / Rx
130074	Route and WP Service — WP List — WP Name & Position	Tx / Rx
130306	Wind Data	Rx
130310	Environmental Parameters — DEPRECATED	Rx
130311	Environmental Parameters — DEPRECATED	Rx
130312	Temperature — DEPRECATED	Rx
130576	Trim Tab Status	Rx
130577	Direction Data	Rx

Note:

- (1) Only transmitted to DSC VHF radios when **Send GPS to VHF:** setting is enabled, from the GPS / GNSS Settings menu.

Appendix C Document change history

Document	Changes
Document: 81388–4 Software version: LHS 3.10.10 Date: 01–2020	• Updated new features to reflect LHS 3.10.10. • Updated startup wizard details to include list of activities and information regarding ice fishing. Removed requirement for a factory reset if wrong transducer is selected. • Added transducer selection to boat details settings. • Added app page icons for different fishfinder channels and views to homescreen chapter. • Added descriptions of different fishfinder channel modes to fishfinder chapter. • Moved list of compatible autopilot controllers to the appendix.
Document: 81388–3 Software version: LHS 3.9.98 Date: 05–2019	• Updated new features to reflect LHS 3.9.98. • Updated compatible displays to include S variants and non-Wi-Fi SKUs. • Updated shortcuts menu details to include Radar transmission controls. • Removed limited list of SeaTalkng products that can be updated. • Added Quantum pairing procedure to Set up chapter. • Added Radar app chapter. • Added Radar selection to start up wizard. • Updated data item names. • Added Waypoint sharing details. • Added autopilot commands information. • Added new rolling road page details to Dashboard app. • Updated supported PGN list.
Document: 81388–2 Software version: LHS 3.9.40 Date: 04–2019	• Updated to include new support for AIS. • Updated Document conventions to include “enable” and “disable”. • Added new document change history to appendix. • Updated LoU and software and hardware info screenshots to latest version. • Updated applicable software version to 3.9. • Updated viewing product information task. • Updated to include details of MDS support. • Added details for new support of Wind data. • Added Estonian User Interface language. • Updated available data items to include wind and speed data. • Added details for wind and navigation dials in Dashboard app. • Updated list of supported PGNs. • Updated Chart app chapter to include Tides mode. • Updated Fishfinder app chapter to differentiate between HV and S variant displays.
Document: 81388–1 Software version: LHS 3.8.64 Date: 03–2019	• Initial release

Index

A

Activity.....	28
AIS.....	79, 136
Context menu.....	80, 136
Silent mode.....	146
Static targets.....	146
Target symbols.....	83, 139
Vectors.....	81, 137
Alarm.....	
Radar guard zone.....	143
Alarms.....	51
Acknowledgement.....	52
Dangerous.....	52
Dangerous AIS target.....	80, 137
Warning.....	52
Align to GPS.....	39
App pages.....	
Customize.....	47
Delete.....	47
New.....	48
Quicklaunch.....	47
Rename.....	47
Applications.....	45
Apps.....	45
Chart.....	45
Dashboard.....	45
Fishfinder.....	45
Radar.....	45
Automatic Identification System, <i>See</i> AIS.....	
Autopilot commands.....	84
Autopilot controllers, SeaTalk®.....	165–166
Autopilot controllers, SeaTalkng®.....	165

B

Back.....	
Button.....	26
Back up.....	
User data.....	37, 70
Backup.....	
Routes.....	37, 71
Tracks.....	37, 71
Waypoints.....	37, 71
Battery.....	
Data items.....	19, 122
Battery selection.....	54, 125
Black water tank selection.....	54, 125
Boat.....	
Data items.....	20, 122
Boat details.....	28, 54, 125
Boat position.....	78
Brightness.....	31

C

Cartography.....	95
Selection.....	76
Chart.....	97
2D shading.....	98
Aerial coverage.....	96
Aerial layer.....	96

Auto range motion.....	77
Boat position.....	77, 96
Boat type.....	96
Center position.....	77
Contours.....	97
Course-up.....	77
Current animation.....	91
Current graph.....	94
Current graphic.....	94
Current station.....	94
Detailed mode.....	76
Find nearest.....	88
Fishing mode.....	76
Full offset.....	77
Goto.....	85
Head-up.....	77
Icon type.....	96
Motion mode.....	77, 96
Nav marks.....	97
North-up.....	77
Object cursor.....	78
Orientation.....	77, 96
Partial offset.....	77
RealBathy.....	89
Record depth data.....	97
Relative motion.....	77
Running mode.....	77, 96
Search for objects.....	88
Set up.....	96
Shallow area.....	97
Simple mode.....	76
Tide animation.....	91
Tide bar.....	93
Tide graph.....	93
Tide station.....	92
Tides.....	77, 97
Tides mode.....	91
True motion.....	77
Chart app.....	
AIS context menu.....	80
Context menu.....	75
Cursor mode.....	75
Motion mode.....	75
Navigation.....	85
Overview.....	74
Panning.....	75
Placing waypoint.....	75
Range.....	75
Chart detail.....	96
Chart range.....	74
Chart,.....	
Modes.....	76
COG line.....	74
COG vector.....	78
Color theme.....	31–32
Community edits.....	97
Compass offset.....	39
Confirming selection.....	26
Connections.....	
Radar.....	41, 131
Contact details.....	160
Context menu.....	
AIS target.....	80, 136
Chart app.....	75

Radar app	135
Creation.....	68, 87
Cross track error.....	85
Cursor mode	
Activating.....	26
Positioning.....	26

D

Dangerous AIS target.....	80, 137
Dashboard	
Engine RPM limits	127
Pages	119
Pages tab.....	125
Show / Hide pages	119
Dashboard app.....	118
Rolling road.....	120
Data items	
Battery	19, 122
Boat	20, 122
Depth	20, 122
Display	20, 122
Distance.....	20, 123
Engines	20, 123
Environment.....	21, 123
Fuel.....	20, 123
GPS / GNSS	21, 124
Heading	21, 124
Navigation.....	21, 124
Speed	21, 124
Time.....	21, 124
Wind.....	22, 124
Data sources	40
Selection.....	40
Databoxes	18, 74
Edit.....	19
Hide	19
Show.....	19
Deep contour	97
Deep water color.....	97
Depth	
Data items.....	20, 122
Depth offset.....	30, 110
Destination line.....	74
Destination waypoint.....	74
Diagnostics.....	163
Directional pad	26
Display	
Buttons.....	26
Controls	26
Data items.....	20, 122
Distance	
Data items.....	20, 123
Document conventions	18
Documentation	14

E

Eject SD card.....	31
Engine connection wizard	54, 125
Engine identification wizard	30
Engine selection.....	54, 125
Engines	
Data items.....	20, 123

Environment	
Data items.....	21, 123
Export	
Routes.....	37, 71
Tracks	37, 71
User data	37, 70
Waypoints	37, 71

F

Factory reset	151
Fishfinder	
2nd echo rejection.....	115
A-scope.....	113
All to Auto	109
app icons	46
app pages.....	46
Channels.....	104–105
Color palette	111–113
Color threshold	111–112, 114
Current temperature	112–113
Databoxes.....	115
Depth lines.....	112–113
Fish depth labels.....	115
Fish detection	115
Fish detection sensitivity.....	115
Fish icons.....	115
Gain	109
Ice fishing modes.....	105
Intensity	109
Interference rejection	114
Manual temperature range	112–113
Maximum temperature.....	112–113
Minimum temperature.....	112–113
No transducer	103
Range lines	111
RealVision modes	104
Scroll back	107
Scroll speed.....	111–112, 114
Sensitivity controls.....	108
Settings menu.....	110
SideVision modes	105
Sonar display menu	110–113
Sounder menu	114
Sounder reset	115
Surface filter.....	109
Temperature graph.....	112–113
Transducer	114
Transducer alignment.....	114
Transducer menu.....	114
Transducer offset.....	114
Transducer ping.....	114
Transducer ping rate	114
Transducer temperature	114
Transducer temperature calibration	114
Transducer temperature sensor	114
Waypoint.....	107
Fishing zone	98
Follow	86
Fresh water tank selection	54, 125
Fuel	
Data items.....	20, 123
Fuel tank selection	54, 125

G

Goto waypoint	85
GPS / GNSS	
COG / SOG filter	50
Data items.....	21, 124
Differential positioning.....	49
Internal.....	50
Restart.....	50
Settings.....	49
GPS/GNSS	
Fix	48
Satellite status.....	48
Gray water tank selection.....	54, 125
Guard zone alarm	143

H

Heading	
Data items.....	21, 124
High res bathy	97
Home	
Button	26
Homescreen.....	44
Navigation.....	26
Show.....	26

I

Ice fishing	
A-scope.....	46, 105
app pages.....	46
Ice fishing	
Trail	46
Radial	46, 105
Trail / A-scope.....	105
Trail / radial	105
Import	
Routes.....	30, 38, 71
Tracks	30, 38, 71
User data	37, 70
Waypoints	30, 38, 71

L

Language	28
Languages.....	53
Selection.....	53
LightHouse™ 3	
Tips and Tricks	164
LightHouse Sport	
Compatible Displays	14
Limitations on Use	45
Limitations on Use (LoU).....	45
Live well tank selection	54, 125

M

Memory cards	
Compatibility.....	32
Menu	
Button	26
Closing.....	26
Opening.....	26
Menus	

Settings.....	18
Types	23
MicroSD	
Adaptor	33
inserting into display.....	34
Removal	34
Minus	
Button	26
Multiple data sources (MDS).....	40

N

N2K PGNs.....	167
Navigation	
Data items.....	21, 124
Goto	85
Networked devices	35
New features	14
NMEA 2000	
PGN support	167
Notifications.....	52

O

OK	
Button	26

P

Pairing	
Quantum radar.....	41, 131
PGN	167
Plus	
Button	26
Power	
Button	27
Power consumption.....	27
Power off	27, 31
Power on	27
Power troubleshooting	151
Product support.....	160

Q

Quicklaunch	
Button assignment.....	27
Buttons.....	26
Quicklaunch buttons	47

R

radar	
MBS	147
Settings.....	145
Target expansion	147
Radar	
AIS	146
Bearing alignment.....	147–148
Boat position.....	146
Coastal mode.....	135
Color Gain.....	145
Color palette	146
Compatible scanners.....	134
Gain control	144

Guard zone	144
Guard zone alarm	143
Harbor mode	135
Interference rejection	146
IR level	147
Modes	135
Motion mode	146
Off	132
Off/Not connected	132
Offshore mode	135
Orientation	145
Powering off	133
Rain suppression	144
Range and Bearing	141
Range ring labels	146
Range rings	146
Reset advanced settings	147
scanner	145
Sea clutter	145, 147
Sensitivity controls	144
Standby	132–133
Transmit frequency	147
Transmitting	133
VRM/EBL	142, 146
Weather mode	135
Radar app	133
Add to homescreen	130
AIS context menu	136
AIS targets	136
Context menu	135
Cursor mode	135
Guard zone	134
Homescreen icon	130
Motion mode	134–135
Panning	135
Placing waypoint	134–135
Range	135
Sensitivity controls	134
VRM/EBL	134
Radar installation	28
Radar transmission	31
Enable/Disable	32
Range in	26
Range out	26
RealBathy	89, 98
Chart	90
Density	90
Height correction	90
RealBathy	90
Visibility	90
Waterline to tdc	90
RealVision	
Above	104
Follow	104
Offset port	104
Offset starboard	104
Recovery mode	151
Reference period	78
Restore	
Routes	30, 38, 71
Tracks	30, 38, 71
Waypoints	30, 38, 71
Rolling road	120
Route	64, 74

Add waypoint	68
Building	64
Capacity	64
Creation	64
Export	64
Follow	67–68, 86
Follow from here	86
Import	64
List	66, 69
Management	66
Menu	66, 69
Plan	67
Remove waypoint	68
Reverse	67
Route options	68

S

Safe depth, minimum	54, 125
Safe distance	81, 137
Safe height, minimum	54, 125
Safe width, minimum	54, 125
Screenshot	31
Service Center	160
Shortcuts	
Menu	31
Shortcuts menu	
Opening	27
SideVision	
Left	105
Left / right	105
Right	105
Software	
Compatible Displays	14
Software updates	34, 36
Software version	14
Sonar	
History	107
Ping	31
Sonar logs	98
Sonar ping	
Enable/Disable	32
SonarChart Live	98–99
Enabling	99
Tide correction	99
Speed	
Data items	21, 124
Sports fishing	97
Startup wizard	28
Status area	50
Support forum	164
Switching active app	26–27

T

Take Screenshot	31
Technical support	160, 164
Tides mode	
Animation controls	91
Displaying graphs	95
Time	50
Data items	21, 124
Time/Date format	54, 126
Timer	50

Count down	51
Count up	51
Track	68, 74, 87
Create route	69
Export	68
Import	68
Start	68, 78, 87
Stop	78
Tracks	68
Capacity	68
Color	70
Create route	70
Deletion	70
Edit	69
Hide	69
Interval	70
List	69
Management	69
Menu	69
Options	69
Record by	70
Show	69
Training courses	164
Transducer	
Configuration	29, 110
port/starboard swap	30, 110
Setup	29, 110
Temperature calibration	30, 110
Temperature settings	30, 110
Transducer alignment	30, 110
Transducer offset	97
Transducer selection	28, 54, 125
Troubleshooting	150
GNSS (GPS)	153
Wi-Fi	156

U

Units	54, 126
Upgrading, software	34
User data	
Restore	
Back up	37, 70
User interface	
Languages	53

V

Vectors	81, 137
Vessel details	78
Vessel icon	74
Vessel symbol	78
Video Gallery	164
VRM/EBL	
Centered	142
Floating	142

W

Warranty	160
Waypoint	58, 74
Arrival alarm	85
Arrival circle	85
Button	26

capacity	58
Comments	59
Creation	63
Customizing	59
Delete	59
Details	59, 62
Export	58
Find	63
Goto	59, 85
Group	59
groups	60, 63
Import	58
List	61
Menu	60, 63
Name	59, 62
Notes	59
Placement	26, 58–59, 75, 107, 134–135
Waypoint group	
Creation	62
Deletion	62
Hide	63
Show	63
Waypoint sharing	64
Wind	
Data items	22, 124

X

XTE,	
Restart	85

Z

Zoom in	26
Zoom mode	
Activating	26
Zoom out	26



FLIR Belgium BVBA
Luxemburgstraat 2, 2321 Meer.
Belgium.

Tel: +44 (0)1329 246 700

www.raymarine.com

Raymarine®

a brand by  **FLIR®**