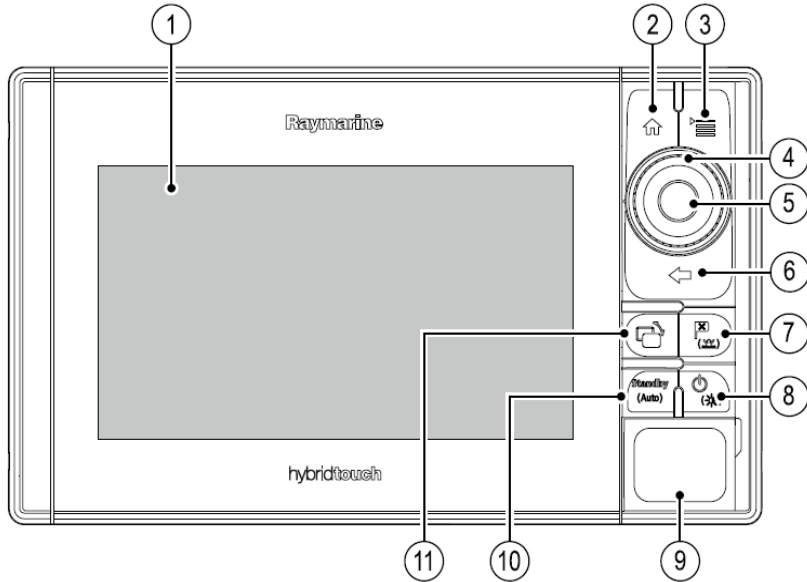# SINS2 OPERATION GUIDE

AUGUST 2017

eS MFDs

eS Product Portfolio

Models:
- 6" a67 (CB-M)
- 7" eS78
- 12" eS127

eS Controls

Description Functions

1. Touchscreen you can touch the screen to operate many common functions, including all menu operations.

2. Home Press to return to the Homescreen.

3. Menu Accesses menus. Press again to close menus.

4. UniControl Provides rotary and joystick control.

5. Ok Ok push button

6. Back Press to return to a previous menu or dialog level.

7. WPT / MOB • Press and release to access the waypoint options. Press again to place a waypoint. Press and hold   to place a Man Overboard (MOB) marker at your current position.

8. Power • Press once to switch the unit ON. Once powered on, press the Power button again to adjust the brightness, perform a screen capture, access Powersave mode or access the power controls for external devices. Press and hold to switch the unit OFF.

9. Card reader slot Open the card door to insert or remove a MicroSD card. There are 2 card slots (labelled 1 and 2),   used for electronic charts and archiving waypoint, route, track and settings data.

10. Pilot • Press to disengage integrated autopilot. Press   and hold to activate Auto mode on integrated autopilot.

11. Switch Active Pane Press to switch the active pane in splitscreen pages. Press and hold to expand the screen.

eS Unicontroller Operation

- 1. Rotary — use to select menu items, move the onscreen cursor, and adjust the range in the Chart and Radar applications.

- 2. Directional control — use to move the cursor position in applications, pan up, down, left and right in the Chart, Weather and Fish finder applications or to cycle through data pages in the Data application.

- 3. OK push button — push in to confirm a selection or entry.
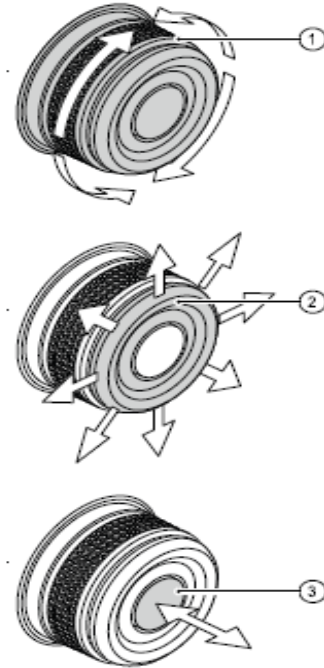
Data Master

- Any system containing more than one networked multifunction display must have a designated data master.

- The data master is the display which serves as a primary source of data for all displays, it also handles all external sources of information.

- For example: Systems requiring heading information from the EV Sensor and GPS antenna, are initially received through the SeaTalking network to the Data Master Display. The data master then bridges the data to the Raynet ethernet network and repeats to all other MFD displays.
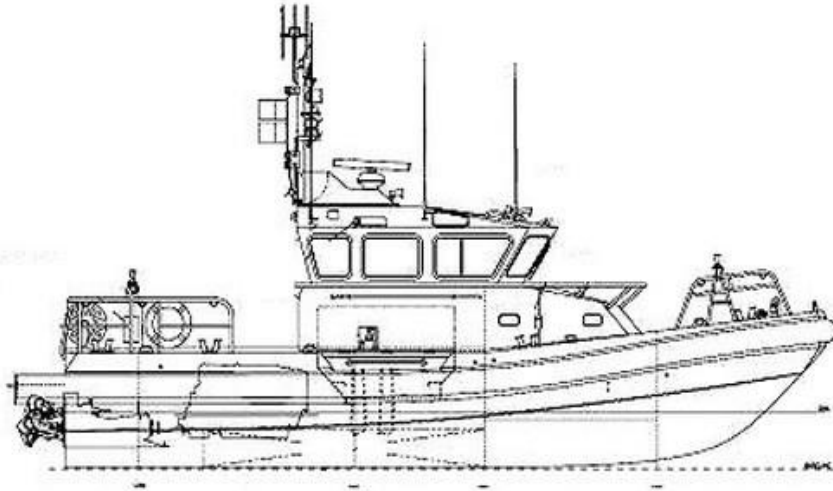
Information shared by the data master includes:
- Cartography
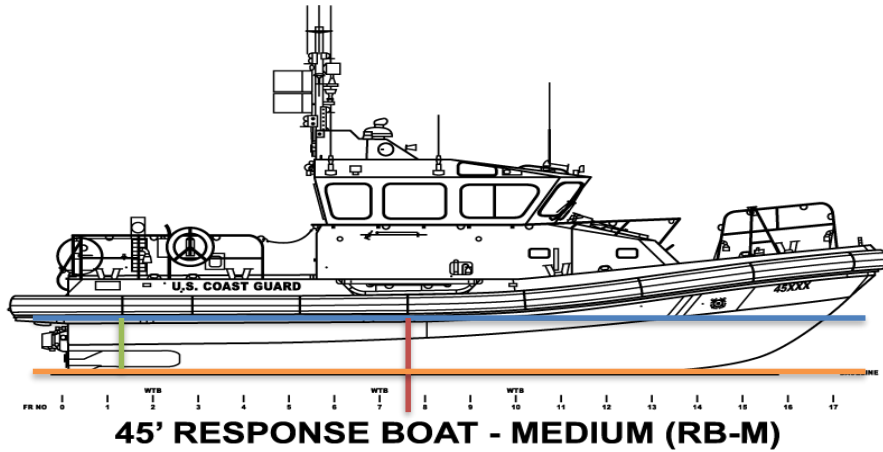- Routes and waypoints
- Radar
- Sonar

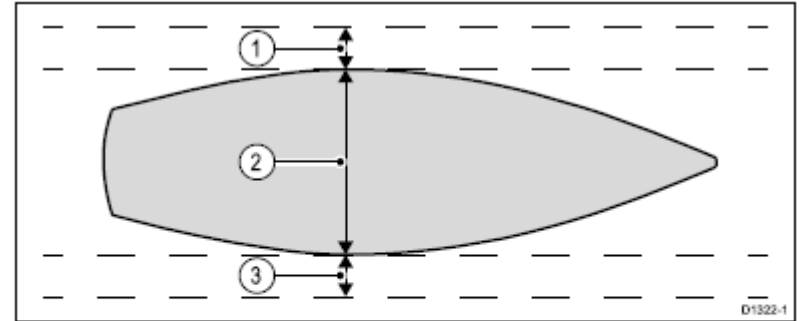Operation

Initial Startup Procedure

1. Language

2. Boat type

3. Configure Units (Units of measure)

4. Boat Details (Parameters)

Initial Startup Procedure

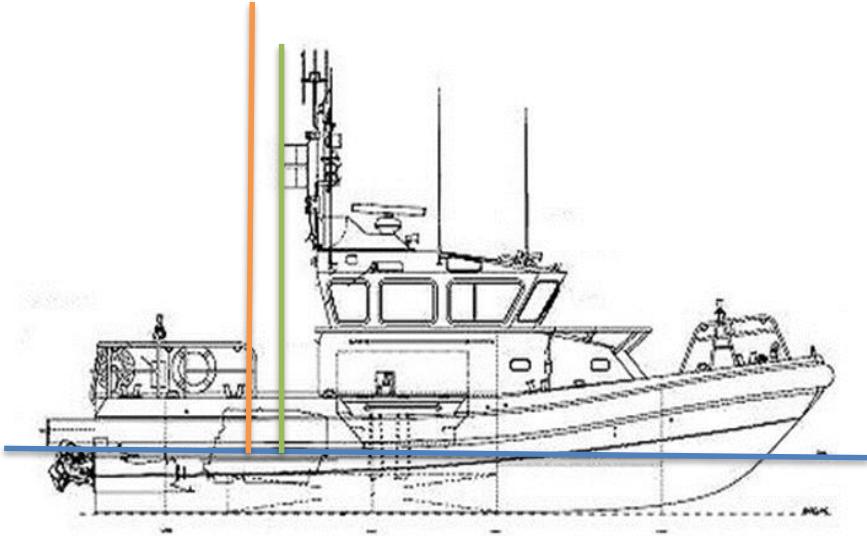**45' RESPONSE BOAT - MEDIUM (RB-M)**

1. Waterline
2. Maximum Vessel Draft
3. Safety Margin
4. Minimum Safe Depth

1. Port safety margin
2. Maximum Vessel Width (Beam)
3. Starboard safety margin

Initial Startup Procedure

1. Waterline
2. Maximum height from waterline
3. Safety Margin

Home screen

a Series

eS Series

Note: Touchlock disables the Touchscreen to prevent accidental use. Selecting the icon enables Touchlock, to disable Touchlock, use the UniControl to select the TouchLock icon again.
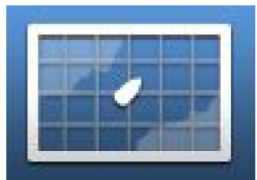
Applications

Chart application — provides a 2D or 3D graphical view of your charts to help you navigate. Waypoint, route, and track functions enable you to navigate to a specific location, build and navigate routes, or record where you've been. Chart cards provide higher levels of detail and 3D views.

Radar application — with a suitable radar scanner, you can use the radar application to track targets and measure distances and bearings. A number of automatic gain presets and color modes are provided to help you get the best performance from your radar scanner.

Sonar (Fishfinder) application — with a transducer and a sonar variant MFD or compatible Sonar module, you can use the Sonar application to help you accurately distinguish between different targets, bottom structure, and underwater obstacles. You can also view water depth and temperature data and mark points of interest.

Data application — view system and instrument data on your MFD, for a range of compatible instruments. Use the joystick or touchscreen to scroll through the available data pages.

Applications

Thermal cam application — view and control a thermal camera using a compatible MFD.

Note: The thermal camera application is not available on a6x and a7x variant MFDs.

Camera application — view a video or camera source on your MFD.

Note: Camera applications are none applicable to CG assets.

Doc Viewer — view pdf documents stored on a MicroSD card.

User Manual — Opens the English version of the product user manual stored on the display. To open translated user manuals stored on memory card use the Doc Viewer.

Note: The User Manual Application takes an extremely long time to upload and the space bar does not currently work in the "Find" function.

Customizing the Home screen

Changing an existing page on the Homescreen with the homescreen displayed:

1. Select Customize.

2. Select Homescreen.

3. Select Edit Page.

4. Select the page icon that you want to change. The Customize menu options are displayed.

5. Select the appropriate page layout (for example, "Split screen").

6. Select the application(s) you want to display on the page, either by selecting the relevant menu item or dragging it over to the displayed page.

7. Select Finish. The Rename Page dialog is displayed.

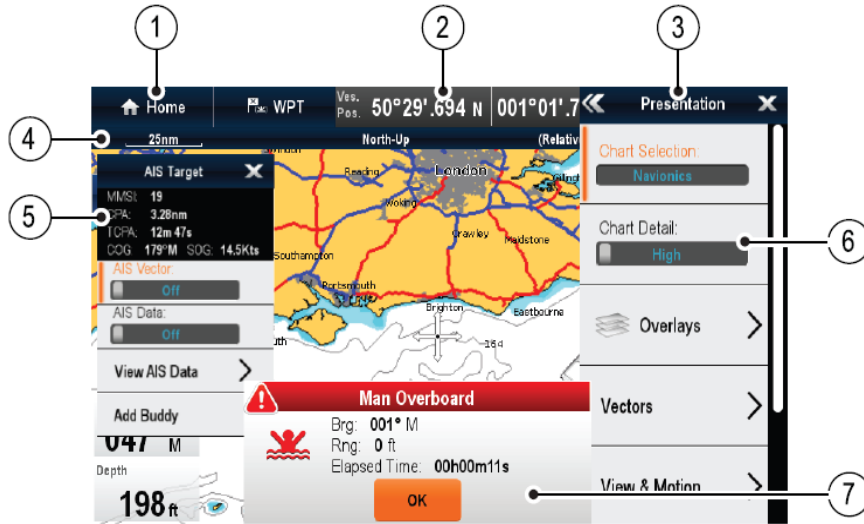8. Use the on-screen keyboard to name the page, then select Save.

Customizing the Homescreen

1. From the Homescreen, select Customize.

2. Select Homescreen.

3. Select Lock Homescreen.

The onscreen keyboard is displayed.

4. Enter the password that you want to use.

The Homescreen, Databar and Data application layout and configuration are now locked

Chart Application

Screen item	Description
1	**Home** • **Displays with a touchscreen** — Select the onscreen **Home** icon to access the Homescreen. • **Non-touchscreen and HybridTouch displays** — Use the physical **Home** button to access the Homescreen.
2	**Databar** — provides information about your vessel and its environment. The type of information in the databar can be customized from the **Homescreen > Customize > Databar Set-up** menu, if required.
3	**Menu** — menu options are specific to the application that you are currently using.
4	**Status bar** — provides information specific to each application. This information cannot be edited or moved.
5	**Context menu** — provides information and options specific to each application.
6	**Menu options** — menu options are displayed when the Menu is selected.
7	**Pop-up messages** — alert you to a situation (such as an alarm), or unavailable function. Pop-up messages may require a response from you — for example, select **OK** to silence alarms.

GPS Status

- 1. Sky view
- 2. Satellite status
- 3. Position and fix information
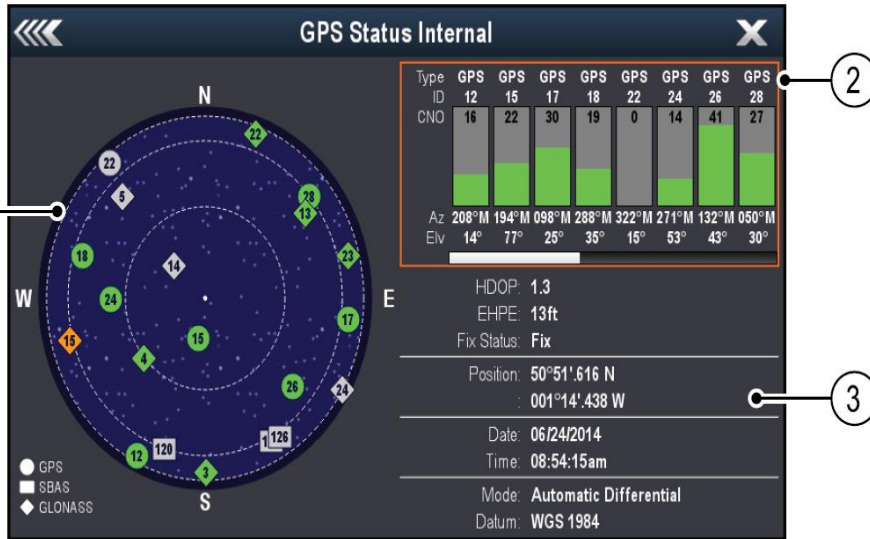
Circle — A circle identifies a satellite from the GPS constellation.

Diamond — A diamond identifies a satellite from the GLONASS constellation.

Square — A square identifies an (SBAS) differential satellite. i.e. WAAS
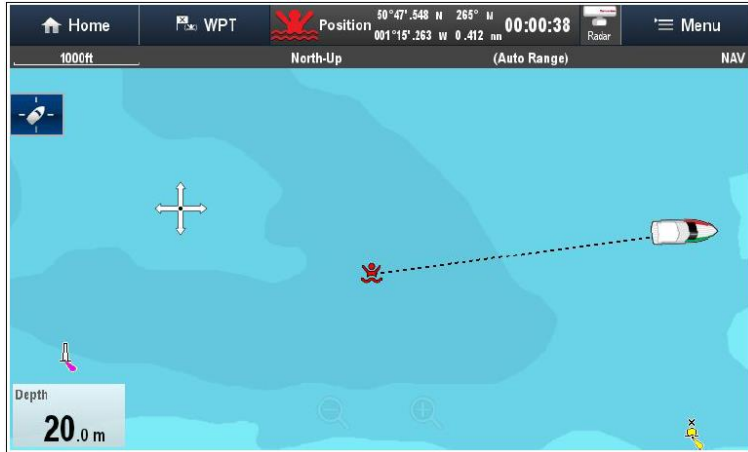
Alarm Management

The Alarm Manager is used to configure the behavior of alarms and to manage alarm activity.

The Alarm Manager can be used to:

- Enable and disable alarms
- Adjust alarm thresholds
- View alarm history
- View list of currently active alarms
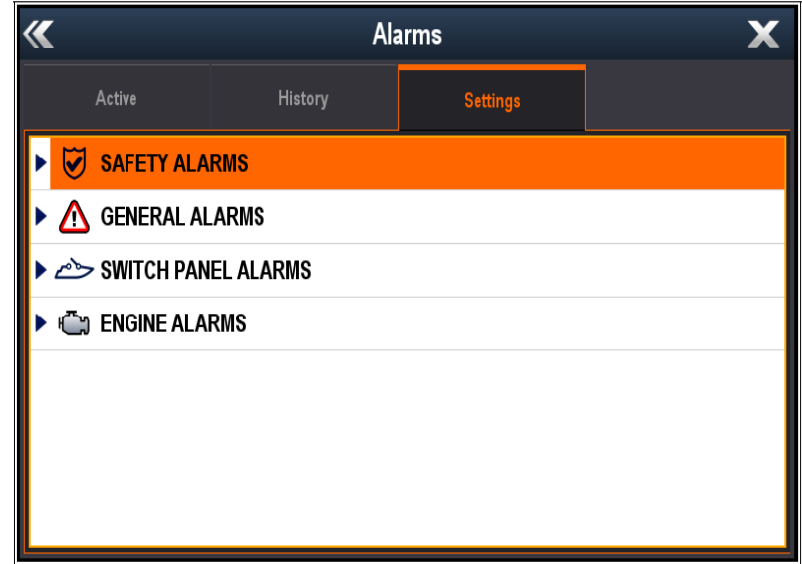
MOB Alarm

Press and hold WPT / MOB for 3 secs to activate

Press and hold WPT / MOB for 4 seconds to cancel

WPT button		• c Series • e Series • eS Series • RMK-9 keypad
WPT icons		• a Series • gS Series

Man Overboard

Brg: 172° M
Rng: 722 ft
Elapsed Time: 00h00m22s

OK

DSC Distress Alert

DSC Distress Alert
Undesignated Distress
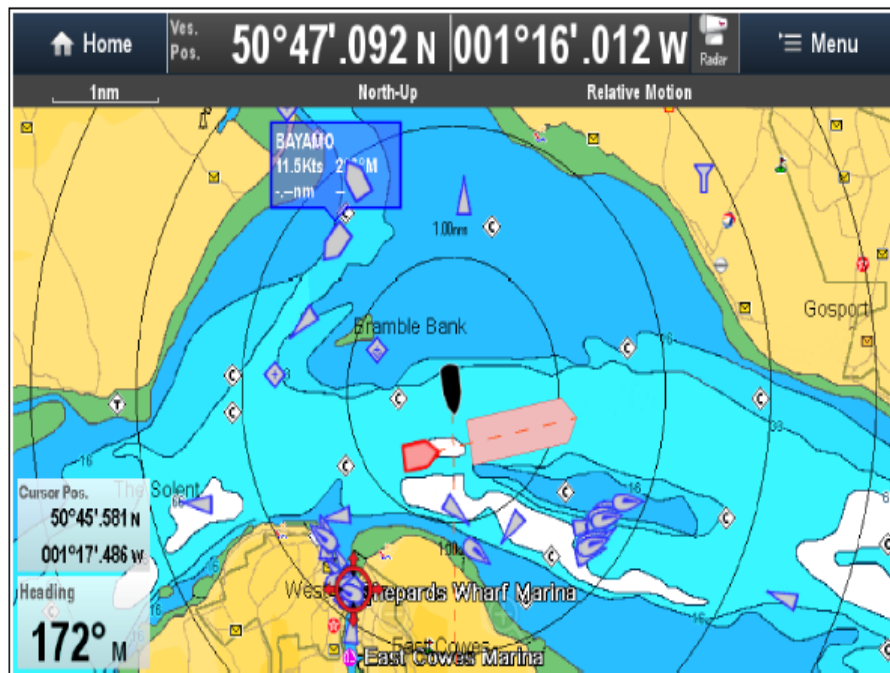Distressed Vessel: 235899934
Position: 50°50'.180 N
001°15'.429 W
Time Sent: 10:41:00

Place Waypoint | Goto Vessel | Clear Message

You can connect your DSC VHF radio to your multifunction display and show distress message information and GPS position data for other vessels
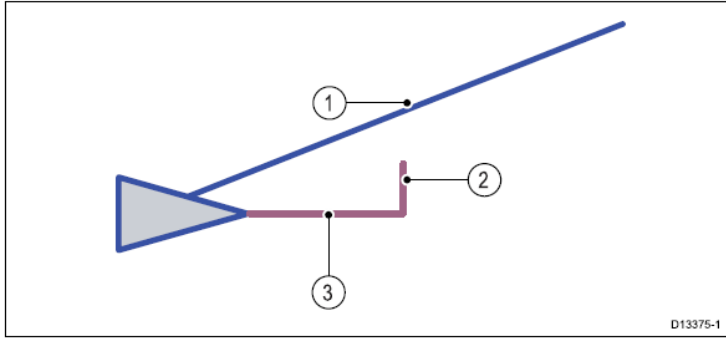
AIS Overview

AIS target types

|			
	Unknown vessel type		Yacht
	Commercial vessel		High speed
	Land based station		* Blueforce
	SAR (Search and Rescue Aircraft)		AToN (Aid To Navigation)
	Virtual AToN		SART (Search and Rescue Transpon-ders)

Vectors can be displayed for AIS targets.

1. **COG vector** — The length of the COG vector predicts the distance the target will travel within a specified time period. The COG vector can be set to 'Relative' (Orange) or 'True' (Blue) motion.

2. **Rate of turn** — Class A targets, if available can display a Rate of Turn (ROT) indicator.
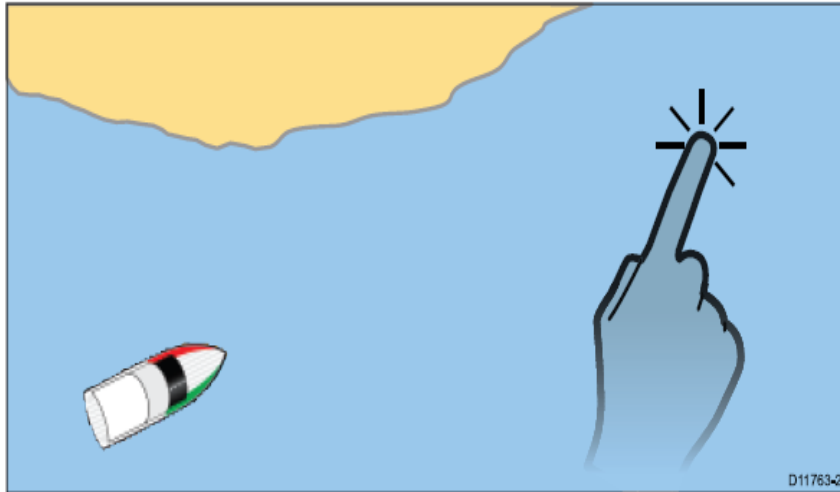
3. **Heading** — The Heading line is a fixed length.

Needs a screenshot of True motion and Relative motion vector capabilities!
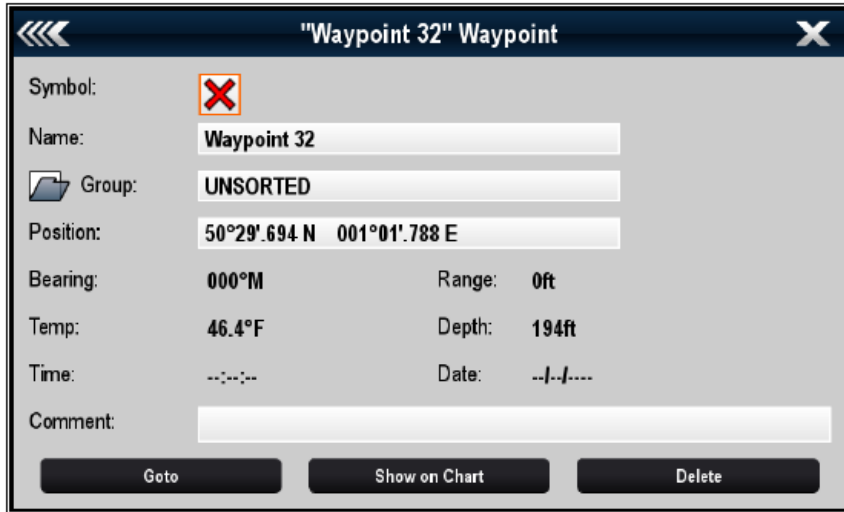
Waypoints
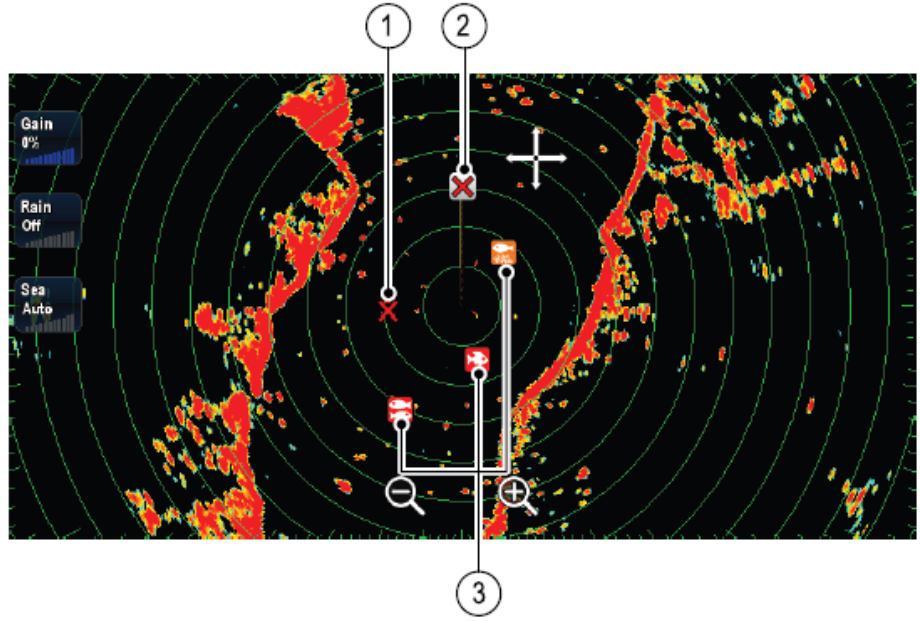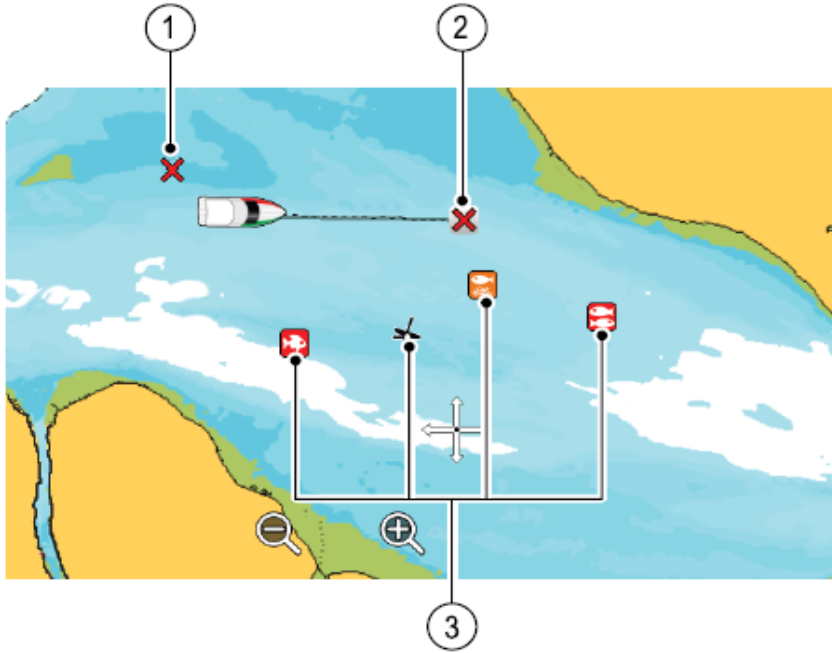
1 Inactive waypoint

2 Active waypoint

3 Alternative waypoint symbols

Waypoint Placement

WPT button		• c Series • e Series • eS Series • RMK-9 keypad
WPT icons		• a Series • gS Series

Placing a waypoint at a known position (lat/long)

"Waypoint 32" Waypoint

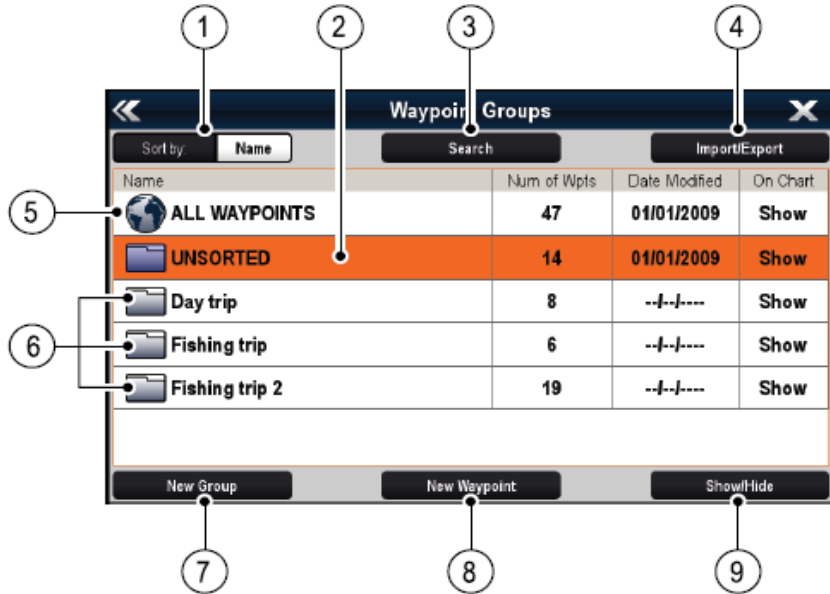|	
Symbol:	✖
Name:	Waypoint 32
Group:	UNSORTED
Position:	50°29'.694 N 001°01'.788 E
Bearing:	000°M
Range:	0ft
Temp:	46.4°F
Depth:	194ft
Time:	--:--:--
Date:	--/--/----
Comment:	

Goto   Show on Chart   Delete

You can place a waypoint at a specified location using latitude and longitude coordinates:

1. Select WPT.

2. Select Place Waypoint At Lat/Long.
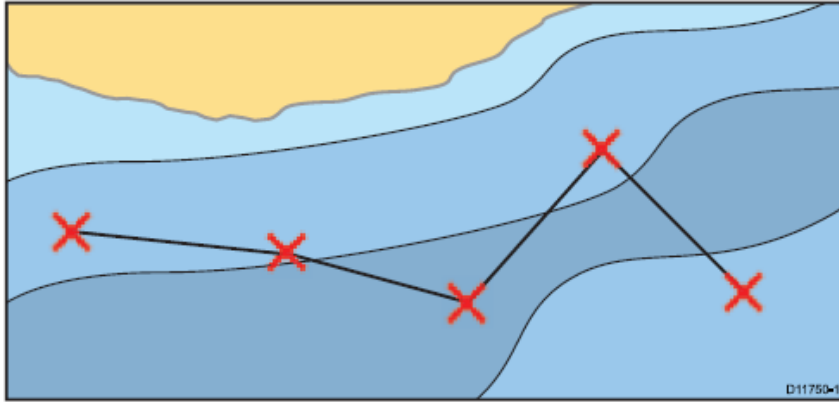
The waypoint details dialog is displayed.

Waypoint List

The Waypoints list is accessed from the menu:

Menu > My data > Waypoints

Routes

A route can consist of a combination of:

- New waypoints
- Existing waypoints
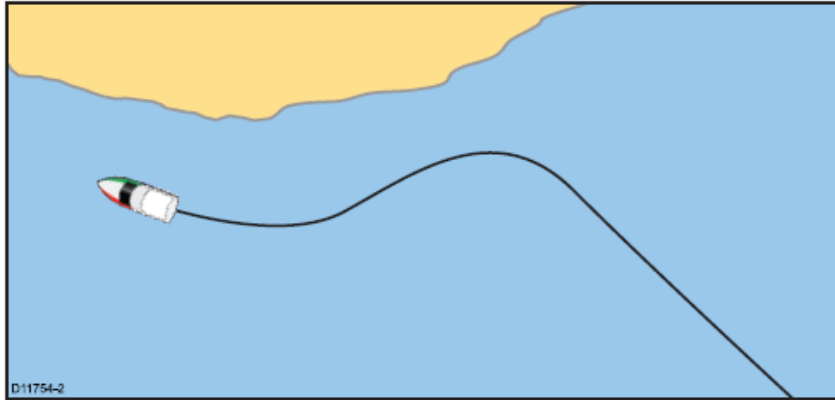- An existing track

Building a Route

Route features are accessed from the chart application:

- by selecting an existing route.
- by using the Build Route option from the chart context menu.
- by using the Chart application menu: Menu >Navigate > Follow Route or Build Route.

Tracks

Tracks can be used to make a permanent record of where you have been. Tracks are made up of track points that are created automatically at specified intervals.

Creating a track

From the chart application menu:
    1. Select Navigate.
    2. Select Start Track. The start
    track pop up message is displayed.
    3. Select OK.

Chart Call-outs

Touching an area or object opens the Call-out. The Call-out will close automatically after 10 seconds.
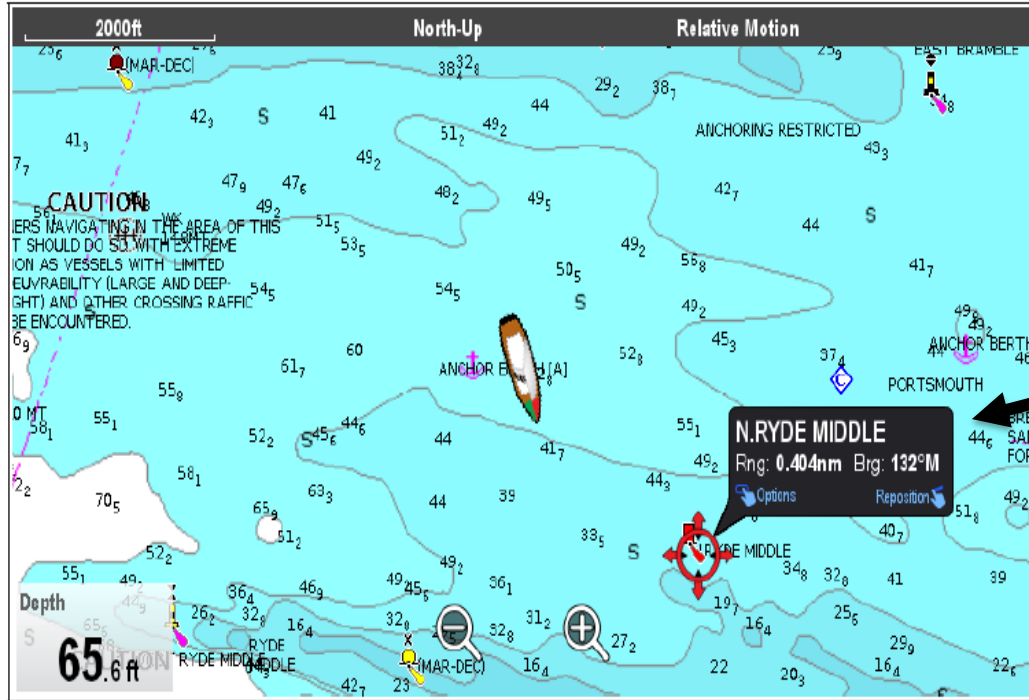
Charts
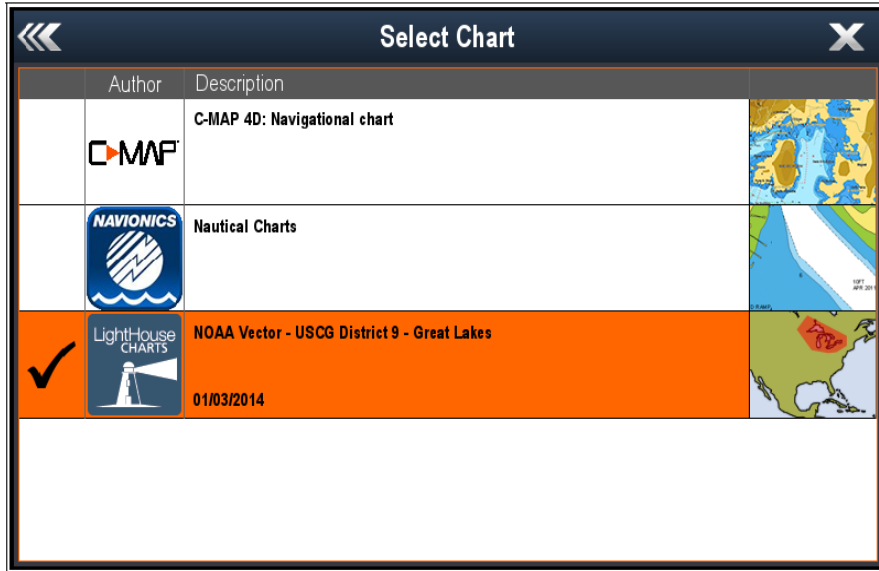
Raster charts

Vector charts

Raster charts are an exact copy/scan of an existing paper chart. All information is embedded directly in the chart.

Vector charts are computer generated, consisting of a series of points and lines that make up the chart. Chart objects and overlays on vector charts can be switched on and off and chart objects can be selected to provide further information.

Chart Selection

From the Chart application menu:

1. Select Presentation.

2. Select Chart Selection. A list of available cartography is displayed.

3. Select the cartography type you want to display the Chart window is re-drawn to show the select cartography type.

Chart Overlays

From the Chart application menu:

1. Select Presentation.

2. Select Overlays.

- AIS
- Radar
- Databoxes
- Chart grid
- Chart Text
- Range Rings
- Boat Icon Size
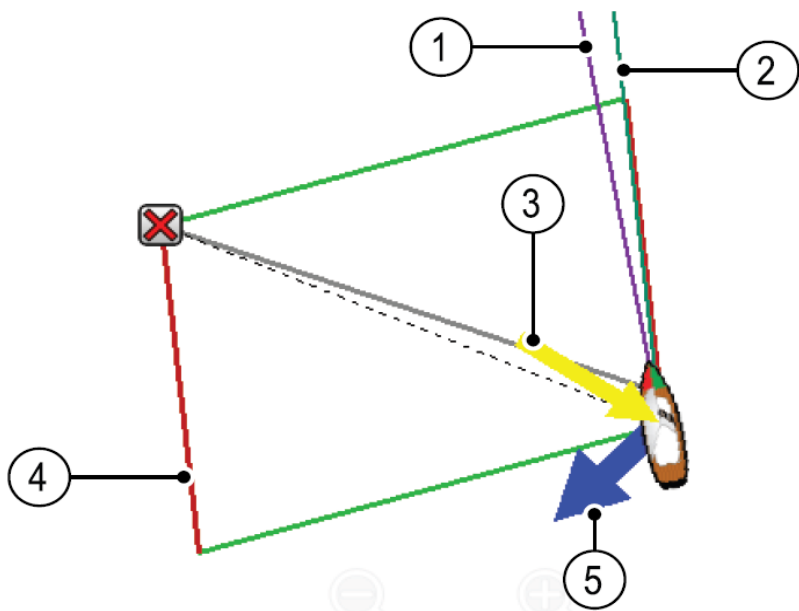- Waypoint Names
- Route / Track Widths

Data Boxes

From the Chart application menu:

1. Select Presentation.

2. Select Overlay.

3. Select Databoxes.

4. Select Databox 1 > On.

5. Select Databox 2 > On.

# Chart Vectors

Item	Descriptions
1	**Heading vector** — a purple line shows the vessel's current heading.
2	**COG vector** — a dark green line indicates the vessel's actual Course Over Ground.
3	**Wind arrow** — wind direction is displayed as a yellow line with solid arrow heads pointing towards your vessel, indicating the wind direction. The width of the arrow indicates the wind strength.
4	**Laylines** — show the most efficient way for a sailing vessel to reach its destination, given present wind conditions.
5	**Tide arrow** — tide is displayed as a blue line with solid arrow head pointing away from your vessel, in the direction of the tidal set. The width of the arrow indicates the tide strength.

From the Chart application menu:
1. Select Presentation.
2. Select Vectors.

Chart Objects
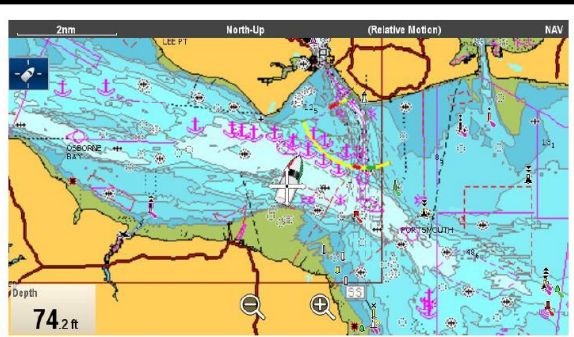
Low	
High	
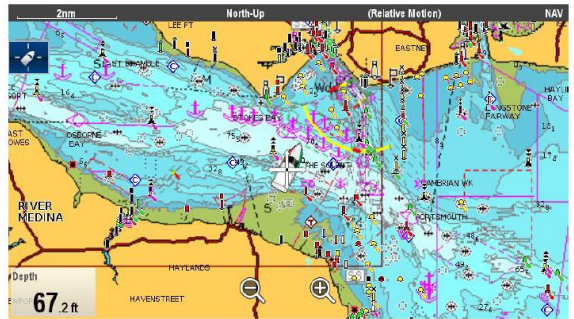
- **Nav. Marks** - Determines whether navigation marks are displayed.
- **Nav. Mark Symbols** - Determines which set of navigation mark symbols is used — International, or US. (These symbols correspond to paper charts).
- **Light Sectors** - Determines whether the sector of light cast by a fixed beacon is displayed.
- **Routing Systems** - Determines whether routing data is displayed.
- **Caution Areas** - Determines whether caution data is displayed.
- **Marine Features** - Determines whether the water-based cartographic features such as cables, tide and current stations and port information etc. is displayed.
- **Land Features** - Determines whether land-based cartographic features such as buildings, towers, masts and coast guard stations etc. are displayed.

Measuring distances and bearings

You can determine the distance and bearing:

- From your vessel to the position of the cursor;
- Between two points on the chart

Needs a screenshot!

From the chart application:

1. Select the location on screen that you want to measure the distance or bearing from your vessel. The chart context menu will be displayed.

2. Select MEASURE
   The following will happen:
   - The measure menu will be displayed
   - A line will be drawn from the cursor position to the center of the screen.
   - The cursor location will be moved at the center of the screen
   - The Bearing and distance will be displayed next to the new cursor location.

3. From the measure menu select FROM so that Ship is selected.
   The ruler line is re-drawn from the cursor position to your vessel.

4. You can now adjust the ruler position by moving the cursor to the desired location.

5. If you want the ruler displayed after you have closed the measure menu, select RULER: so that ON is highlighted. Selecting ruler will switch the Ruler On and Off

6. Select Back or OK to close the measure menu leaving the current measurement on-screen

Sonar Application

Example CHIRP screen
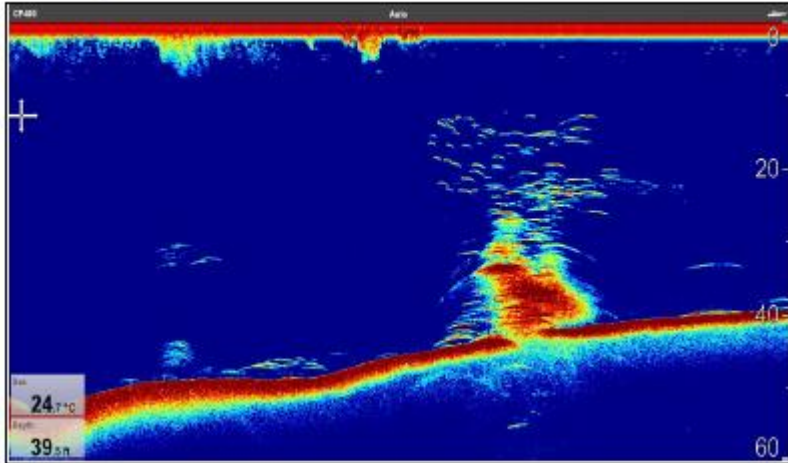
Your multifunction display supports multiple active sonar modules on the same network.

Select your Channel

From the Sonar application:
1. Select Menu.
2. Select Channel. The Channel selection page is displayed.
3. Select the tab for the sonar module you want to use. A list of available channels for the selected sonar module is displayed.
4. Select a channel from the list.

Module and Transducer Selection

Sonar module selection

– Sonar and DownVisionTM variant displays are fitted with an internal sonar module.

– All variants allow you to connect a compatible external sonar module or use an internal sonar module from a networked display.

– The sonar channel you want to use must be selected from the Sonar application menu.

Transducer selection

– Sonar variant displays allow direct connection of a Raymarine sonar transducers

– DownVisionTM variant displays allow direct connection of Raymarine DownVisionTM transducers.

– All variants allow the connection of a Raymarine sonar transducer via a compatible external sonar module.

– For all variants use the Transducer Set-Up menu in the Sonar application to specify the transducer you want to use.

Radar Application
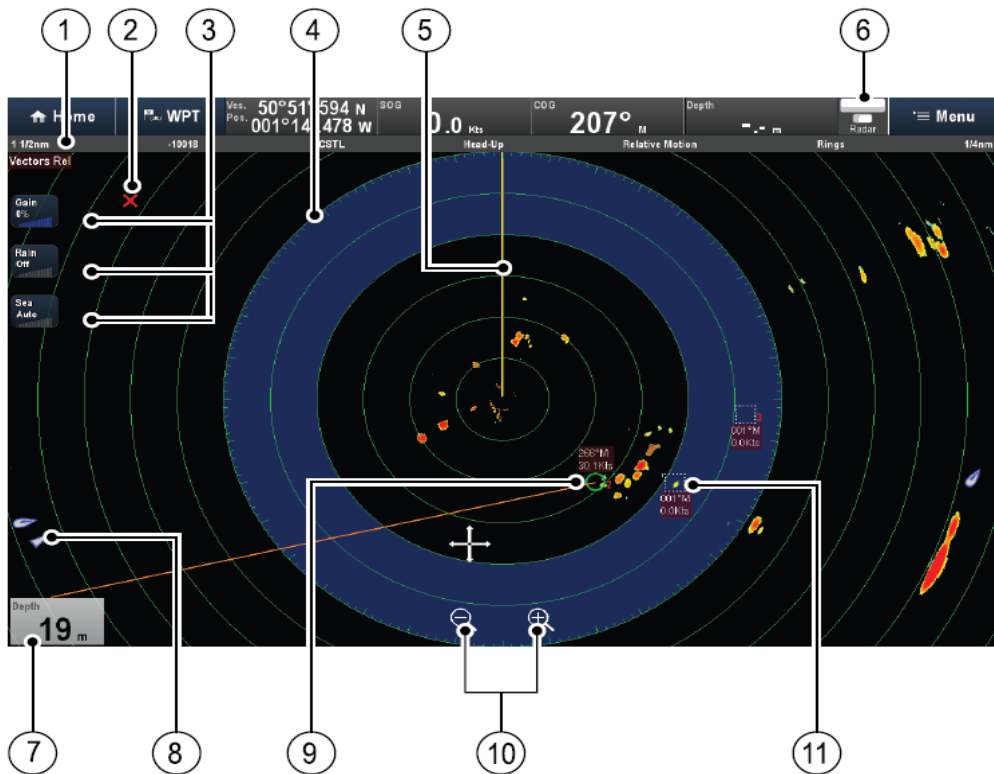
| 1	Radar status bar displaying:
	• Range
	• Radar scanner serial number
	• Gain mode
	• Orientation
	• Motion mode
	• Range ring spacing
2	Waypoint
3	Onscreen controls (Touchscreen multifunction displays only.)
4	16.12 Guard Zone
5	Ship's Heading Marker (SHM) (Your vessel's dead ahead bearing is indicated by the SHM. If the cursor is placed over the SHM, it will temporarily be removed to help placing markers or acquiring targets etc.)
6	Radar status (Displayed in the databar)
7	Databox overlay
8	Automatic Identification System (AIS) target
9	Acquired 16.9 Mini Automatic Radar Plotting Aid (MARPA) target
10	Range controls (Touchscreen multifunction displays only.)
11	MARPA target being acquired

Powering up Radar
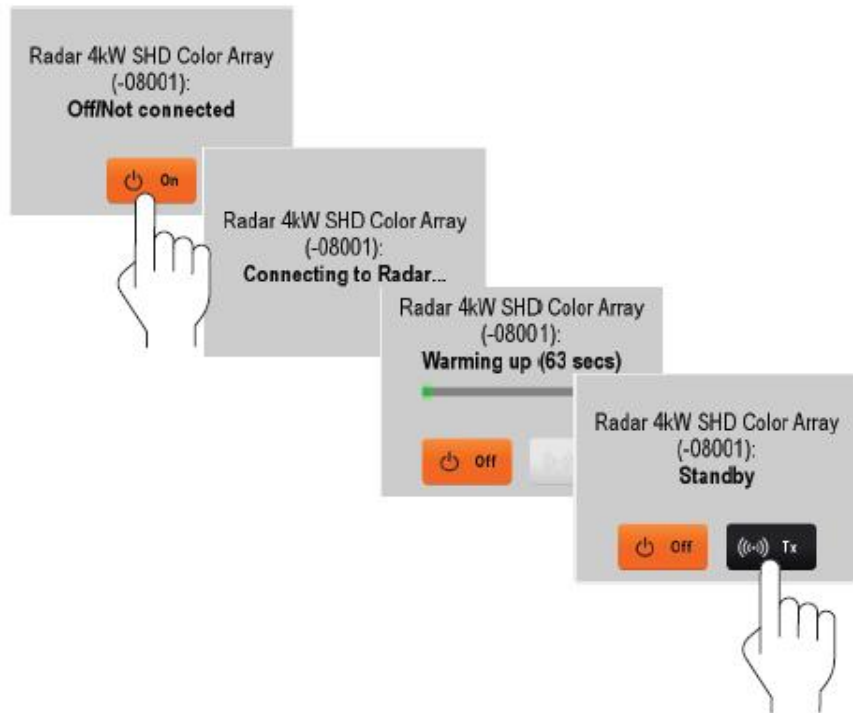
Data Application

The Data application enables you to view data generated by the multifunction display or data that is available on your system.

(Note: Fuel and Environment will not be available.)
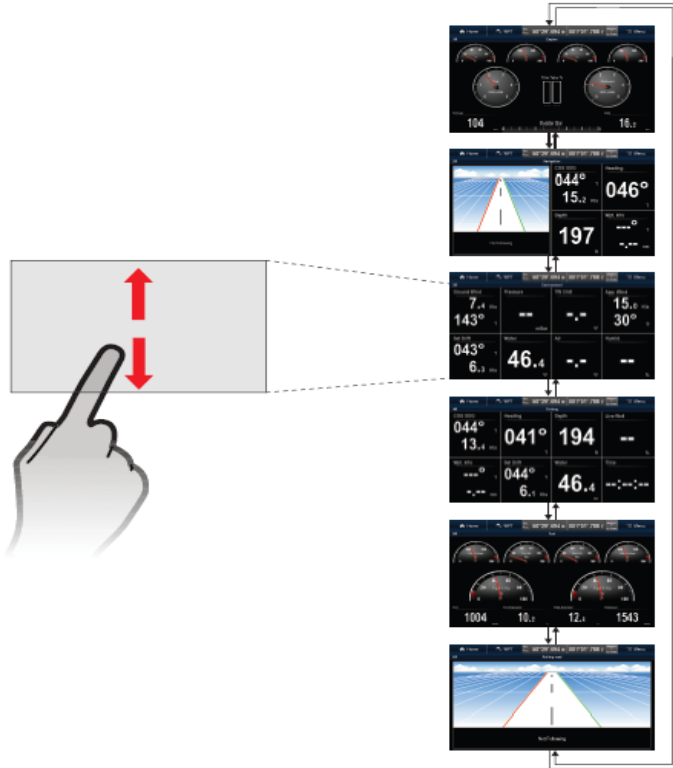
Motor vessel	
Page number	Page
1/6	Engine
2/6	Navigation
3/6	Environment
4/6	Fishing
5/6	Fuel
6/6	Rolling road

Customizing Data Application
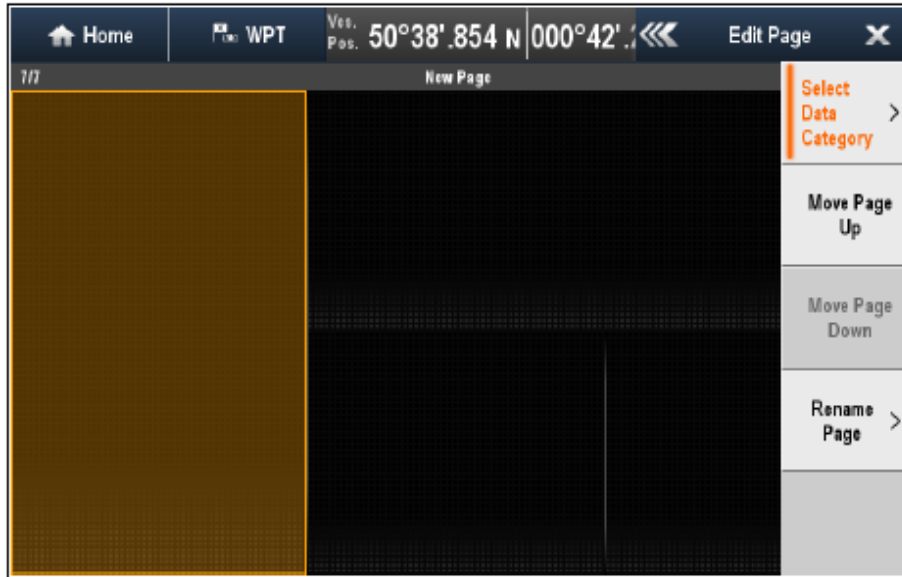
🖐 Customizing datapage content using touch

On touchscreen multifunction displays you can customize a data item by pressing and holding on the item onscreen.

From the Data application:

1. Display the datapage that contains the data item you want to change.
2. Touch and hold your finger on the data item.

   After approximately 3 seconds the data item is highlighted and the **Select Data Category** menu is displayed.
3. Navigate the menu to locate the data item you want to use.
4. Select the data item.

   The selected data item is now displayed in place of the original data item.

SINS2 Lighthouse Software

SINS2 Lighthouse User Interface

- Setup
  - Boat Type, Status, MMSI, Encryption, Data Logging
- Obstruction Alarm (Bridges/Contour)
- Collision Avoidance
- Event Markers
- Wpt at Range/Bearing from here
- Tracked Targets
- Target of Interest
- Target Intercept
- Text Messaging
- SAR Patterns

SINS2 Lighthouse User Interface

- Setup (Startup & HomeScreen)
    - Boat Type (in Startup Wizard)
    - Status
    - Vessel MSSI (in Startup Wizard)
    - Encryption
    - Lock Set-up

    - Data Logging

SINS2 Lighthouse User Interface

- Obstruction Alarms
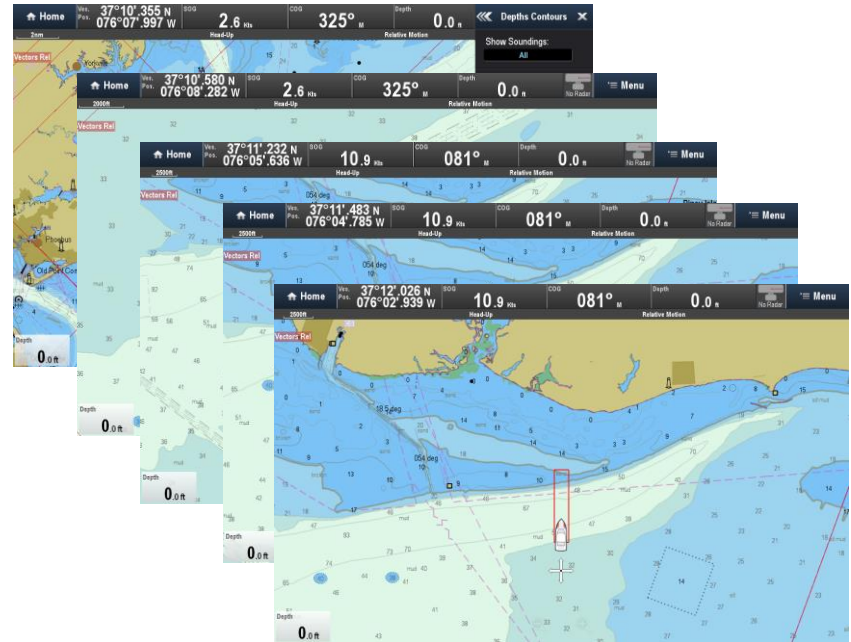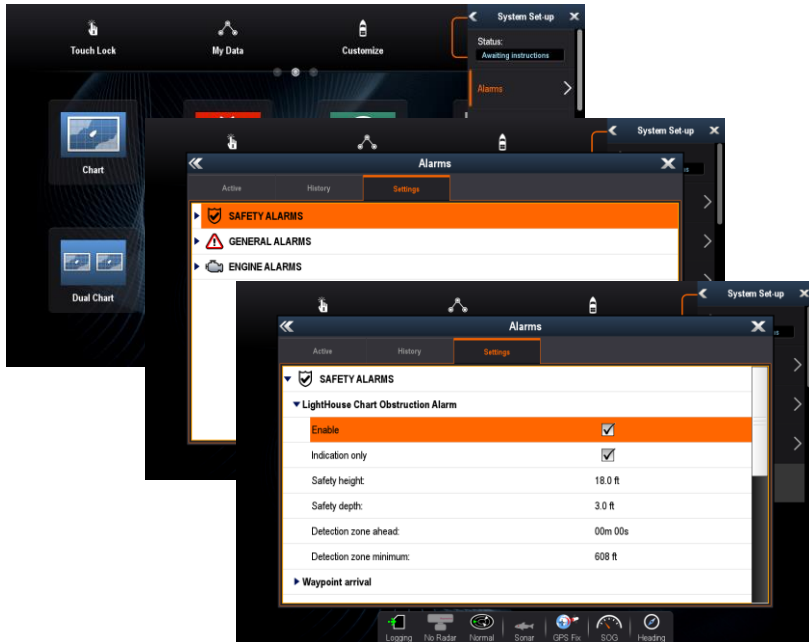
SINS2 Lighthouse User Interface

- Collision Avoidance
  - Dual Guard Zone
  - Dual VRM/EBL (floating)
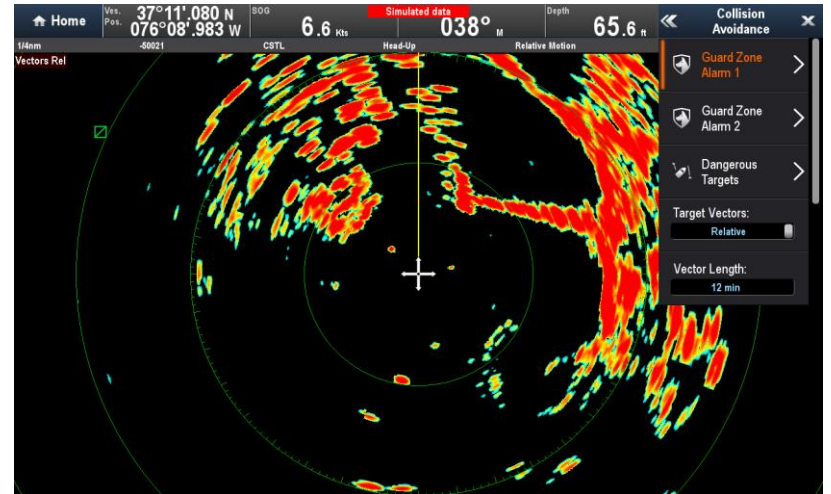
SINS2 Lighthouse User Interface

- Event Markers
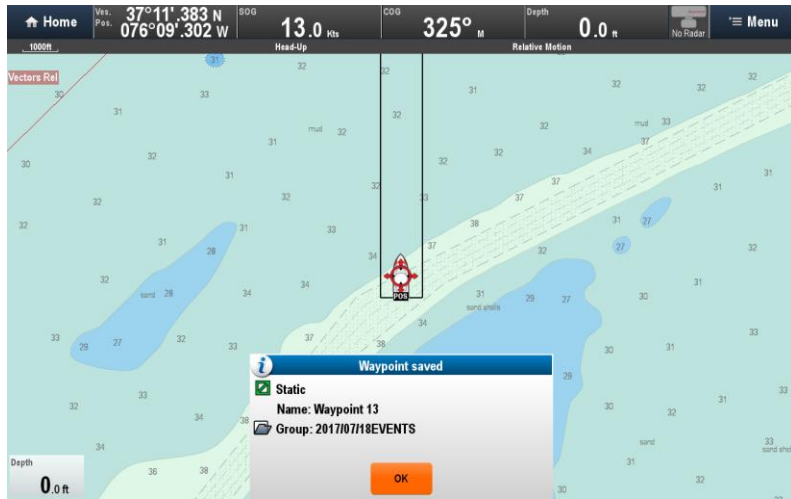
SINS2 Lighthouse User Interface

- Wpt at Range/Bearing from here
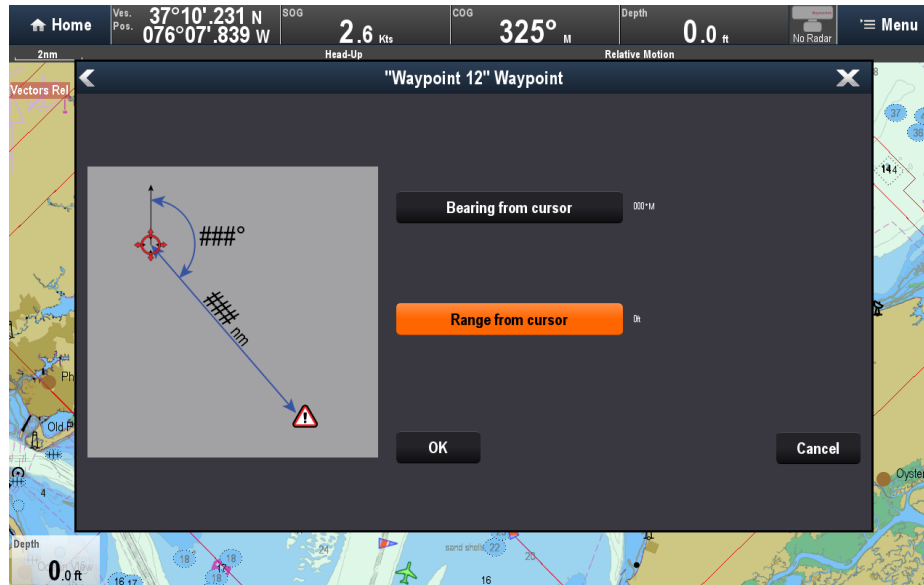
SINS2 Lighthouse User Interface

- Tracked Targets (Chart or Radar)
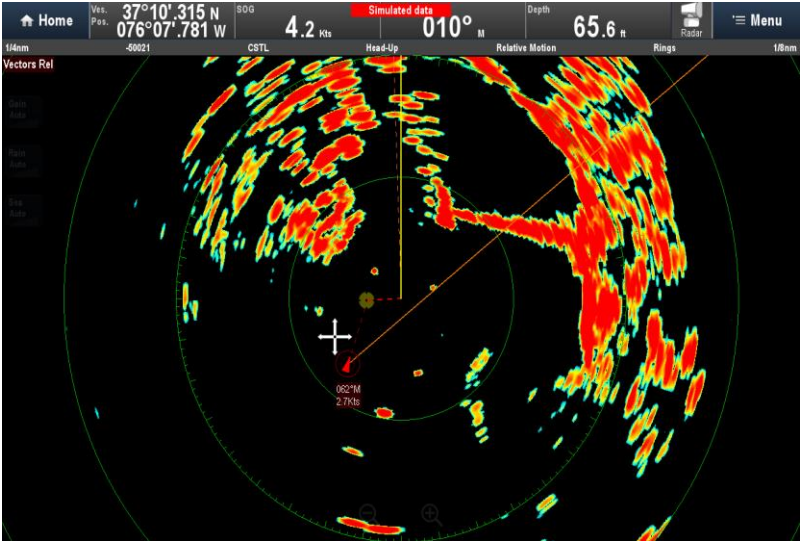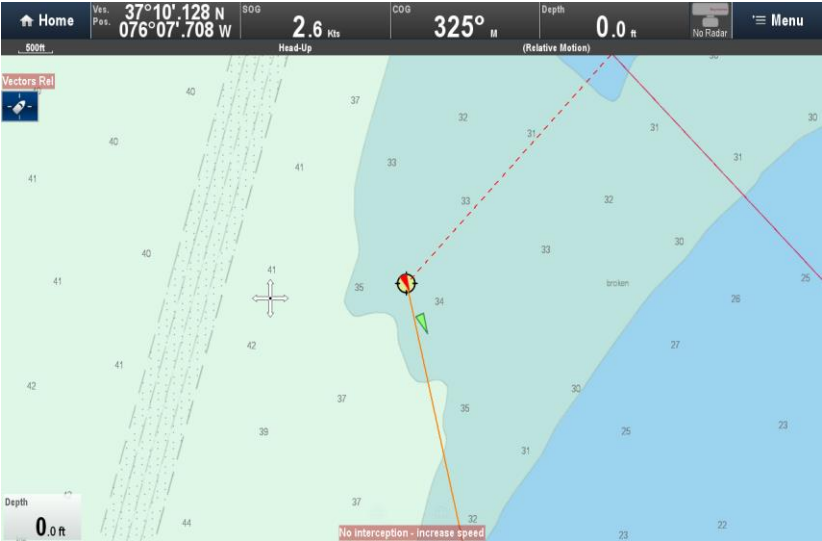 - AIS, DSC, Intel, TOI

SINS2 Lighthouse User Interface

- Target of Interest

SINS2 Lighthouse User Interface
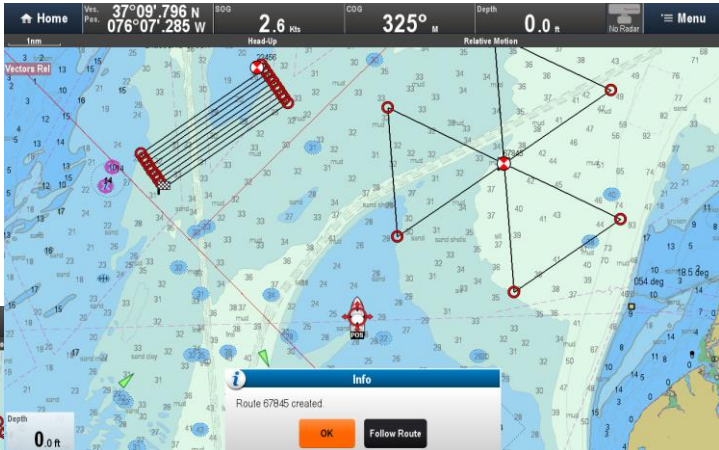
- Target Intercept

SINS2 Lighthouse User Interface

- Text Messaging

SINS2 Lighthouse User Interface

- SAR Patterns (STEDs Received)

SINS2 Lighthouse User Interface

- SAR Patterns (Manual)