Zeus²

Operator Manual

ENGLISH



bandg.com

Preface

Disclaimer

As Navico is continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the equipment in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing safe boating practices.

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Navico product references

This manual can refer to the following Navico products:

- Broadband Radar™ (Broadband Radar)
- Broadband 3G™ Radar (Broadband 3G Radar)
- Broadband 4G™ Radar (Broadband 4G Radar)
- DownScan Imaging™ (DownScan)
- DownScan Overlay™ (Overlay)
- ForwardScan™ (ForwardScan)
- GoFree™ (GoFree)
- SonicHub® (SonicHub)
- StructureMap™ (StructureMap)
- StructureScan® (StructureScan)
- StructureScan® HD (StructureScan HD)

Copyright

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Warranty

The warranty card is supplied as a separate document.

In case of any queries, refer to the brand website of your display or system: bandg.com.

Regulatory statements

This equipment is intended for use in international waters as well as coastal sea areas administered by countries of the E.U. and E.E.A.

The Zeus^2 complies with:

- CE under R&TTE directive 1999/5/EC
- The requirements of level 2 devices of the Radiocommunications (Electromagnetic Compatibility) standard 2008

The relevant Declaration of conformity is available in the Zeus^2 section on the following website: bandg.com.

About this manual

This manual is a reference guide for operating the Zeus^2. It assumes that all equipment is installed and configured, and that the system is ready to use.

The manual assumes that the user has basic knowledge of navigation, nautical terminology and practices.

Important text that requires special attention from the reader is emphasized as follows:

→ ***Note:*** Used to draw the reader's attention to a comment or some important information.

> ⚠ Warning: Used when it is necessary to warn personnel that they should proceed carefully to prevent risk of injury and/or damage to equipment/ personnel.

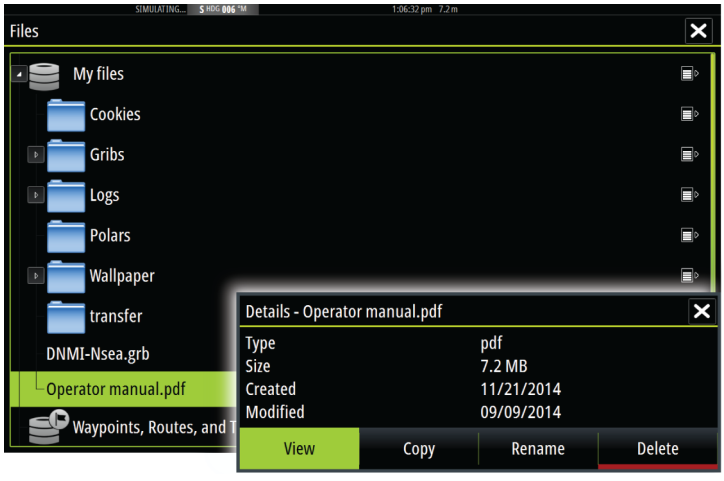
Manual version

This manual is written for the Zeus^2 software version 3.0. The manual is continuously updated to match new software releases. The latest available manual version can be downloaded from bandg.com.

Viewing the manual on the screen

The pdf viewer included in the Zeus^2 makes it possible to read the manuals and other pdf files on the screen. Manuals can be downloaded from bandg.com.

The manuals can be read from a card inserted in the card reader or copied to the unit's internal memory.



Use the menu options or the keys and on-screen buttons to maneuver in the pdf file as described below:

- Search, Goto page, Page Up and Down
  Select the relevant panel button.
- Scroll pages
  Turn the rotary knob.
- Panning on the page
  Drag finger on the screen in any direction.
- Zoom In/Out
  Use pinch or spread gestures.
- Exit the pdf viewer
  Press the **X** key or select the **X** in the upper right corner of the panel.

The Software version

The software version currently on this unit can be found in the About dialog. The About dialog is available in the System Settings.

For information regarding upgrading your software, refer to *"Software upgrades"* on page 118.

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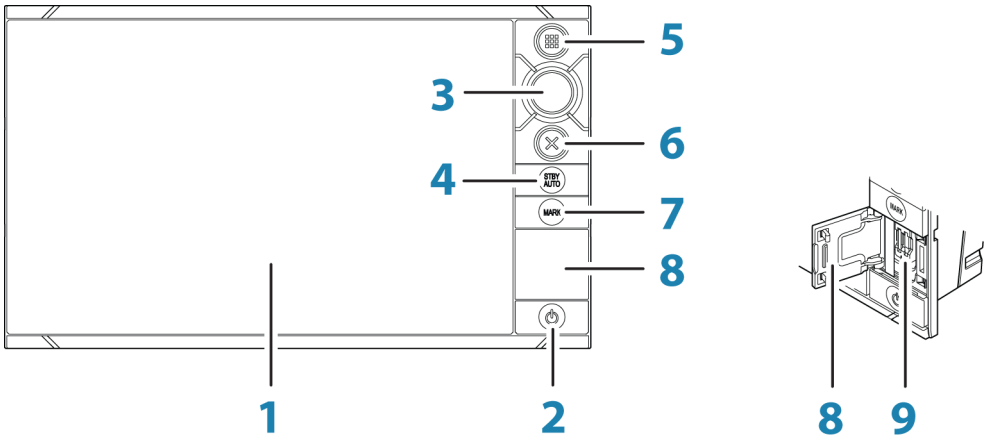
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1 Introduction

The front panel and keys



1 **Touch screen**

2 **Power key**
Press once to display the System controls dialog.
Repeat short presses to cycle the backlight brightness.
Press and hold to turn the unit ON/OFF.

3 **Rotary knob**
Rotate to scroll through menu items, then press to confirm a selection.
Rotate to adjust a value.
Rotate to zoom a zoomable panel.

4 **STBY / AUTO key**
With the autopilot in any automatic mode: Press to set the autopilot to Standby mode.
With the autopilot in Standby mode: Press to display the autopilot mode selection pop-up.

5 **Home key**
Press once to activate the Home page. Repeat short presses to cycle the favorite buttons.
Press and hold to display the Favorite panel as an overlay on active page. Repeat short presses to cycle the favorite buttons.

6 **X key**
Press once to exit a dialog, to return to previous menu level and to remove the cursor from the panel.

7 **MARK key**
With cursor active on the panel: Press to immediately save a waypoint at cursor position.
With no active cursor: Press to immediately save a waypoint at vessel position.
Press and hold to display the Plot menu used for saving new waypoints, routes and tracks.

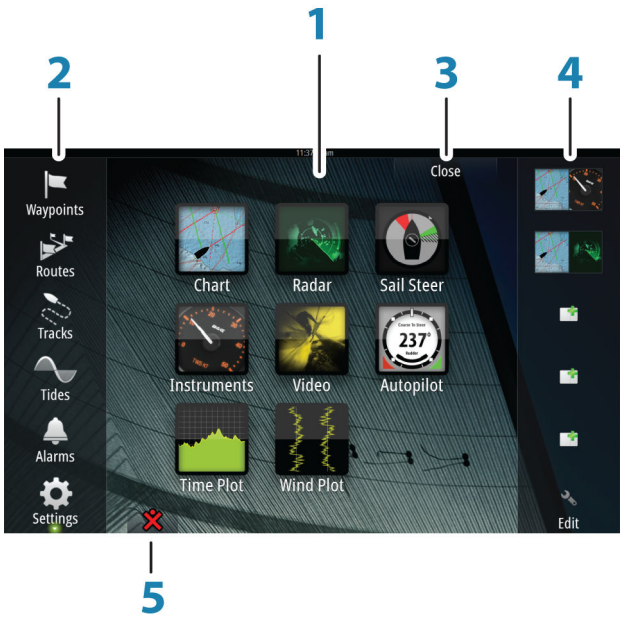
8 **Card reader door**

9 **Micro-SD Card readers**

→ ***Note:*** The MARK key is not available on 7" units.

The Home page

The **Home** page is accessed from any operation by a short press on the **Home** key.



1 **Applications**
Select a button to display the application as a full page panel.
Press and hold a button to display pre-configured split page options for the application.

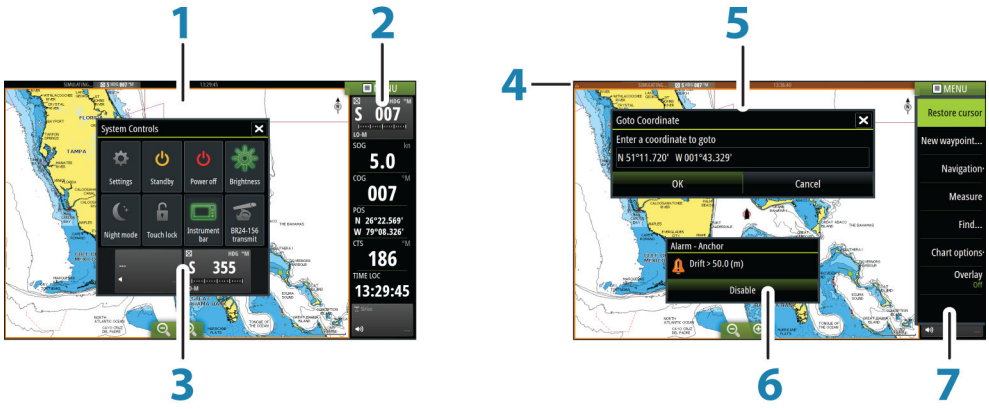
2 **Tools**
Select a button to access dialogs used for carrying out a task, or for browsing stored information.

3 **Close button**
Select to exit the **Home** page and return to the previous active page.

4 **Favorites**
Select a button to display the panel combination.
Press and hold a favorite button to enter edit mode for the Favorites panel.

5 **Man Over Board (MOB) button**
Select to save a Man Over Board (MOB) waypoint at the current vessel position.

Application pages



Each application connected to the system is presented on panels. The application can be presented as a full page, or in combination with other panels in a multiple panel page.

All application pages are accessed from the **Home** page.

1 **Application panel**

2 **Instrument bar**
Navigation and sensor information. The bar can be turned off and it can be configured by the user.

3 **System controls dialog**
Quick access to basic system settings.
Display the dialog by a short press on the **Power** key or by swiping down from top of the screen.

4 **Status bar**

5 **Dialog**
Information to or input from the user.

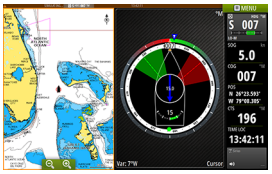
6 **Alarm message**
Displayed if dangerous situations or system faults occur.

7 **Menu**
Panel specific menu.
Display the menu by selecting the **MENU** panel button, or by pressing the **MENU** key on a ZC1 controller.

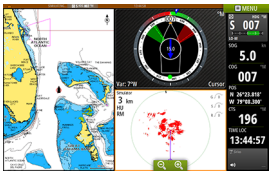
Split pages

You can have several panels on one page depending on screen size:

- 7" units: 2 panels
- 9" and 12": 4 panels



2 panels page



3 panels page



4 panels page

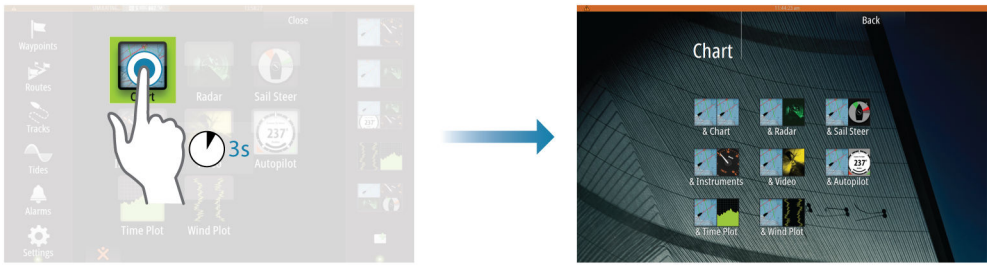
Panel sizes in a split page can be adjusted from the **System Controls** dialog.

Pre-configured split pages

Each full screen application has several pre-configured split pages, featuring the selected application combined with each of the other panels.

→ ***Note:*** The number of pre-configured split pages cannot be changed, and the pages cannot be customized or deleted.

Access a pre-configured split page by pressing and holding the main panel button.



Favorite pages

All preconfigured favorite pages can be modified and deleted, and you can create your own. You can have a total of 12 favorite pages.

For more information, refer to *"Adding new favorite pages"* on page 19.

Integration of 3rd party devices

Several 3rd party devices can be connected to the Zeus2. The applications are displayed on separate panels or integrated with other panels.

A device connected to the NMEA 2000 network should automatically be identified by the system. If not, enable the feature from the advanced option in the System settings dialog.

The 3rd party device is operated by using menus and dialogs as on other panels.

This manual does not include specific operation instructions for any 3rd party device. For features and functionality, refer to the documentation included with the 3rd party device.

FUSION-Link integration

FUSION-Link devices connected to the NMEA 2000 network can be controlled from the Zeus2 system.

The FUSION-Link devices appear as additional sources when using the audio function. No additional icons are available.

Refer to *"Audio"* on page 100 for more information.

FLIR camera integration

If a FLIR camera is available on the Ethernet network, you can display the video and control the camera from the Zeus2.

The FLIR camera is controlled from the Video panel, and no additional icons appear on the Home page.

Refer to *"Video"* on page 109 for more information.

BEP CZone integration

The Zeus2 integrates with BEP's CZone system used for controlling and monitoring a distributed power system on your vessel.

The CZone icon is available in the Tools panel on the **Home** page when a CZone system is available on the network.

A separate manual is provided with your CZone system. Refer to this documentation and to the Zeus2 Installation manual for how to install and configure the CZone system.



CZone dashboard

When the CZone is installed and configured, an additional CZone dashboard is added to the Instruments panels.

You switch between a panel's dashboards by selecting the left and right arrow symbols or by selecting the dashboard from the menu.

Editing a CZone dashboard

You can customize a CZone dashboard by changing the data for each of the gauges. Available editing options depend on the type of gauge and which data sources that are connected to your system.

For more information, refer to *"Instrument panels"* on page 99.

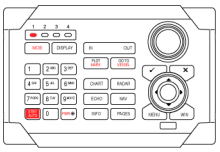
H5000 integration

The Zeus^2 integrates with B&G's H5000 Instrument and Autopilot system.

The H5000 icon will be available in the **Tools** panel on the **Home** page when an H5000 system is available on the network.

A separate manual is provided with the H5000 system. Refer to this documentation and to the Zeus^2 Installation manual for how to install and configure the H5000 system.

Remote controllers



You can connect a ZC1 to the network and remotely control the Zeus^2.

A separate manual is included with the remote controller.

2 Basic operation

Turning the system on and off



You turn the system on and off by pressing and holding the **Power** key. You can also turn the unit off from the **System Controls** dialog.

If the **Power** key is released before the shut-down is completed, the power off process is cancelled.

→ ***Note:*** If the unit is configured as a slave, you cannot power off the unit by the **Power** key, and the **System Controls** dialog does not display the power off option.

First time startup

The first time the unit is started and after a master reset, the system runs through an automatic start-up sequence, including language setup and automatic data source selection.

You can select to interrupt this sequence and later configure the system yourself.

Standby mode



In Standby mode, the backlight for screen and keys are turned off to save power. The system continues to run in the background.

You select Standby mode from the **System Controls** dialog.

Switch from Standby mode to normal operation by a short press on the **Power** key.

Display illumination

Brightness



The display backlighting can be adjusted at any time from the **System Controls** dialog. You can also cycle the preset backlight levels by short presses on the **Power** key.

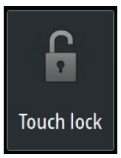
If a ZM monitor is plugged into the HDMI output port on a 12" unit, an additional icon will be added to the **System Controls** dialog. Select this icon to control the brightness of the external monitor.

Night mode

The night mode option optimizes the color palette and backlight for low light conditions.

→ ***Note:*** Details on the chart may be less visible when the Night mode is selected!

Locking the touchscreen



You can temporarily lock a touchscreen to prevent accidental operation of the system. Lock the touchscreen when large amounts of water are on the screen, for example, in heavy seas and weather. This feature is also useful when cleaning the screen while the unit is turned on.

When the touch lock is active you can only operate the unit from the keys.

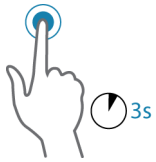
You lock the touchscreen from the **System Controls** dialog.

You remove the lock function by a short press on the **Power** key.

Touchscreen operation

Basic touchscreen operation on the different panels is shown in the table below.

The panel sections in this manual have more information about panel specific touchscreen operation.

Icon	Description
	Tap to: • Activate a panel on a multi-panel page • Position the cursor on a panel • Select a menu and a dialog item • Toggle a checkbox option on or off • Show basic information for a selected item
	Press and hold: • On any panel with a cursor to activate the cursor assist feature • On a panel button to see available split screen options • On a favorite button to enter edit mode
	Scroll through a list of available options without activating any option.
	Flick to quickly scroll through e.g. the waypoint list. Tap the screen to stop the scrolling.
	Pan to position a chart or Echosounder image on the panel.
	Pinch to zoom out on the chart or on an image.
	Spread to zoom in on the chart or on an image.

Using menus and dialogs

Menus

You display a page menu by selecting the **MENU** button in the upper right corner of the page.

- Activate a menu item and toggle on/off an option by selecting it
- Adjust a slide bar value by either:
  - dragging the slide bar
  - selecting the **+** or **-** icons

You can also operate the menus by using the rotary knob:

- Turn the knob to scroll through menu items
- Press the knob to select a highlighted item
- Turn the knob to adjust the value of a selected item

Select the **Back** menu option or the **X** key to return to the previous menu level, and then exit.

You can make the menu slide away by tapping the screen outside the menu area, or by pressing the **MENU** button. When you re-press the **MENU** button, the menu opens in the same status it had before it closed.

The status of the cursor (active vs. inactive) changes the menu options.

Dialog boxes

You select entry fields and keys in a dialog box by tapping the screen or by using the rotary knob.

Numeric and alphanumeric keyboards are automatically displayed when required for entering user information in dialogs. You operate the keyboard by selecting the virtual keys, and you confirm your entry by selecting the virtual **Enter** key or by pressing the rotary knob.

A dialog is closed by saving or cancelling the entry.

A dialog can also be closed by selecting the **X** in the dialog's upper right corner or by pressing the **X** key.

Selecting pages and panels

Selecting a page

- Select a full page panel by selecting the relevant application button on the **Home** page
- Select a favorite page by selecting the relevant favorite button
- Select a predefined split panel by pressing and holding the relevant application icon

Select active panel

In a multiple panel page, only one panel can be active at a time. The active panel is outlined with a border.

You can only access the page menu of an active panel.

You activate a panel by tapping it.

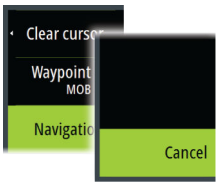
Creating a Man Overboard waypoint

If an emergency situation should occur, you can create a Man Overboard (MOB) waypoint at the vessel's current position by selecting the **MOB** button on the **Home** page.

When you activate the MOB function the following actions are automatically performed:

- a MOB waypoint is created at the vessel's position
- the display switches to a zoomed chart panel, centered on the vessel's position
- the system displays navigation information back to the MOB waypoint

Multiple MOB waypoints are saved by repeatedly pressing the **MOB** buttons. The vessel continues to show navigation information to the initial MOB waypoint. Navigation to subsequent MOB waypoints needs to be done manually.



Cancel navigation to MOB

The system continues to display navigational information towards the MOB waypoint until you cancel the navigation from the menu.

Delete a MOB waypoint

1. Select the MOB waypoint to activate it
2. Tap the MOB waypoint's pop-up or press the **Enter** key or the rotary knob to display the MOB waypoint dialog
3. Select the delete option in the dialog.

A MOB waypoint can also be deleted from the menu when it is activated.

Screen capture

Simultaneously press the **Home** and **Power** keys to take a screen capture. By default, screen captures are saved to internal memory.

Refer to *"Tools"* on page 113 for how to view files.

3

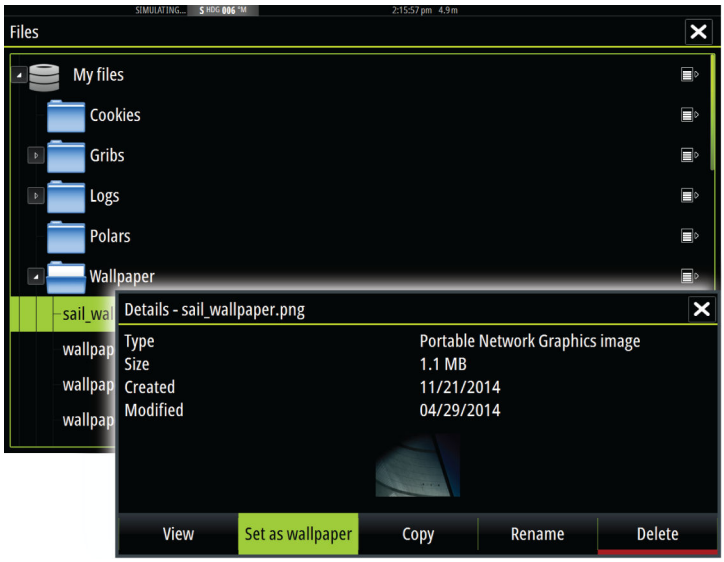
Customizing your system

Customizing the Home page wallpaper

The Home page's wallpaper can be customized. You can select one of the pictures included with the system, or you can use your own picture in .jpg or .png format.

The images can be available on any location that can be seen in the files browser. When a picture is chosen as the wallpaper, it is automatically copied to the Wallpaper folder.

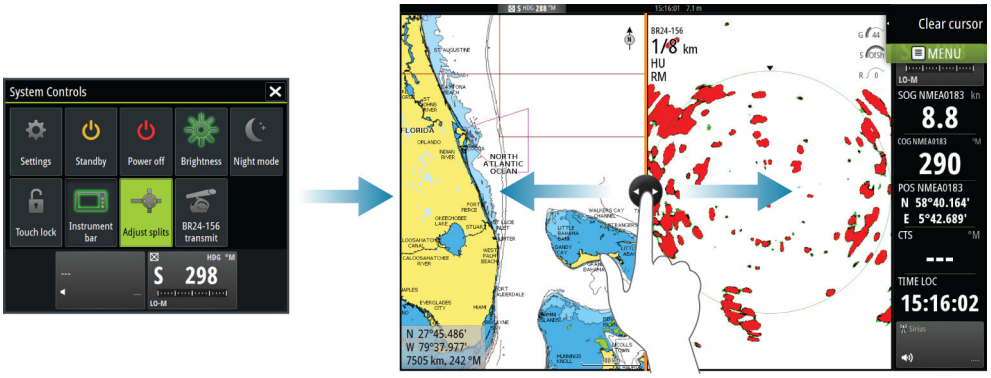




Adjusting panel size

You can change the panel size for an active split page. The panel size can be adjusted for both favorite pages and for predefined split pages.

1. Activate the **System Controls** dialog
2. Select the adjust splits option in the dialog
3. Adjust the panel size by dragging the adjustment icon
4. Confirm your changes by tapping one of the panels, by pressing the rotary knob or the **Enter** key.



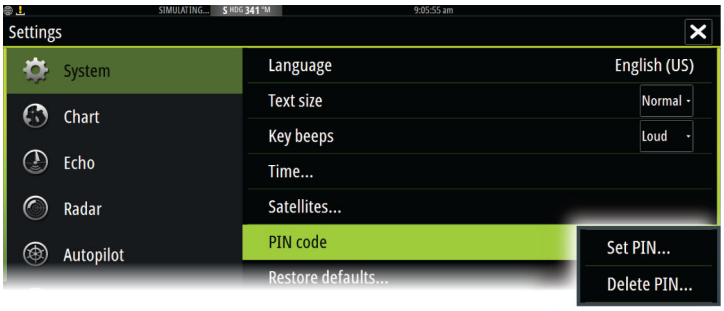
The changes are saved to the active favorite or split page.

Password protection

You can set a PIN code to prevent unauthorized access to your system settings. When you establish password protection, the PIN code must be entered when any of the following are selected. After the correct PIN code is entered, all of them can be accessed without re-entering the PIN code.

- Settings, activated from the Tools panel or System Controls dialog

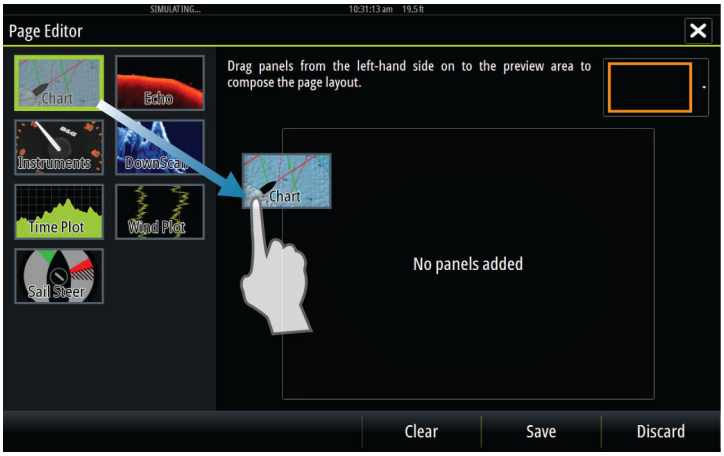
- Alarms, activated from the Tools panel
- Files, activated from the Tools panel
- GoFree Shop, activated from the Tools panel
- Settings, activated from the Chart menu under Chart Options
  You set and remove password protection from the system Settings dialog.



Adding new favorite pages

1. Select the **New** icon in the favorite panel on the **Home** page to open the page editor dialog
2. Drag and drop page icons to set up a new page
3. Change the panel arrangement (only possible for 2 or 3 panels), if required.
4. Save the page layout

The system displays the new favorite page, and the new page is included in the list of favorite pages on the **Home** page.



Edit favorite pages

1. Select the edit icon in the Favorite panel:
   - Select the X icon for a favorite icon to remove the page
   - Select the tool icon for a favorite icon to display the page editor dialog
2. Add or remove panels in the page editor dialog.
3. Save or discard your changes to leave the favorite edit mode.

Setting the appearance of the Instrument bar

Data sources connected to the system can be viewed in the Instrument bar.

You can configure the Instrument bar to display either one or two bars. If you specify to display two bars you can set it to alternate the bars automatically.

You can specify the information displayed in the instrument bars.

You can turn the Instrument bar off from the **System controls** dialog.

→ ***Note:*** This only turns the Instrument bar off for the current page.

Turning the Instrument bar on/off

1. Activate the **System controls** dialog
2. Deactivate/activate the instrument bar icon to toggle the bar on and off.

Edit the content of the Instrument bar

1. Activate the Instrument bar by selecting it
2. Select the **MENU** button to open the menu
3. Select **Edit** to change an instrument gauge followed by the gauge you want to change
4. Select the content you want to display from the Choose Data dialog

→ ***Note:*** You can configure Bar 1 for the active page or for all pages except those that have a local configuration. Bar 2 can only be configured for the active page.

5. Select **Menu** and then **Finish editing** to save your changes.

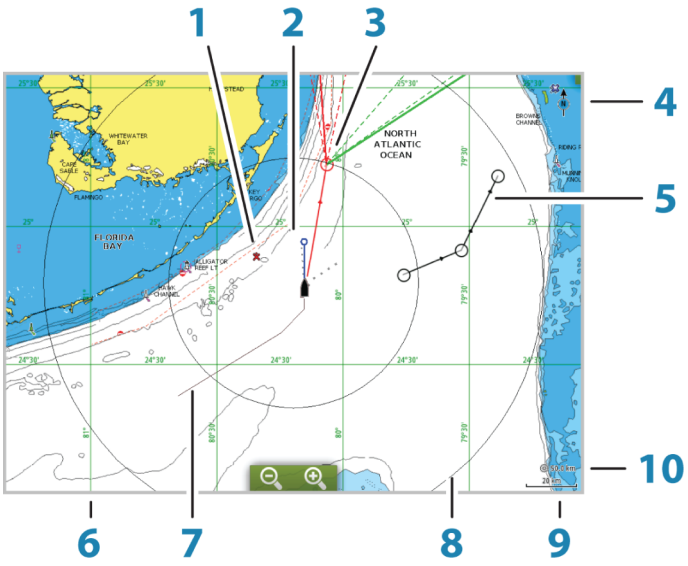
4

Charts

The chart function displays your vessel's position relative to land and other chart objects. On the chart panel you can plan and navigate routes, place waypoints, and display AIS targets.

You can overlay a radar image, a StructureScan image or weather information.

The Chart panel



1	MOB (Man Over Board) mark
2	Vessel with extension line (extension line is optional)
3	Waypoint with Laylines*
4	North indicator
5	Route*
6	Grid lines*
7	Track*
8	Range rings*
9	Chart range scale
10	Range rings interval (only displayed when Range rings are turned on)

* Optional chart items. You turn the optional images on/off individually from the Chart settings dialog.

Chart data

The system is delivered with different embedded cartography depending on region.

All units support Insight charts from Navico including Insight Genesis. The system also supports charts from Navionics and Jeppesen as well as content created by a variety of third party mapping providers in the AT5 format. For a full selection of available charts, visit gofreeshop.com, c-map.jeppesen.com, or navionics.com.

→ ***Note:*** In this manual, all possible chart menu options are described. These options vary depending on the chart you are using.

Charts on chart cards are shared over the Ethernet network, so only one chart card per vessel is required.

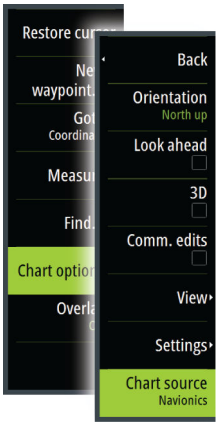
→ ***Note:*** The system does not automatically switch to embedded cartography if the chart card is removed. A low-resolution chart will be displayed until you re-insert the card or manually switch back to the embedded cartography.

Showing dual chart types

If you have different chart types available - embedded, in the card slot, or on the Ethernet network - you can show two different chart types simultaneously on a page with two chart panels.

You can select a dual chart panel by pressing and holding the Chart application button on the **Home** page, or by creating a favorite page with two chart panels.

Selecting chart type



You specify the chart type in the Chart panel by selecting one of the available chart types in the chart source menu option. If you have a multiple Chart panel, the chart type is set individually for each chart panel. Activate one of the chart panels, and then select one of the available chart types in the chart source menu option. Repeat the process for the second chart panel, and select an alternative chart type for this panel.

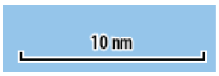
If you have identical charts available - built in, in the card slot or on the Ethernet network - the system automatically selects the chart with most chart details for your displayed region.

Panning the chart

You can move the chart in any direction by dragging your finger on the screen.

Select the **Clear cursor** menu option or press the **X** key to remove the cursor and cursor window from the panel. This also centers the chart to the vessel position.

Chart scale



You zoom in and out on the chart by using the zoom panel icons, the rotary knob, or by using 2 fingers to pinch (zoom out) and spread (zoom in).

Chart range scale and range rings interval (when turned on) are shown in the lower right corner of the chart panel.

Vessel symbol

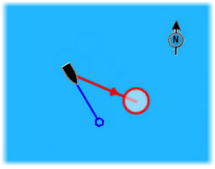


When the Zeus^2 has a valid GPS position lock, the vessel symbol indicates vessel position. If no GPS position is available, the vessel symbol includes a question mark.

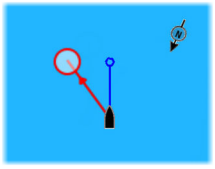
Positioning the vessel on the chart panel

Chart orientation

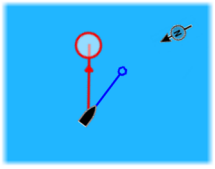
Several options are available for how the chart is rotated in the panel. The chart orientation symbol in the panel's upper right corner indicates the north direction.



North up



Heading up



Course up

North up
Displays the chart with north upward.

Heading up
Displays the chart with the vessel's heading directed upward. Heading information is received from a compass. If heading is not available, then the COG from the GPS is used.

Course up
Rotates the chart in the direction of the next waypoint when navigating a route or navigating to a waypoint. If not navigating the heading up orientation is used until navigation is started.

Look ahead

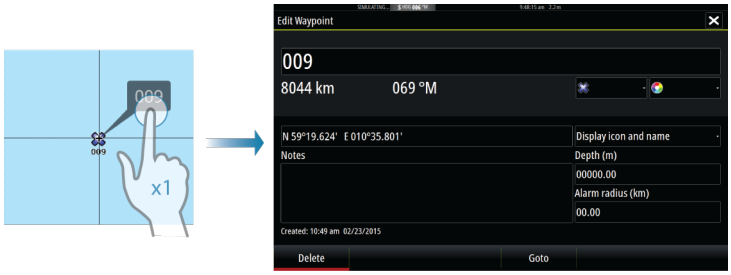
Moves the vessel icon closer to the bottom of the screen so that you can maximize your view ahead.

Displaying information about chart items

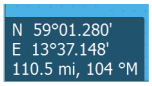
When you select a chart item, a waypoint, a route, or a target, basic information for the selected item is displayed. Select the chart item's pop-up to display all available information for that item. You can also activate the detailed information dialog from the menu.

→ ***Note:*** If you are viewing applicable Jeppesen charts on your system, you can select marine objects to display information about services and available multimedia (photos) associated with the location or object.

→ ***Note:*** Pop-up information has to be enabled in chart settings to see basic item information.



Using the cursor on the chart panel



By default, the cursor is not shown on the chart panel.

When you activate the cursor, the cursor position window is displayed. When the cursor is active, the chart does not pan or rotate to follow the vessel.

Press the **X** key or select the **Clear cursor** menu option to remove the cursor and the cursor window from the panel. This also centers the chart to the vessel position.

Select the **Restore cursor** menu option to display the cursor in its previous location. The **Clear cursor** and **Restore cursor** options are useful features for toggling between the vessel's current location and the cursor position.

GoTo cursor

You can navigate to a selected position on the image by positioning the cursor on the panel, then using the **Goto Cursor** option in the menu.

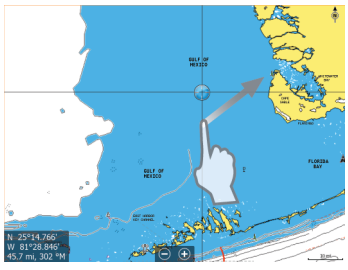
The Cursor assist function

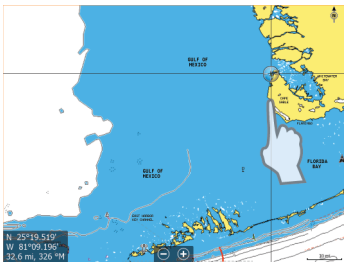
The cursor assist function allows for fine tuning and precision placement of the cursor without covering details with your finger.

Press and hold your finger on the screen to switch the cursor symbol to a selection circle, appearing above your finger.

Without removing your finger from the screen, drag the selection circle over the desired item to display item information.

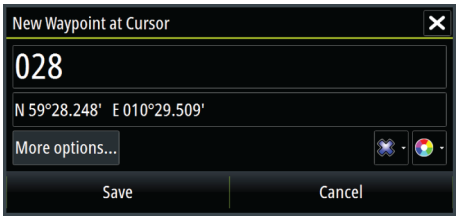
When you remove your finger from the screen the cursor reverts to normal cursor operation.





Saving waypoints

You can save a waypoint at a selected location by positioning the cursor on the panel, and then selecting the new waypoint option in the menu.



In the Chart and Nav panels, you can save a waypoint at the vessel position, when the cursor is not active, by selecting the new waypoint option in the menu.

If your unit has a **MARK** key, you can press this key to immediately save a waypoint. If the cursor is active, the waypoint is saved at the cursor position. If the cursor is not active, the waypoint is saved at your vessel's position.

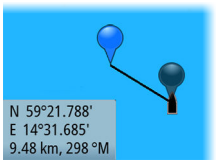
Creating routes

You can create routes as follows on the chart panel.

1. Position the cursor on the chart panel.
2. Select **New** followed by **New route** in the menu.
3. Tap the chart panel to position the first routepoint.
4. Continue positioning the remaining routepoints.
5. Save the route by selecting the save option in the menu.

→ ***Note:*** For more information, refer to *"Waypoints, Routes, and Tracks"* on page 39.

Measuring distance



The cursor can be used to measure the distance between your vessel and a selected position, or between 2 points on the chart panel.

1. Position the cursor on the point from where you want to measure the distance.
2. Start the measure function from the menu.
   - The measuring icons appear with a line drawn from the vessel center to the cursor position, and the distance is listed in the cursor information window.
3. You can reposition the measuring points by dragging either icon as long as the measuring function is active.

→ ***Note:*** The bearing is always measured from the grey icon to the blue icon.

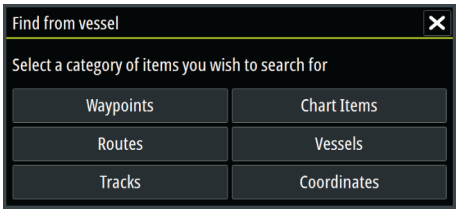
You can also start the measuring function without an active cursor. Both measuring icons are then initially located at the vessel position. The grey icon follows the vessel as the vessel moves, while the blue icon remains at the position given when you activated the function.

You terminate the measuring function by selecting the **Finish measuring** option or by pressing the **X** key.

Find objects on chart panels

You can search for other vessels or various chart items from a chart panel.

Activate the cursor on the panel to search from the cursor position. If the cursor is not active, the system searches for items from the vessel's position.



→ ***Note:*** You must have a SIRIUS data package subscription to search for fueling stations and an AIS receiver connected to search for vessels.

3D charts

The 3D option provides a three dimensional graphical view of land and sea contours.

→ ***Note:*** All chart types work in 3D mode, but without 3D cartography for the appropriate area the chart appears flat.

When the 3D chart option is selected, the Pan and the Rotate icons appear on the chart panel.

Panning the 3D chart



You can move the chart in any direction by selecting the Pan icon and then panning in the desired direction.

Press the **X** key or select the **Return to vessel** menu option to stop panning, and to center the chart to vessel position.

Controlling the view angle



You can control the view angle by selecting the Rotate icon and then panning the chart panel.

- To change the direction you are viewing, pan horizontally
- To change the tilt angle of the view, pan vertically

→ ***Note:*** When centered on the vessel position, only the tilt angle can be adjusted. The view direction is controlled by the chart orientation setting. See *"Positioning the vessel on the chart panel"* on page 22.

Zooming a 3D chart

You zoom in and out on a 3D chart by using the zoom panel icons or the rotary knob.

Chart overlay

Radar, Structure, and Weather information can be displayed as overlay on your chart panel.

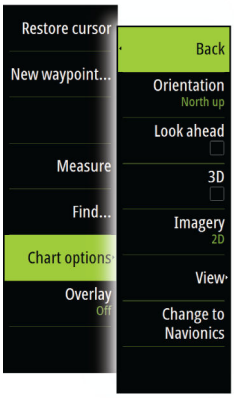
When an overlay is selected, the chart menu expands to include basic functions for the selected overlay.

Radar, Structure, and Weather functions are described in separate sections in this manual.

→ ***Note:*** You can overlay the SailSteer image on the Chart. For more information, refer to *"SailSteer overlay"* on page 44.

Insight charts

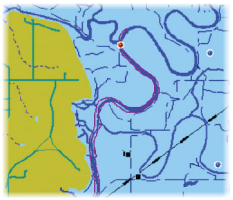
Insight specific chart options



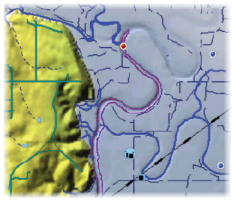
Orientation, Look ahead, 3D, and change Chart source (previously described in this section) are common for all chart types.

Chart imagery style

The charts can be displayed in three imagery styles.



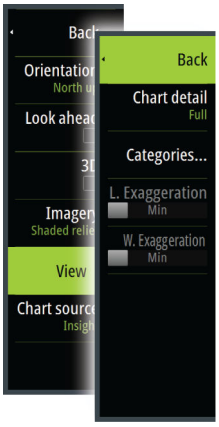
2D mapping style



Shaded relief



No contours



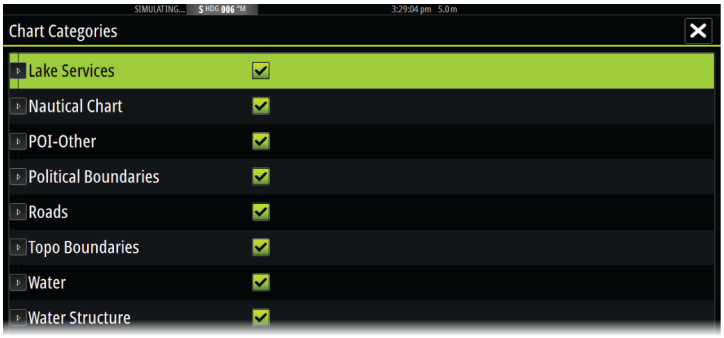
Insight view options

Chart detail

- **Full**
  All available information for the chart in use.
- **Medium**
  Minimum information sufficient for navigation.
- **Low**
  Basic level of information that cannot be removed, and includes information that is required in all geographic areas. It is not intended to be sufficient for safe navigation.

Insight chart categories

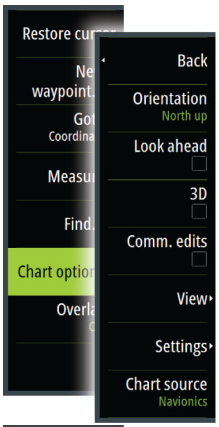
Insight charts include several categories and sub-categories that you can turn on/off individually depending on which information you want to see.



Land Exaggeration and Water Exaggeration

Graphical settings available in 3D mode only. Exaggeration is a multiplier applied to the drawn height of hills on land, and troughs in water to make them look taller or deeper.

Navionics charts



Navionics specific chart options

Orientation, Look ahead, 3D and change Chart source (previously described in this section) are common for all chart types.

Community edits

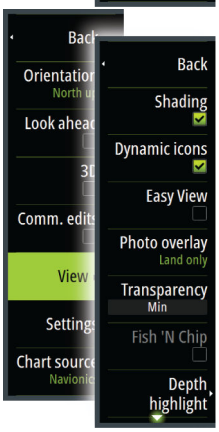
Toggles on the chart layer including Navionics edits. These are user information or edits uploaded to Navionics Community by users, and made available in Navionics charts.

For more information, refer to Navionics information included with your chart, or to Navionics website: www.navionics.com.

Navionics view options

Chart shading

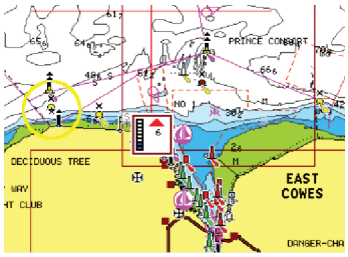
Shading adds terrain information to the chart.



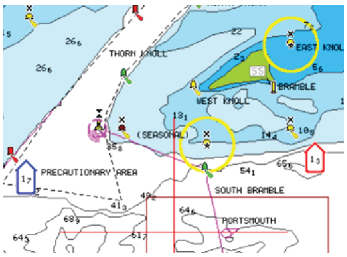
Navionics dynamic tide and current icons

Shows tides and currents with a gauge and an arrow instead of the diamond icons used for static tides and current information.

The tide and current data available in Navionics charts are related to a specific date and time. The system animates the arrows and/or gauges to show the tides and currents evolution over time.



Dynamic tide information



Dynamic current information

The following icons and symbology are used:



Current speed
The arrow length depends on the rate, and the symbol is rotated according to flow direction. Flow rate is shown inside the arrow symbol. The red symbol is used when current speed is increasing, and the blue symbol is used when current speed is decreasing.



Tide height
The gauge has 8 labels and is set according to absolute max/min value of the evaluated day. The red arrow is used when tide is rising, and the blue arrow is used when tide is falling.

➔ ***Note:*** All numeric values are shown in the relevant system units (unit of measurement) set by user.

Easy View

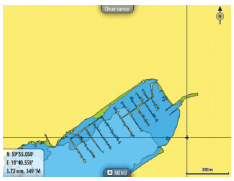
Magnifying feature that increases the size of chart items and text.

➔ ***Note:*** There is no indication on the chart showing that this feature is active.

Photo overlay

Photo overlay enables you to view satellite photo images of an area as an overlay on the chart. The availability of such photos is limited to certain regions, and cartography versions.

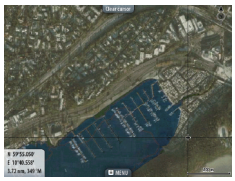
You can view photo overlays in either 2D or 3D modes.



No Photo overlay



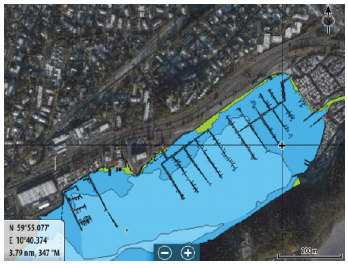
Photo overlay, land only



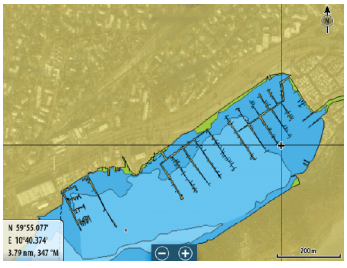
Full Photo overlay

Photo transparency

The Photo transparency sets the opaqueness of the photo overlay. With minimum transparency settings the chart details are almost hidden by the photo.



Minimum transparency



Maximum transparency

Navionics Fish N' Chip

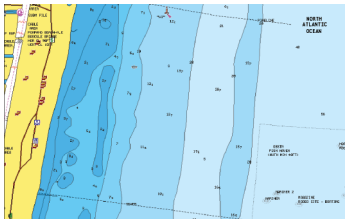
The system supports Navionics Fish N' Chip (U.S. only) chart feature.

For more information, see www.navionics.com.

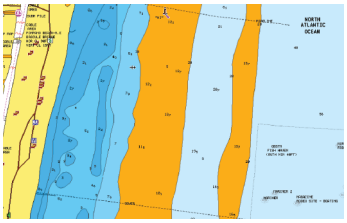
Depth highlight range

Select a range of depths between which Navionics fills with a different color.

This allows you to highlight a specific range of depths for fishing purposes. The range is only as accurate as the underlying chart data, meaning that if the chart only contains 5 meter intervals for contour lines, the shading is rounded to the nearest available contour line.



No Depth highlight range

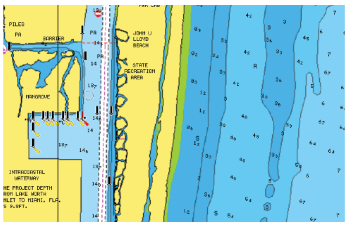


Depth highlight range: 6 m - 12 m

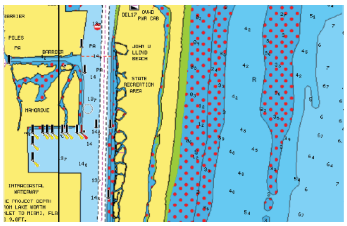
Shallow water highlight

Highlights areas of shallow water.

This allows you to highlight areas of water between 0 and the selected depth (up to 10 meters/30 feet).

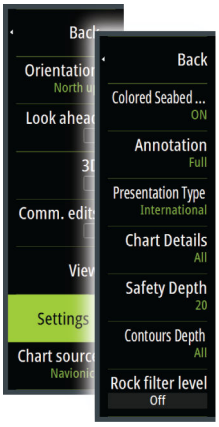


No shallow water highlighted



Shallow water highlight: 0 m - 3 m

Navionics chart settings



Colored seabed areas

Used for displaying different depth areas in different shades of blue.

Presentation type

Provides marine charting information such as symbols, colors of the navigation chart and wording for either International or U.S. presentation types.

Annotation

Determines what area information, such as names of locations and notes of areas, is available to display.

Chart details

Provides you with different levels of geographical layer information.

Safety depth

The Navionics charts use different shades of blue to distinguish between shallow and deep water.

Safety depth, based on a selected limit, is drawn without blue shading.

→ ***Note:*** The built in Navionics database features data down to 20 m, after which it is all white.

Contours depth

Determines which contours you see on the chart down to the selected safety depth value.

Rock filter level

Hides rock identification on the chart beneath a given depth.

This helps you to declutter charts in areas where there are many rocks located at depths well below your vessel's draught.

Jeppesen charts

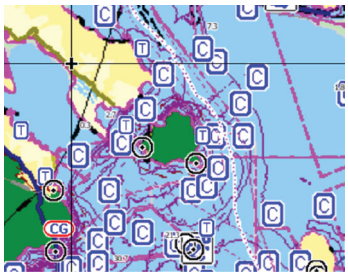
Jeppesen tides and currents

The system can display Jeppesen tides and currents. With this information it is possible to predict the time, level, direction and strength of currents and tides. This is an important tool when considering planning and navigation of a trip.

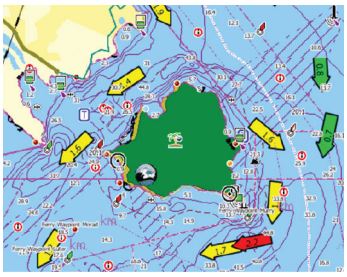
In large zoom ranges the tides and currents are displayed as a square icon including the letter **T** (Tides) or **C** (Current). When you select one of the icons, tidal or current information for that location are displayed.

Dynamic current data can be viewed by zooming inside a 1-nautical mile zoom range. At that range, the Current icon changes to an animated dynamic icon that shows the speed and direction of the current. Dynamic icons are colored in black (greater than 6 knots), red (greater than 2 knots and less than or equal to 6 knots), yellow (greater than 1 knot and less than or equal to 2 knots) or green (equal to or less than 1 knot), depending on the current in that location.

If there is no current (0 knots) this will be shown as a white, square icon.

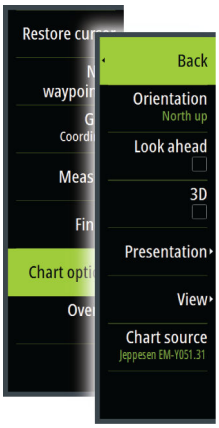


Static Current and Tide icons



Dynamic Current icons

Jeppesen specific chart options



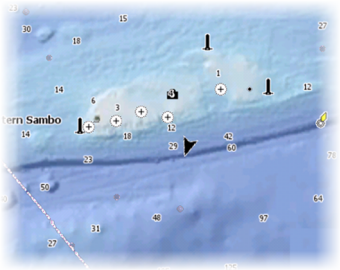
Orientation, Look ahead, 3D, and change Chart source (previously described in this section) are common for all chart types.

Presentation

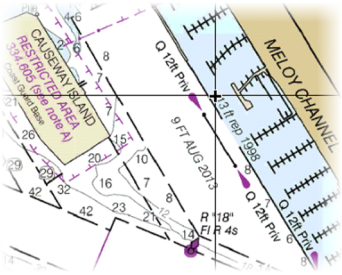
The charts can be displayed in different imagery styles.



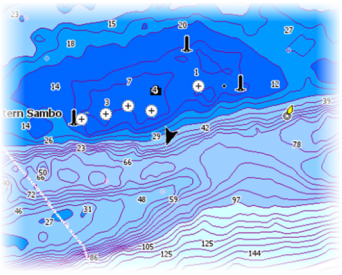
Shaded relief



No contours



Raster imagery



High resolution bathymetry

Shaded relief
Shades seabed terrain.

No contours
Removes contour lines from the chart.

Raster charts
Changes the view to that of a traditional paper chart.

Raster transparency
Controls the transparency of raster imagery.

High resolution bathymetry
Enables and disables higher concentration of contour lines.

Jeppesen view options

Chart detail

- **Full**
  All available information for the chart in use.
- **Medium**
  Minimum information sufficient for navigation.
- **Low**
  Basic level of information that cannot be removed, and includes information that is required in all geographic areas. It is not intended to be sufficient for safe navigation.

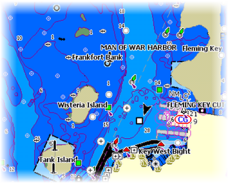
Jeppesen chart categories

Jeppesen charts include several categories and sub-categories that you can turn on/off individually depending on which information you want to see.

Photo overlay

Photo overlay enables you to view satellite photo images of an area as an overlay on the chart. The availability of such photos is limited to certain regions, and cartography versions.

You can view photo overlays in either 2D or 3D modes.



No Photo overlay



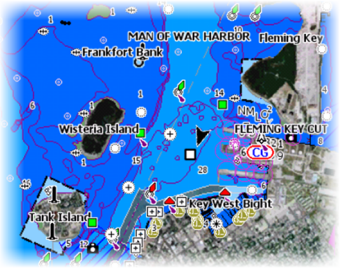
Photo overlay, land only



Full Photo overlay

Photo transparency

The Photo transparency sets the opaqueness of the photo overlay. With minimum transparency settings the chart details are almost hidden by the photo.



Minimum transparency



Transparency at 80

When zooming in, the sea floor is kept near the bottom of the screen, irrespective of whether it is in auto-range or manual range.

If the range is set considerably less than the actual depth, the unit is not able to find the bottom when zooming.

If the cursor is active, the unit zooms in where the cursor is pointed.

Zoom bar

The zoom bar is displayed when you zoom the Echosounder image.

Drag the zoom bar vertically to view different parts of the water column.

Using the cursor on the Echosounder panel

The cursor can be used to measure a distance to a target, to mark a position, and to select targets.

By default, the cursor is not shown on the Echosounder image.

When you position the cursor on the Echosounder image; the screen pauses, the depth at the cursor position is shown, and the information window and the history bar are activated.

To remove the cursor and cursor elements from the panel, select **Clear cursor** or press the **X** key.

GoTo cursor

You can navigate to a selected position on the image by positioning the cursor on the panel, then using the **Goto Cursor** option in the menu.

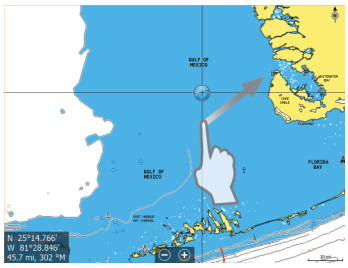
The Cursor assist function

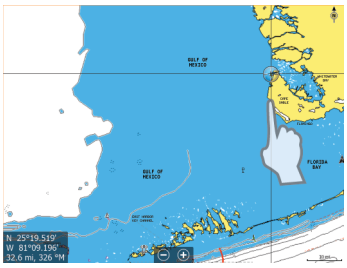
The cursor assist function allows for fine tuning and precision placement of the cursor without covering details with your finger.

Press and hold your finger on the screen to switch the cursor symbol to a selection circle, appearing above your finger.

Without removing your finger from the screen, drag the selection circle over the desired item to display item information.

When you remove your finger from the screen the cursor reverts to normal cursor operation.





Measuring distance

The cursor can be used to measure the distance between the position of two observations on the image.

It is easier to use the measuring function when the image is paused.

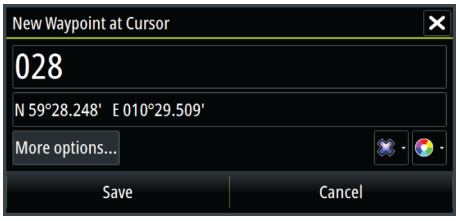
1. Position the cursor on the point from where you want to measure the distance
2. Start the measuring function from the menu
3. Position the cursor on the second measuring point
   - A line is drawn between the measuring points, and the distance is listed in the Information window
4. Continue selecting new measuring points if required

You can use the menu to re-position the start point and the end point as long as the measuring function is active.

When you select **Finish measuring** or press the **X** key, the image resumes to normal scrolling.

Saving waypoints

You can save a waypoint at a selected location by positioning the cursor on the panel, and then selecting the new waypoint option in the menu.



In the Chart and Nav panels, you can save a waypoint at the vessel position, when the cursor is not active, by selecting the new waypoint option in the menu.

If your unit has a **MARK** key, you can press this key to immediately save a waypoint. If the cursor is active, the waypoint is saved at the cursor position. If the cursor is not active, the waypoint is saved at your vessel's position.

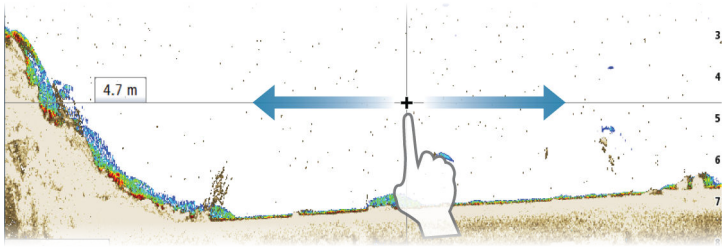
Viewing Echosounder history

Whenever the cursor is shown on the Echosounder panel, the scroll bar is shown at the top of the panel. The scroll bar shows the image you are currently viewing in relation to the total Echosounder image history stored.

If the scroll bar is on the far right side, it indicates that you are viewing the latest soundings. If you position the cursor to the left side of the screen, the history bar starts scrolling towards the left, and the automatic scrolling as new soundings are received is turned off.

You can view echosounder history by panning the image.

To resume normal scrolling, select **Clear cursor** or press the **X** key.



Setting up the Echosounder image

Use the Echosounder menu options to set up the image. When the cursor is active, some options on the Echosounder menu are replaced with cursor mode features. Select **Clear cursor** to return to the normal Echosounder menu.

The range

The range setting determines the water depth that is visible on the screen.

Auto range

By default, the range is set to Auto. With Auto, the system automatically displays the whole range from the water surface to the bottom. Auto is the preferred setting for most fish finding sonar use.

Preset range levels

Allows for the selection of a specific depth range that is not tied to the depth of the water.

Custom range

This option allows you to manually set both upper and lower range limits.

➔ ***Note:*** Setting a custom range puts the sonar in manual mode. If the bottom is well beyond the lower range set, you may lose digital depth.

Echosounder frequency

The Zeus^2 unit supports several transducer frequencies. Available frequencies depend on the transducer model that is connected.

You can view two frequencies at the same time by selecting dual Echosounder panels from the **Home** page.

Color and gain settings

Gain and Color control images are located in the left side of the Echosounder panel. You activate the control by tapping the image. Active control expands and displays its name in full. You can then adjust the value by using the slide bar.

You can also adjust the image settings from the Echosounder menu.

Gain

The gain controls the sensitivity of the Echosounder.

The more you increase the gain, the more details are shown on the image. However, a higher gain setting may introduce more background clutter on the image. If the gain is set too low, weak echoes might not be displayed.

Auto gain

The Auto gain option keeps the sensitivity at a level that works well under most conditions.

With the gain in auto mode, you can set a positive or negative offset that gets applied to the auto gain.

Color

Strong and weak echo signals have different colors to indicate the different signal strengths. The colors used depend on which palette you select.

The more you increase the Color setting, the more echoes is displayed in the color at the strong return end of the scale.

Pausing the Echosounder

You can pause the Echosounder, allowing you to examine the Echosounder echoes.

This function is useful when you need to position a waypoint exactly on the Echosounder panel, and if you are using the cursor to measure a distance between 2 elements on the image.

Advanced Echosounder options

The Advanced option is only available when the cursor is not active.

Noise rejection

Signal interference from bilge pumps, engine vibration and air bubbles can clutter the image.

The noise rejection option filters the signal interference and reduces the on-screen clutter.

TVG

The TVG (Time Variable Gain) option compensates for distance to the object, making echoes from equal sized objects appear with the same size on the echosounder image.

Scroll speed

You can select the scrolling speed of the Echosounder image on the screen. A high scroll speed updates the image fast, while a low scroll speed presents a longer history.

➔ ***Note:*** In certain conditions it may be necessary to adjust the scroll speed to get a more useful image. Such as adjusting the image to a faster speed when vertically fishing without moving.

Ping speed

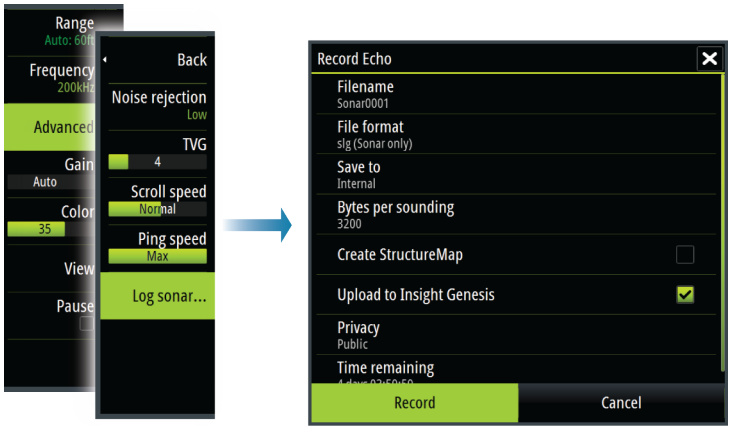
Ping speed controls the rate the transducer transmits the Echosounder signal into the water. By default, the ping speed is set to max. It may be necessary to adjust the ping speed to limit interference or to adjust for specific fishing conditions.

Start recording log data

You can start recording of Echosounder and StructureScan log data and save the file internally in the Zeus^2 unit, or save it onto a card inserted into the unit's card reader.

The function is activated from the **Advanced** menu option.

When the data is being recorded, there is a flashing red symbol in the top left corner and a message appears periodically at the bottom of the screen.



Filename

Specify the name of the recording (log).

File format

Select a file format from the drop-down, slg (Echosounder only), xtf (Structure only*), sl2 (Echosounder and Structure) or sl3 (includes ForwardScan).

→ ***Note:*** XTF format is for use only with select 3rd party Echosounder viewing tools.

Save to

Select whether the recording is to be saved internally or to a memory card in the card reader.

Bytes per sounding

Select how many bytes per seconds that are to be used when saving the log file. More bytes yield better resolution, but cause the record file to increase in size compared to using lower byte settings.

Create StructureMap

If StructureScan is available on the network, you can convert the .sl2 logs to StructureMap format (.smf) when recording completes. The log file can also be converted to StructureMap format from the Files option.

Upload to Insight Genesis

Files are transmitted to Insight Genesis when recording completes, if you are connected to a wireless hotspot. For information about wireless hotspots, refer to *"Wireless connection"* on page 91.

Privacy

If allowed by your selected Insight Genesis account, you can choose between setting the recorded log files as Private or Public at Insight Genesis.

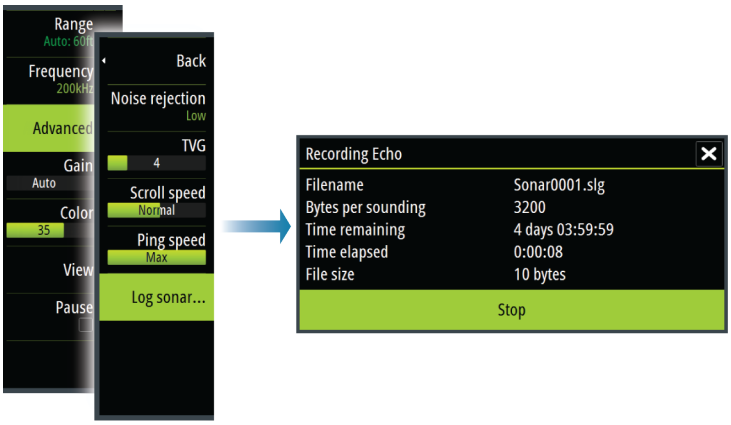
Time remaining

Shows the remaining allocated space available for recordings.

Stop recording log data

Select **Stop** in the Recording Echo dialog to fully stop the recording of all echosounder data.

→ ***Note:*** If you have selected the **Upload to Insight Genesis** option and are connected to a wireless hotspot, your recorded files are transmitted to Insight Genesis when you select **Stop**.



Viewing the recorded sounder data

Both internally and externally stored sounder records may be reviewed when selected.

The log file is displayed as a paused image, and you control the scrolling and display from the replay menu option.

You can use the cursor on the replay image, and pan the image as on a normal echo image.

If more than one channel was recorded in the selected echo file, you can select which channel to display.

You exit the replay mode by pressing the **X** key or by selecting the **X** symbol in the upper right corner of the replay image.

Echosounder View options

Split screen options

Zoom

The Zoom mode presents a magnified view of the sounder image on the left side of the panel.

By default the zoom level is set to 2x. You can select up to 8x zoom from the drop-down menu, using the **+/-** keys, or the zoom (**+** or **-**) buttons.

The range zoom bars on the right side of the display shows the range that is magnified. If you increase the zooming factor the range is reduced. You see this as reduced distance between the zoom bars.

Bottom lock

The bottom lock mode is useful when you want to view echoes close to the bottom. In this mode the left side of the panel shows an image where the bottom is flattened. The range scale is changed to measure from the seabed (0) and upwards. The bottom and the zero line are always shown on the left image, independent of the range scale. The scaling factor for the image on the left side of the panel is adjusted as described for the Zoom option.

Palettes

You can select between several display palettes optimized for a variety of fishing conditions.

Temperature graph

The temperature graph is used to illustrate changes in water temperature.

When toggled on, a colored line and temperature digits are shown on the Echosounder image.

Depth line

A depth line can be added to the bottom surface to make it easier to distinguish the bottom from fish and structures.

A-Scope

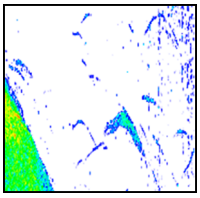
The A-scope is a display of real-time echoes as they appear on the panel. The strength of the actual echo is indicated by both width and color intensity.

Zoom bars

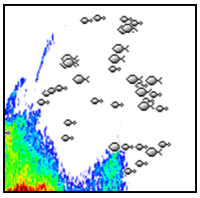
The zoom bars shows the range that is magnified on a split panel with zoom view.

Fish ID

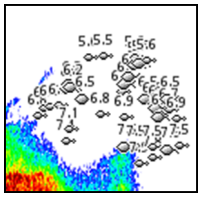
You can select how you want the echoes to appear on the screen. You can also select if you want to be notified by a beep when a fish ID appears on the panel.



Traditional fish echoes



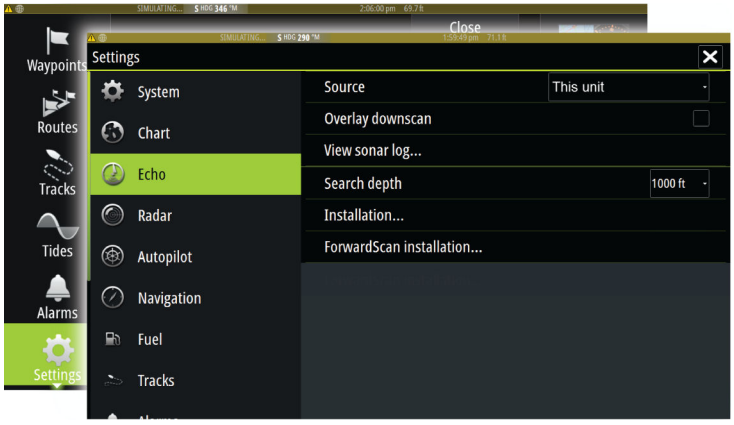
Fish symbols



Fish symbols and depth indication

→ ***Note:*** Not all fish symbols are actual fish.

Echosounder settings



Echosounder source

If you have Network Echosounder enabled, you can select which Echosounder to be the preferred source on this Zeus^2 unit.

Network Echosounder

You can share the Echosounder connected to this Zeus^2 unit on the network.

For more information about how to setup Echosounder, refer to the separate Zeus^2 Installation manual.

Overlay downscan

When a DownScan source is connected to your system, you can overlay DownScan images on the regular Echosounder image.

When activated, the Echosounder menu expands to include basic DownScan options.

View Echosounder log

Used to view Echosounder recordings. The log file is displayed as a paused image, and you control the scrolling and display from the menu.

You can use the cursor on the image, measure distance, and set view options as on a live Echosounder image. If more than one channel was recorded in the selected Echosounder file, you can select which channel to display.

You exit the view function by selecting the **X** in the upper right corner.

Search depth

Noise may cause the Echosounder to search for unrealistic depths.

By setting the search depth manually the system displays echoes received from objects within the set depth range.

Installation

Used for installation and setup. See the separate Zeus^2 Installation manual.

ForwardScan Installation

Used for ForwardScan installation and setup. Refer to the *"ForwardScan setup"* on page 89.

13 StructureScan

StructureScan HD uses high frequencies to provide a high resolution, picture-like image of the seabed.

StructureScan provides a 150 m (480 ft) wide coverage in high detail with SideScan, while the DownScan provides picture perfect images of structure and fish directly below your boat, down to 90 m (300 ft).

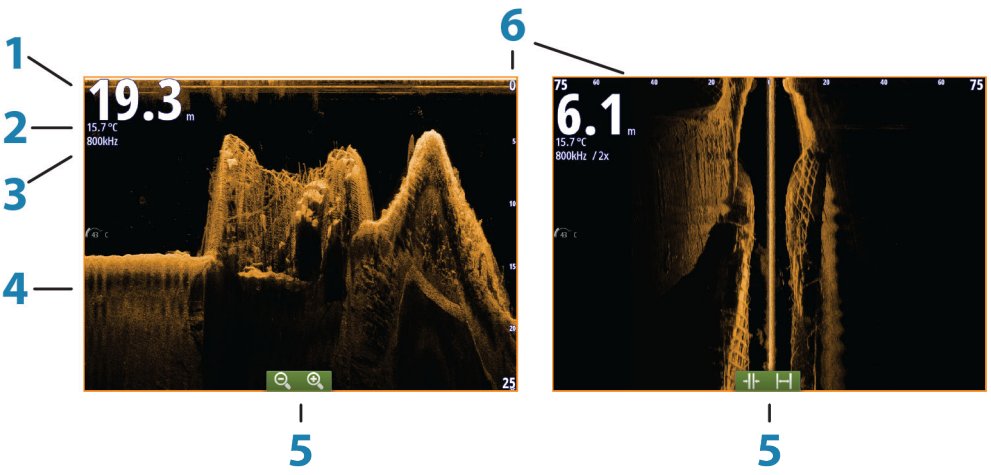
StructureScan is not integrated in Zeus^2. You must have a compatible external StructureScan module available on the network to use the StructureScan features.

The StructureScan image

The view

The StructureScan panel can be set up as a DownScan image, or showing left/right side scanning.

The DownScan image can also be added as an overlay to the traditional Echosounder image.



1	Depth
2	Temperature
3	Frequency
4	Bottom
5	Zoom (downscan) / Range (sidescan) icons
6	Range scale

Zooming the StructureScan image

You can zoom a StructureScan image by:

- turning the rotary knob when the cursor is not active
- using the panel zoom icons
- by pinching or spreading on the screen

Zoom level is shown on the upper left side of the panel.

Using the cursor on the StructureScan panel

By default, the cursor is not shown on the StructureScan image.

When you position the cursor on a DownScan image; the screen pauses, the cursor information window and the history bar are activated. On a DownScan image, the depth is shown at cursor position.

When you position the cursor on a SideScan image; the screen pauses, and the cursor information window is activated. On a SideScan image, the left/right distance from the vessel to the cursor are shown at the cursor position.

To remove the cursor and the cursor elements from the panel, press the **X** key or select the **Clear cursor** option.

GoTo cursor

You can navigate to a selected position on the image by positioning the cursor on the panel, then using the **Goto Cursor** option in the menu.

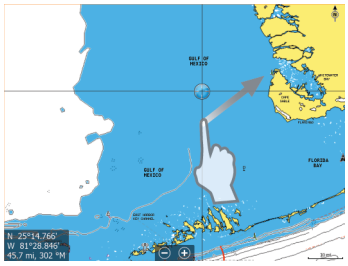
The Cursor assist function

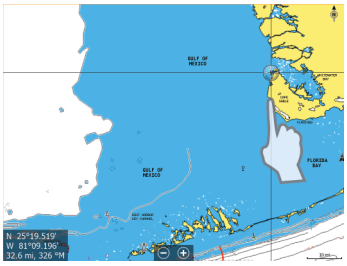
The cursor assist function allows for fine tuning and precision placement of the cursor without covering details with your finger.

Press and hold your finger on the screen to switch the cursor symbol to a selection circle, appearing above your finger.

Without removing your finger from the screen, drag the selection circle over the desired item to display item information.

When you remove your finger from the screen the cursor reverts to normal cursor operation.





Measuring distance

The cursor can be used to measure the distance between the position of two observations on the image.

It is easier to use the measuring function when the image is paused.

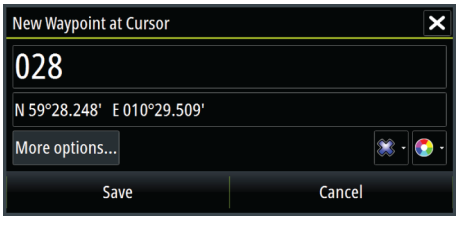
1. Position the cursor on the point from where you want to measure the distance
2. Start the measuring function from the menu
3. Position the cursor on the second measuring point
   - A line is drawn between the measuring points, and the distance is listed in the Information window
4. Continue selecting new measuring points if required

You can use the menu to re-position the start point and the end point as long as the measuring function is active.

When you select **Finish measuring** or press the **X** key, the image resumes to normal scrolling.

Saving waypoints

You can save a waypoint at a selected location by positioning the cursor on the panel, and then selecting the new waypoint option in the menu.



In the Chart and Nav panels, you can save a waypoint at the vessel position, when the cursor is not active, by selecting the new waypoint option in the menu.

If your unit has a **MARK** key, you can press this key to immediately save a waypoint. If the cursor is active, the waypoint is saved at the cursor position. If the cursor is not active, the waypoint is saved at your vessel's position.

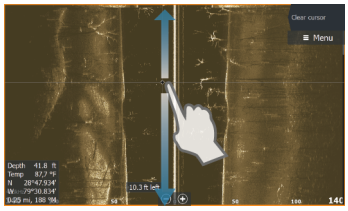
Viewing StructureScan history

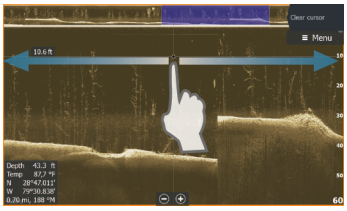
Whenever the cursor is active on a StructureScan panel, the scroll bar is shown on the panel. The scroll bar shows the image you are currently viewing in relation to the total StructureScan image history stored.

Depending on the view selected, the scroll bar is on the far right side (SideScan) or at the top of the screen (DownScan).

You can pan the image history by dragging up/down (SideScan) or left/right (DownScan).

To resume normal StructureScan scrolling, press **Clear cursor**.





Setting up the StructureScan image

Range

The range setting determines the water depth that is visible on the screen.

Auto range

When the range is set to Auto the system automatically sets the range depending on the water depth.

Preset range levels

You can select between several preset range levels.

Custom range

This option allows you to manually set both upper and lower range limits.

StructureScan frequencies

StructureScan supports two frequencies. 455 kHz provides ideal range and image quality in most situations, while 800kHz is used to provide higher detail in shallow water.

Contrast

The contrast determines the brightness ratio between light and dark areas of the screen. This makes it easier to distinguish object from the background.

To adjust the contrast setting:

1. Select the contrast icon or activate the contrast option in the menu to display the color adjustment bar.
2. Drag the bar or use the rotary knob to set the value.

Palettes

You can select between several display palettes optimized for a variety of fishing conditions.

Pausing the StructureScan image

You can pause the StructureScan image, allowing you to examine the structures and other images in more depth and detail.

This function is useful when you need to position a waypoint exactly on the StructureScan image, and if you are using the cursor to measure a distance between 2 elements on the image.

Advanced StructureScan settings

TVG

The TVG (Time Variable Gain) option compensates for distance to the object, making echoes from equal sized objects appear with the same size on the echosounder image.

Flipping the Structure image left/right

If required, the left/right SideScanning images can be flipped to match the corresponding side of your vessel if the transducer has been mounted backward.

Range Lines

Range lines can be added to the image to make it easier to estimate depth (Downscan) and distance (SideScan).

Recording StructureScan data

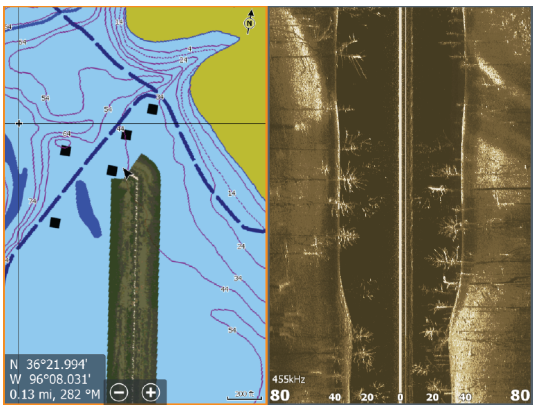
You can record StructureScan data and save the file internally in the Zeus^2 unit, or onto an SD card as described in *"Start Recording echosounder data"* on page 76.

14 StructureMap

The StructureMap feature overlays SideScan images from a StructureScan source on the map. This makes it easier to visualize the underwater environment in relation to your position, and aids in interpreting SideScan images.

The StructureMap image

The example below shows a chart panel with Structure overlay, combined with a traditional SideScan panel.



You move around in the chart as usual when you have a Structure overlay:

- zoom the chart and the scanned image by turning the rotary knob, by using the zoom icons, or by pinching or spreading on the screen
- move the chart to view the scanned image by dragging it in the desired direction

Pressing the **X** key or selecting the **Clear cursor** option removes the cursor from the panel, and the chart center is positioned at the vessel.

Activating Structure overlay

1. Turn on Structure overlay from the chart menu
   - The chart menu is increased to show Structure options
   - Structure data starts to appear on the chart screen as soon as Structure overlay is enabled
2. Select Structure source
   - Live data is default

→ ***Note:*** Structure overlay can also be activated by selecting a saved StructureMap file in the files browser.

StructureMap sources

Two sources can be used to overlay Structure logs on the charts, but only one can be viewed at a time:

- Live data - Used when StructureScan data is available on the system.
- Saved files - These are recorded StructureScan (*.sl2) data that are converted to StructureMap (*.smf) format. Saved *.smf files can be used even if no StructureScan sources are connected.

Live source

When live data is selected, the SideScan imaging history is displayed as a trail behind the vessel icon. The length of this trail varies depending on available memory in the unit and range settings. As the memory fills up, the oldest data is automatically deleted as new data is added. When increasing the search range, the ping speed of the StructureScan transducer is reduced, but the width and the length of the image history is increased.

→ ***Note:*** Live mode does not save any data. If the unit is turned off, all recent data is lost.

Saved files

When Saved files are selected, the StructureMap file is overlaid on the map based on position information in the file.

If the chart scale is large, the StructureMap area is indicated with a boundary box until the scale is large enough to show Structure details.

Saved mode is used to review and examine StructureMap files, and to position the vessel on specific points of interest on a previous scanned area.

→ ***Note:*** When saved files are used as the source, all StructureMap files found on the SD card and in the system's internal memory are displayed. If there is more than one StructureMap of the same area, the images overlap and clutter the chart. If several logs of the same area are required, the maps should be put on separate SD cards.

StructureMap tips

- To get a picture of taller structures (a wreck, etc.) — do not drive over it, instead, steer the boat so the structure is on the left or right side of your vessel.
- Do not use Autorange when using StructureScan. Set your structure range to a significantly greater level (two-to-three times) than the water depth to ensure a complete scan and to maximize conversion accuracy.
- Do not overlap history trails when conducting a side-by-side scan of an area.

Recording StructureScan data

StructureScan data can be recorded from a chart panel with Structure overlay enabled.

StructureScan recordings can also be started from a StructureScan panel.

When StructureScan data is being recorded, there is a flashing red symbol and a message appears periodically at the bottom of the screen.

→ ***Note:*** The message includes information about file size. Keep the size of your logs to 100MB or less to allow for faster file conversion.

The recording is stopped by re-selecting the record function.

Converting StructureScan data to StructureMap format

A StructureScan log file (.sl2) is converted to StructureMap format (.smf) after recording from the recording dialog, or from the files browser.

You can create standard or high resolution files. High resolution .smf files capture more detail, but take longer to convert and are larger than standard resolution files.

To save disc space it is recommended to remove the StructureScan (*.sl2) files after conversion.

Using StructureMap with mapping cards

StructureMap allows you to maintain full chart capability and can be used with embedded cartography as well as Navionics, Insight and other third-party charting cards compatible with the system.

When using StructureMap with mapping cards, copy the StructureMap (.smf) files to the unit's internal memory. We recommend keeping copies of StructureMap files on external mapping cards.

Structure options

You adjust the StructureMap settings from the Structure options menu. The menu is available when Structure overlay is enabled.

Not all options are available when saved StructureMap files are used as the source. Unavailable options are greyed.

Range

Sets the search range.

Transparency

Sets the opaqueness of the Structure overlay. With minimum transparency settings, the chart details are almost hidden by the StructureMap overlay.

Palette

Selects Structure palette.

Contrast

Determines the brightness ratio between light and dark areas of the screen.

Water column

Shows/hides the water column in Live mode.

If turned OFF schools of bait fish might not be seen on the SideScan image.

If turned ON the accuracy of the SideScan image on the map might be affected by the water depth.

Frequency

Sets the transducer frequency used by the unit. 800 kHz offers the best resolution, while 455 kHz has greater depth and range coverage.

Noise rejection

Signal interference from bilge pumps, engine vibration and air bubbles can clutter the sonar screen. The noise rejection option filters the signal interference and reduces on-screen clutter.

Clear live history

Clears existing live history data from the screen and begins showing only the most current data.

Record data

Records StructureScan data.

Source

Selects StructureMap source.

15 ForwardScan

ForwardScan sonar is a navigational aid that helps you monitor the underwater environment in front of your vessel while carrying out slow speed maneuvers.

To use the ForwardScan feature you must have a ForwardScan transducer mounted on your vessel. For installation instructions, refer to the ForwardScan transducer installation manual.

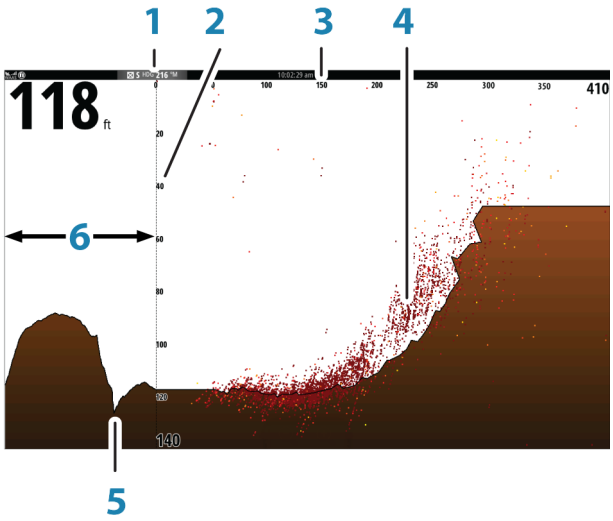
The ForwardScan transducer is connected to a SonarHub and shared over the Ethernet network.

→ ***Note:*** If you have both a sonar/CHIRP and a ForwardScan transducer connected to different SonarHubs, you can view both simultaneously on a single device.

> ⚠ Warning: Do not rely on this equipment as your principle source of navigation or hazard detection.

> ⚠ Warning: Do not use this equipment to gauge depth or other conditions for swimming or diving.

The ForwardScan image



1 Transducer location shown as the origin on the page

2 Depth range scale and vessel position

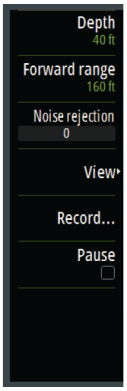
3 Forward range scale

4 Point data

5 Bottom

6 Depth history

Setting up the ForwardScan image



Depth

Controls depth range. Depth range is set to auto mode by default.

Forward range

Controls the forward looking search range. Maximum Forward range is 91 meters (300 feet).

Noise Rejection

Filters out signal interference and reduces on-screen clutter.

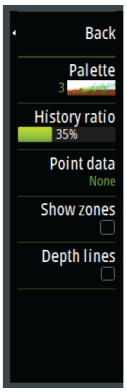
Record

Records ForwardScan sonar logs.

Pause

Pauses forward-looking Echosounder transmissions.

ForwardScan view options



Palette

Several display palettes are available for a variety of water conditions.

History ratio

Controls how much Echosounder history is shown behind the boat. The higher the ratio, the more history will be shown.

Point data

By default, ForwardScan only shows the bottom. Select the Point data menu option to specify to view no sonar data points, all sonar data points, or only points (Objects) in the water column.

Show zones

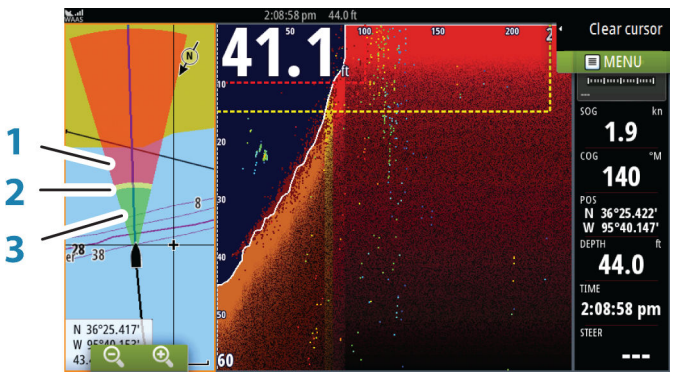
Displays warning zones (yellow) and critical zones (red) on the screen. Refer to *"Critical forward range and Critical depth"* on page 89.

Depth lines

Displays lines on the screen that make it easier to quickly estimate depth and the underwater objects.

Heading extension

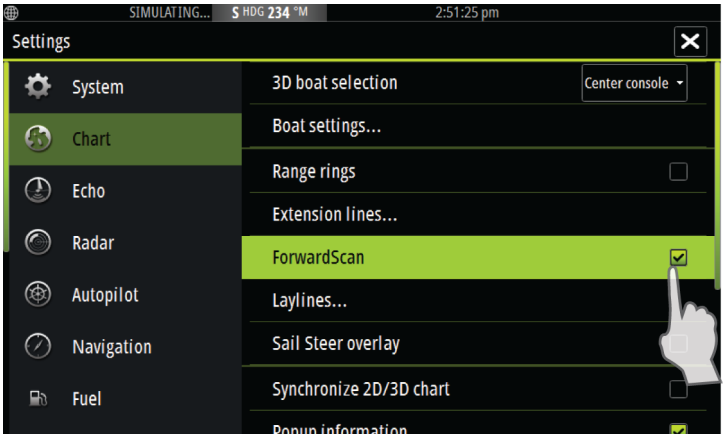
You can use the heading extension to monitor ForwardScan on the chart panel. Heading extension colors are based on the ForwardScan alarm values.



ForwardScan extension

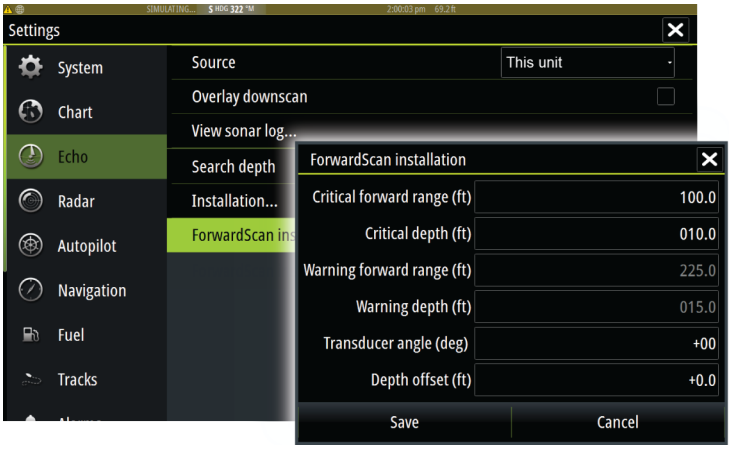
1. Red - Critical
2. Yellow - Warning
3. Green - Safe

Select ForwardScan in the Chart Settings dialog to view the ForwardScan heading extension on the chart panel.



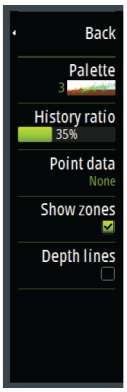
ForwardScan setup

Specify the setup in the **ForwardScan installation** dialog.

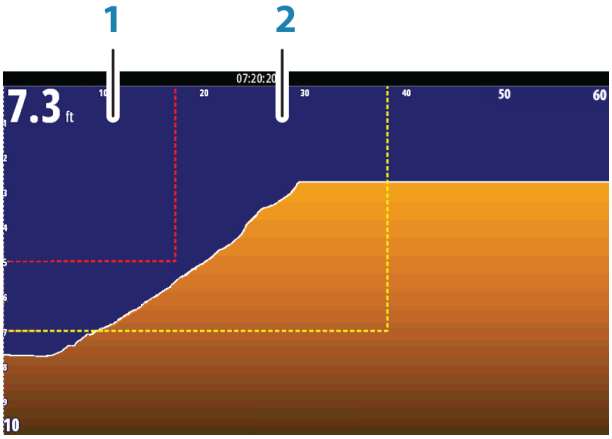


Critical forward range and Critical depth

Critical Forward Range and Critical Depth are user-selected thresholds that define a critical zone forward of your vessel.



If you travel into water shallow enough to cross into the critical zone, the Critical Zone alarm is activated. You can display the critical warning zones by activating the **Show zones** menu option.



ForwardScan image with Show zones active

1 Critical zone

2 Warning zone

Warning Forward Range and Warning Depth values are based on the selected Critical Forward Range and Critical Depth values.

➔ ***Note:*** To receive Critical Zone alerts, enable ForwardScan alarm in the Alarm settings dialog. For more information about enabling alarms, refer to Alarms.

Transducer angle

We recommend installing the transducer vertical to the waterline. In cases where that is not possible, the Transducer Angle setting helps offset the difference between the transducer angle and the waterline.

The angle can be adjusted from 0 (vertical) to 20 degrees.

> ⚠ Warning: Adjustments to the transducer angle value should be done with caution. Large variations in the transducer angle value can distort depth data, increasing the risk of striking underwater obstructions.

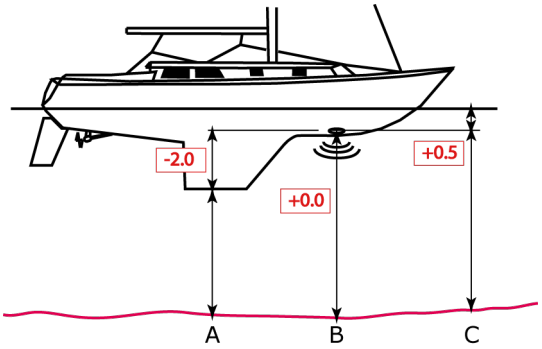
Depth offset

This is a value that can be entered on the Echo Installation page to make depth readings relate to any point from the water surface, to the deepest point of the vessel. Below are some typical ways in which the offset is used:

A) For Depth below Keel: Set the distance from transducer to the bottom of the keel - this should be set as a negative value. For example, -2.0.

B) For Depth Below Transducer: no offset required.

C) For Depth Below Surface (waterline): Set the distance from transducer to the surface - this should be set as a positive value. For example,+0.5.

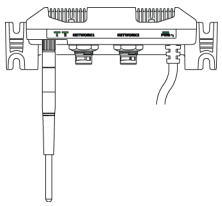


16 Wireless connection

GoFree wireless connectivity gives you the ability to:

- Use a wireless device to remotely view (smartphone and tablet) and control the system (tablet only).
- Access the GoFree Shop.
- Upload your Echosounder logs to create custom maps at Insight Genesis.
- Download software updates
- Connect to third party applications

→ ***Note:*** Maps, charts, software updates, and other data files can be large. Your data provider may charge you based on the amount of data you transfer. If you are unsure contact the service provider for information.



You must connect a WIFI-1 unit to the system to provide wireless functionality.

Installation and wiring of the WIFI-1 unit are described in the separate WIFI-1 Installation Guide. Configuration and setup are described in your system's installation manual.

→ ***Note:*** For security purposes we recommend that you change the administrator password of the WIFI-1 unit.

Connect and disconnect from a wireless hotspot



To connect to a wireless hotspot, select the Wireless option in the System Controls dialog and then select Not Connected. This opens the Wireless Devices dialog. Use this dialog to select the desired hotspot, enter the login information and then select Connect. Connecting to a wireless hotspot changes the wireless mode to **Client mode**. In this mode you can access the GoFree Shop.

To disconnect from a wireless hotspot, select the Wireless option in the System Controls dialog, then select Connected *hotspot_name*, and then Disconnect. This changes the wireless mode to **Access point mode**. In this mode you can connect a wireless device so that Apps such as GoFree Controller & Viewer can access the vessel's navigation information.

GoFree Shop



The WIFI-1 must be connected to an external wireless hotspot in order to access the GoFree Shop from the Tools panel.

At the GoFree Shop you can browse, purchase and download compatible content for your system including navigation charts and Insight Genesis Maps. When you log on, the system automatically gives you a notification if a new software version is available for your system. If an update is available, you can download it to a card slot or defer the download until later. If you defer the download until later, the notification is available in the About dialog accessible from the System Settings.

GoFree Controller & Viewer



The wireless functionality lets you use a wireless device to remotely view (smartphone and tablet) and control the system (tablet only). The system is viewed and controlled from the wireless device by the GoFree Controller & Viewer Apps downloaded from their relevant Application store. When remote control is accepted, the active page is mirrored to the wireless device.

→ ***Note:*** To use smartphones and tablets to view and control the system, wireless functionality must be disconnected from the wireless hotspot (in **Access point mode**).

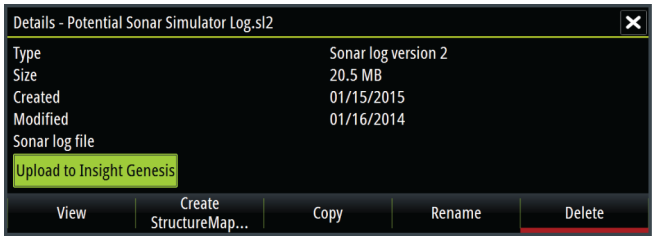
→ ***Note:*** For safety reasons, Autopilot and CZone functions cannot be controlled from a wireless device.

Uploading log files to Insight Genesis

To upload a recorded Echosounder log file to Insight Genesis, select the file you want to upload from the Files panel and select the upload to Insight Genesis option.

➔ ***Note:*** You must be connected to a wireless hotspot to upload recorded log files to Insight Genesis.

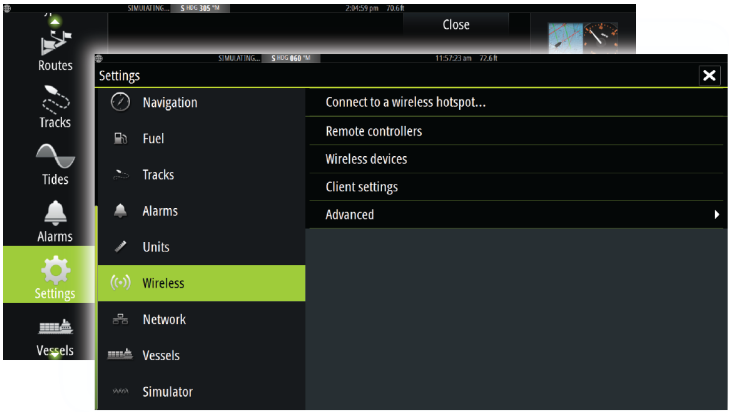
➔ ***Note:*** Recorded log files can also be uploaded to Insight Genesis if you have specified **Upload to Insight Genesis** in the Record Echo dialog. For more information, refer to *"Start Recording log data"* on page 76.



Wireless settings

Provides configuration and setup options for the wireless functionality.

For more information, refer to the Zeus^2 Installation Manual.



Connect to a wireless hotspot

Displays the Wireless device dialog that you can use to connect the wireless functionality to a wireless hotspot.

Remote controllers

When a wireless device (smart phone or tablet) is connected, it should appear in the Remote controllers list. Selecting 'Always allow' means the device can automatically connect without needing a password each time. This menu also allows you to disconnect devices that no longer require access.

Wireless devices

Shows the internal wireless module and any connected WIFI-1 devices, as well as their IP and channel number. If a WIFI-1 is connected and the system detects the software is out of date, an option to update is also be displayed. WIFI-1 updates, when required, are included with the display updates.

Select a device to view additional information about it. 'Network Name' and 'Network Key' can be edited for security, and 'Channel' can be changed if the connection to unit is compromised due to interference. 'Mode' can be changed on WIFI-1 devices only. Restore defaults returns the unit to factory settings.

Client settings

Displays information about the wireless hotspot your unit is connected to or the last one your unit was connected to. You can select the hotspot in the dialog to set it as a hotspot you want to always connect to when in range or you can select to delete it.

Advanced

Initiates the Iperf and DHCP Probe tools that help in fault-finding and setting up the wireless network.

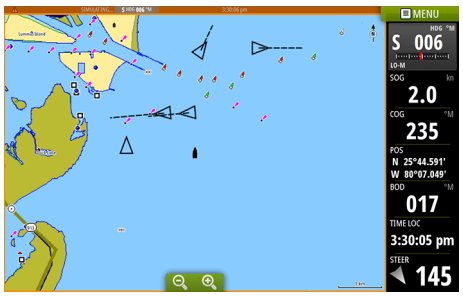
➔ ***Note:*** Iperf and DHCP Probe are tools provided for diagnostic purposes by users familiar with network terminology and configuration. Navico is not the original developer of these tools, and does not provide support related to their use.

17 AIS

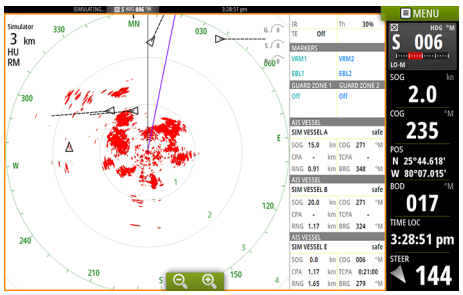
If an NAIS400, an AI50 or a NMEA 2000 VHF that can do AIS (Automatic Identification System) is connected to the Zeus[2], then any targets detected by these devices can be displayed and tracked. You can also see messages and position for DSC transmitting devices within range.

AIS targets can be displayed as overlay on radar and chart images, making this feature an important tool for safe travelling and collision avoidance.

You can set alarms to notify you if an AIS target gets too close or if the target is lost.



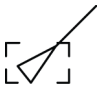
AIS vessels on a chart panel



AIS vessels on a radar panel

AIS target symbols

The system uses the AIS target symbols shown below:

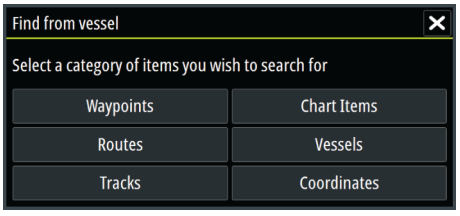
	Sleeping AIS target (not moving or at anchor).
	Moving and safe AIS target with course extension line.
	Dangerous AIS target, illustrated with bold line. A target is defined as dangerous based on the CPA and TCPA settings. Refer to *"Defining dangerous vessels"* on page 98.
	Lost AIS target. When no signals have been received within a time limit, a target is defined as lost. The target symbol represents the last valid position of the target before the reception of data was lost.
	Selected AIS target, activated by selecting a target symbol. The target returns to the default target symbol when the cursor is removed from the symbol.

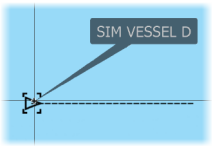
Viewing information about AIS targets

Searching for AIS items

You can search for AIS targets by using the **Find** option in the Tools panel.

From a chart panel you can search for AIS targets by using the **Find** option in the menu. If the cursor is active, the system searches for vessels around the cursor position. Without an active cursor, the system searches for vessels around your vessel's position.





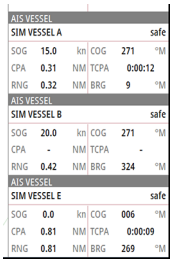
Viewing information about single AIS targets

When you select an AIS icon on the chart or radar panel the symbol changes to Selected target symbol, and the vessel's name is displayed.

You can display detailed information for a target by selecting the AIS pop-up, or from the menu when the target is selected.



AIS information on radar panels



The radar data bar includes information on up to 3 AIS targets.

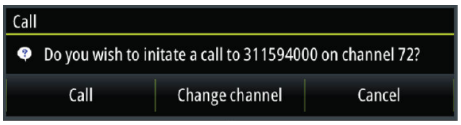
The targets are listed with the closest target on top, and are color coded to indicate target status.

Calling an AIS vessel

If the system includes a VHF radio supporting DSC (Digital Select Calling) calls over NMEA 2000, you can initiate a DSC call to other vessels from the Zeus[2].

The call option is available in the **AIS Vessel Details** dialog, and in the **Vessel** status dialog activated from the **Tools** panel.

From the **Call** dialog you can change channel or cancel the call. The **Call** dialog is closed when the connection is established.



AIS SART



When an AIS SART (Search and Rescue beacon) is activated, it starts transmitting its position and identification data. This data is received by your AIS device.

If your AIS receiver is not compliant with AIS SART, it interprets the received AIS SART data as a signal from a standard AIS transmitter. An icon is positioned on the chart, but this icon is an AIS vessel icon.

If your AIS receiver is compliant with AIS SART, the following takes place when AIS SART data is received:

- An AIS SART icon is located on the chart in the position received from the AIS SART
- An alarm message is displayed
  If you have enabled the siren, the alarm message is followed by an audible alarm.

→ ***Note:*** The icon is green if the received AIS SART data is a test and not an active message.

AIS SART alarm message

When data is received from an AIS SART, an alarm message is displayed. This message includes the AIS SART's unique MMSI number, and its position, distance, and bearing from your vessel.



You have three options:

- Ignore the alarm
  - The alarm is muted and the message closed. The alarm does not reappear

→ ***Note:*** If you ignore the alarm, the AIS SART icon remains visible on your chart, and the AIS SART remains in the Vessels list.

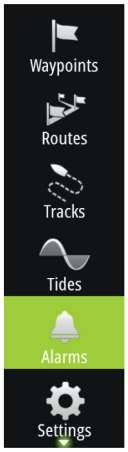
- Save the waypoint
  - The waypoint is saved to your waypoint list. This waypoint name is prefixed with MOB AIS SART - followed by the unique MMSI number of the SART. For example, MOB AIS SART - 12345678.
- Activate the MOB function
  - The display switches to a zoomed chart panel, centered on the AIS SART position
  - The system creates an active route to the AIS SART position

→ ***Note:*** If the MOB function is already active, this will be terminated and replaced by the new route towards the AIS SART position!

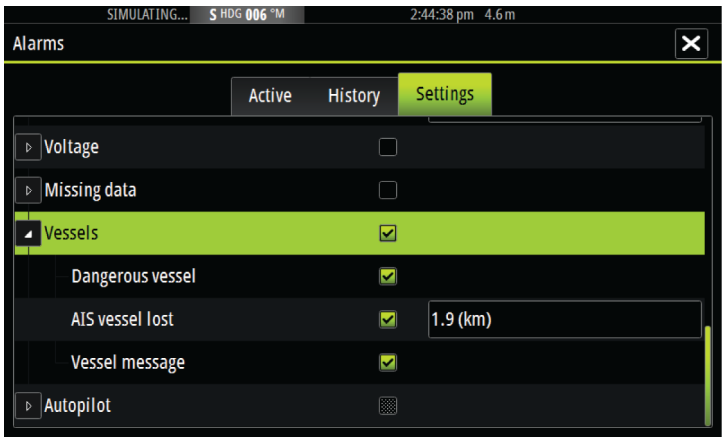
→ ***Note:*** If the AIS stops receiving the AIS SART message, the AIS SART remains in the Vessels list for 10 minutes after it receives the last signal.

If you select the AIS SART icon on the chart panel, then you can see the AIS MOB details.

Vessel alarms



You can define several alarms to alert you if a target shows up within predefined range limits, or if a previously identified target is lost.



Dangerous vessel

Controls whether an alarm will be activated when a vessel comes within the predefined CPA or TCPA. Refer to *"Defining dangerous vessels"* on page 98.

AIS vessel lost

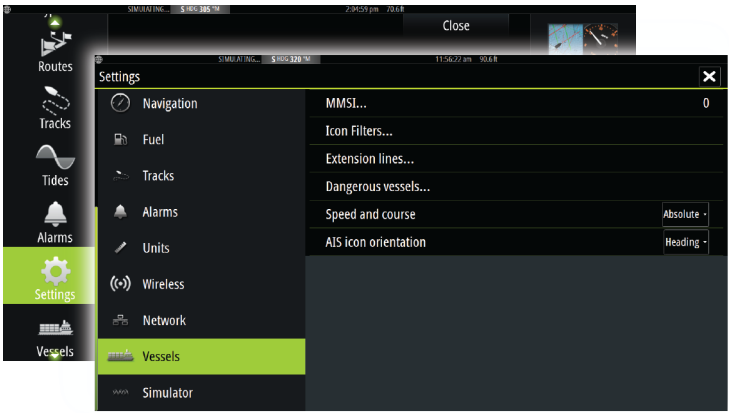
Sets the range for lost vessels. If a vessel is lost within the set range, an alarm occurs.

➔ ***Note:*** The check box controls whether the alarm pop-up box is displayed and if the siren goes on. The CPA and TCPA define when a vessel is dangerous regardless of the enabled or disabled state.

Vessel message

Controls whether an alarm will be activated when a message is received from an AIS target.

Vessel settings



Your vessel's MMSI number

You need to have your own MMSI (Maritime Mobile Service Identity) number entered in the system to receive addressed messages from AIS and DSC vessels.

It is also important to have the MMSI number entered to avoid seeing your own vessel as an AIS target on the chart.

➔ ***Note:*** The Vessel message option in the alarm settings must be toggled on for any MMSI message to be displayed.

Icon filters

By default, all targets are shown on the panel if an AIS device is connected to the system.

You can select not to show any targets, or to filter the icons based on security settings, distance, and vessel speed.



Extension lines

The length of the extension lines for your vessel and for other vessels can be set by the user.

- A: Heading
- B: Course Over Ground (COG)

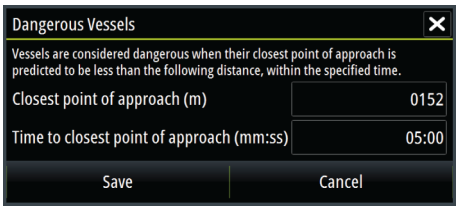
The length of the extension lines is either set as a fixed distance, or to indicate the distance the vessel will move in the selected time period. If no options are turned on for **This vessel** then no extension lines are shown for your vessel.

Your own vessel heading information is read from the active heading sensor, and COG information is received from the active GPS.

For other vessels COG data is included in the message received from the AIS system.

Defining dangerous vessels

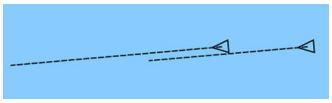
You can define an invisible guard zone around your vessel. When a target comes within this distance, the symbol changes to the "dangerous" target symbol. An alarm is triggered if activated in the Alarm settings panel.



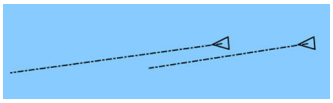
Speed and course indication

The extension line can be used to indicate speed and course for targets, either as absolute (true) motion in the chart or relative to your vessel.

A different line style is used on the extension lines to indicate motion, as shown below.



AIS vessels shown with Absolute motion



AIS vessels shown with Relative motion

AIS icon orientation

Sets the orientation of the AIS icon, either based on heading or COG information.

18 Instrument panels

The Instruments panels consist of multiple gauges - analog, digital and bar - that can be customized to display selected data. The Instruments panel displays data on dashboards, and you can define up to ten dashboards within the Instruments panel.

→ ***Note:*** To include fuel/engine information, engine and tank information has to be configured from the Settings panel.

Dashboards

A set of dashboard styles are predefined to display vessel, navigation, and angler information.

You switch between the panel's dashboards by selecting the left and right arrow buttons on the panel. You can also select the dashboard from the menu.



Vessel dashboard



Navigation dashboard



Angler dashboard

→ ***Note:*** Additional dashboards can be activated from the menu if other systems (e.g. CZone) are present on the network.

Customizing the Instruments panel

You can customize the Instruments panel by changing the data for each of the gauges in the dashboard, by changing the dashboard layout, and by adding new dashboards. You can also set limits for analog gauges.

All edit options are available from the Instruments panel menu.

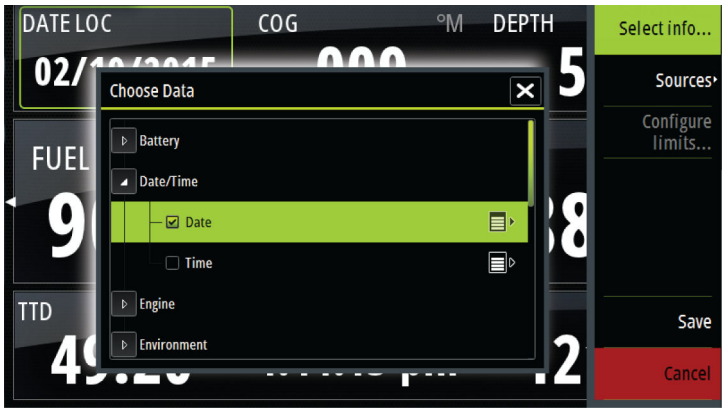
Available editing options depends on which data sources are connected to your system.

Edit a dashboard



Activate the dashboard you want to edit, then:

1. Activate the menu.
2. Select the edit option.
3. Select the gauge you want to change. Selected gauge is indicated with a colored background.
4. Select information to be displayed, configure limits, and eventually change the source for the information.
5. Save your changes by selecting the save option in the menu.



19 Audio

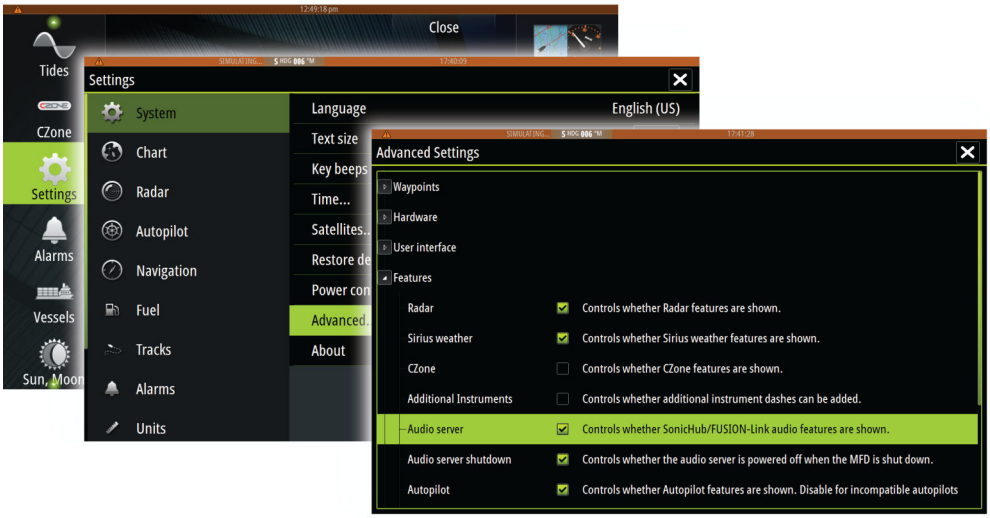
If a SonicHub server or a FUSION marine entertainment system is connected to the NMEA 2000 network, you can use the Zeus[2] to control and customize the audio system on your vessel.

When connected to a WM-3 Satellite module with an active subscription, you can include SiriusXM products on your system. You can also connect a SiriusXM radio to a FUSION system. Sirius audio and weather service covers inland U.S. waters and coastal areas into the Atlantic and Pacific oceans, Gulf of Mexico, and the Caribbean Sea. The SiriusXM products received vary depending on your selected subscription package. For more information refer to www.siriusXM.com.

Before you can start using your audio equipment, it must be installed according to the Zeus[2] Installation manual and to the documentation included with the audio device.

Enabling audio

A compatible audio device connected to the NMEA 2000 network should automatically be identified by the system. If not, enable the feature from the **Advanced Settings** dialog.



The Audio panel

You activate the audio panel by activating the audio tile in the Instrument bar.

The control buttons, tools and options vary from one audio source to another as described later in this chapter.



1. Audio source
2. Audio control buttons
3. Audio tile
4. Audio tools

Audio control buttons

Icon	Tuner	VHF	DVD	Playback
iPod	Select to display the list of available sources			
	Select to select previous/next frequency Press and hold to tune in a channel		Select to rewind/play fast forward	Select to select previous/next track
	Select to select next/previous favorite channel		N/A	N/A
	N/A	N/A	Select to start	
	N/A	N/A	Select to pause playback	
	Select to display the volume slider			

Audio tools

Icon	Tuner	VHF	Playback
	Signal strength	N/A	N/A

Icon	Tuner	VHF	Playback
	N/A	N/A	Select to toggle on/off repeat function. The icon is colored when the function is active.
	N/A	N/A	Select to toggle on/off shuffle mode. The icon is colored when the function is active.
	Select to display menus used for setting up zones and master control		
	Select to display the favorite stations for the tuner	Select to display the favorite channels for the VHF	Select to display the native menu for active source
	Select to display optional settings for active source		

Setting up the audio system

The speakers

Speaker zones

The Zeus^2 can be set up to control different audio zones. The number of zones depends on the audio server connected to your system.

You can adjust balance, volume and volume limit settings individually for each zone. Adjustments to the bass and tremble settings will alter all zones.

Master volume control

By default the volume for all speaker zones are adjusted when you adjust the volume. You can define which zones will be altered when you increase/decrease the volume.

Selecting tuner region

Before playing FM or AM radio, and using a VHF radio, you must select the appropriate region for your location.

Detaching Sirius from the AUX source

If a Sirius radio is connected to the FUSION radio/server, the AUX source is automatically attached to the Sirius feed. **Sirius** then appears in the source list when the FUSION server is active.

To use the AUX source for a different device, the Sirius must be detached from the AUX source.

→ ***Note:*** To use SiriusXM, an optional SiriusXM tuner must be connected to the FUSION server.

Operating the audio system

1. Select the Audio tile in the Instrument bar to activate the Audio overlay
2. Select the options icon and then select the audio server
3. Select the source icon and then select the audio source
   - Number of sources depends on the active audio server
4. Use the panel buttons to control your audio system

For an overview of audio control buttons and tools, refer to *"Audio control buttons"* on page 101 and *"Audio Tools"* on page 101.

For available options, refer to the documentation following your audio equipment.

Favorite channels

When a tuner or VHF channel is tuned in, you can add the channel to your favorite list. The favorite channels can be viewed, selected and deleted from within the Favorite list.

You page through favorite channels by using the up/down audio panel buttons.

Sirius radio (North America only)

Channels list
The channels list displays all available Sirius channels, whether or not you have a subscription for the channel.

Favorites list
You can create a list of your favorite Sirius channels from within the channels list. You cannot add unsubscribed channels.

Locking channels
You can lock selected Sirius channels from being broadcasted. A 4-digit-code must be entered to lock channels and the same code entered to unlock the channels.

20 Weather

The Zeus^2 includes weather functionality that allows the user to view forecast data overlaid on the chart. This helps gaining a clear understanding of the weather conditions that are likely to appear.

The system supports weather data in GRIB format, available for download from various weather service suppliers. The system also supports weather data from SIRIUS Marine Weather Service. This service is available only in North America.

Wind barbs

The rotation of the wind barbs indicate the relative wind direction, with the tail showing the direction the wind is coming from. In the graphics below, the wind comes from the northwest.

Wind speed is indicated by a combination of small and large barbs at the end of the wind tail.

	Zero knots / Indeterminate wind direction
	Small barb = 5 knots
	Large barb = 10 knots
	Arrow barb = 50 knots

If a combination of 5 and 10 knot barbs are shown on a tail, then add them together to give you the total wind speed. The example below shows 3 x large barb + 1 x small barb = 35 knots, and 60 knots indicated with 1 x arrow barb + 1 x large barb.



Wind speed: 35 knots



Wind speed: 60 knots

Showing weather details

If pop-up is enabled, you can select a weather icon to display the identity of the observation. If you select the pop-up, detailed information about the observation is displayed. You can also display the detailed information from the menu when the weather icon is selected.

GRIB weather

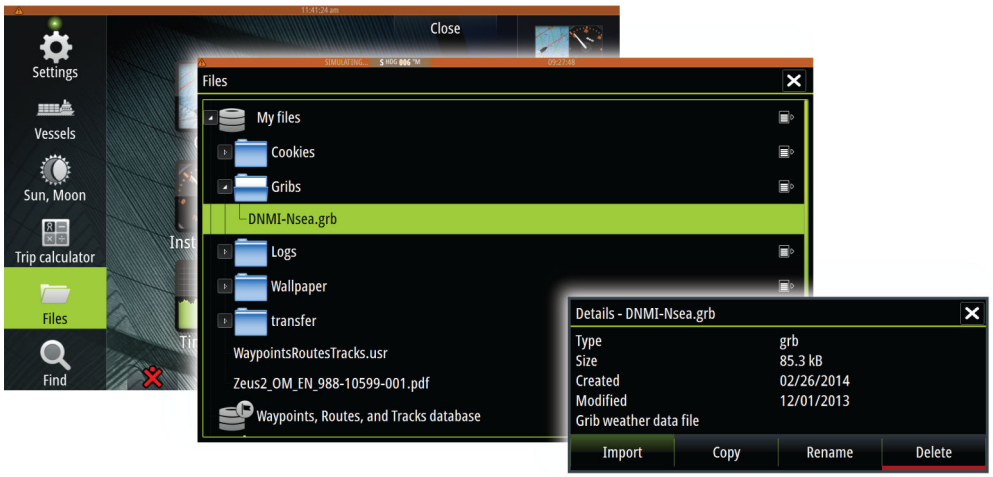
A GRIB file contains forecast information for a set number of days. It is possible to animate the weather data, which shows how weather systems are developing.

Importing GRIB data

The downloaded GRIB data must be imported into memory before it can be used. The file can be imported from any location that can be seen in the file explorer.

→ ***Note:*** GRIB data that is imported from an SD card is not saved in the Zeus^2. The data is lost when new GRIB data is imported.

Select the GRIB file to import the data.

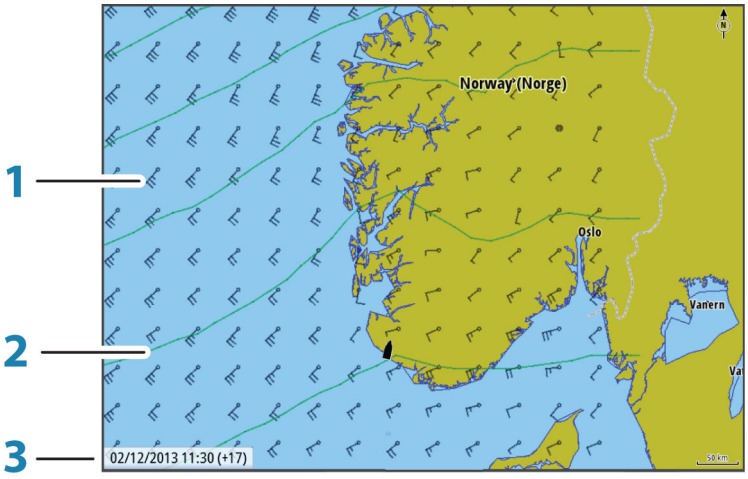


The GRIB weather display

Imported GRIB weather data can be displayed as an overlay on your chart panel.

When the GRIB weather overlay is selected, the chart menu increases to show GRIB weather options. From this menu you can select which weather symbols you want to display, set the distance between the barbs, and adjust the opaqueness of the weather symbols.

From this menu you can also animate the weather forecast as described later in this chapter.



1. Wind barbs
2. Pressure contours
3. GRIB information window

GRIB information window

The GRIB information window shows the date and time for the GRIB weather forecast, and the selected forecast time in brackets. A negative value in the brackets indicates historic weather data.

If you select a position on the chart, the information window expands to include weather details for the selected position.

Animating GRIB weather forecast

The GRIB data contains forecast information for a set number of days. It is possible to animate the weather data and to show the predicted forecast for a specific time and date. The time scales vary depending on the file you are using.

The time shift is shown in brackets in the GRIB information window. The time is relative to the current time as provided by a GPS device connected to the system.

Select time and animation speed from the menu.

SiriusXM weather

When connected to a Navico Weather module, you can subscribe and include Sirius audio and Sirius Marine Weather Service on your system (North America only).

Sirius audio and weather service covers inland U.S. waters and coastal areas into the Atlantic and Pacific oceans, Gulf of Mexico and the Caribbean Sea.

The audio and weather products received vary depending on your selected subscription package. For more information refer to www.siriusxm.com/marineweather

Sirius status panel

When the weather module is connected to the system, you get access to the Sirius status panel.

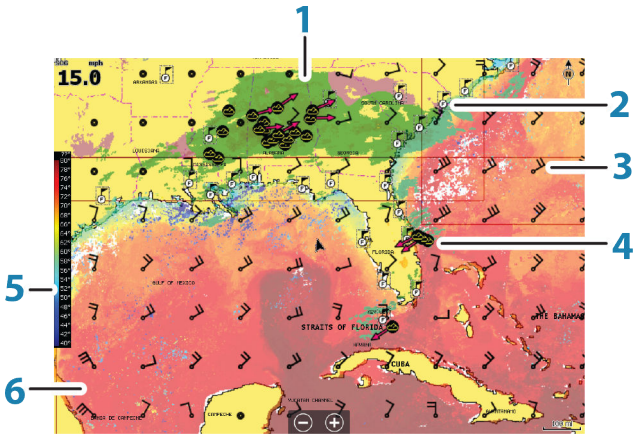
The status panel shows signal strength is indicated as 1/3 (weak), 2/3 (good) or 3/3 (preferred). It also includes antenna status, service level, and the electronic serial number for the weather module.



Sirius weather display

Sirius weather can be displayed as an overlay on your chart panel.

When weather overlay is selected, the chart menu increases to show the available weather options.



1 Precipitation color shading

2 City forecast icon

3 Wind barb

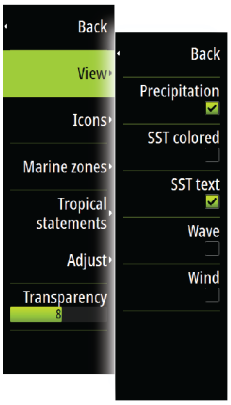
4 Storm icon

5 SST color bar

6 SST color shading

Use the Sirius weather option menu to select which weather symbology that should be displayed and how they should appear on the chart panel.

Sirius view options



Precipitation

Shades of color are used to show precipitation type and intensity. The darkest color indicates the highest intensity.

Rain	From light green (light rain) - yellow - orange - to dark red (heavy rain)
Snow	Blue
Mixed	Pink

Sea Surface Temperature (SST)

You can show the sea surface temperature as color shading or as text.

When color coding is selected, the SST color bar is shown on the left side of the display.

You define how the color codes are used to identify sea surface temperature. See *"Adjusting color codes"* on page 108.

Wave indication

Colors are used to indicate forecasted wave height. The highest waves are dark red, while the lowest are blue.

You can define how the color codes are used to identify the wave height. Refer to *"Adjusting color codes"* on page 108.

Weather icons

Several weather icons are available to show current or predicted weather conditions. You can select an icon to display detailed weather information.

	City forecast
	Surface observation
	Tropical storm tracking; past (grey) - present (red) - future (yellow)
	Hurricane (category 1-5) tracking; past (grey) - present (red) - future (yellow)
	Tropical disturbance/depression tracking; past (grey) - present (red) - future (yellow)
	Storm attributes
	Lightning
	Watch box location and warning
	Marine zone location

Marine zones

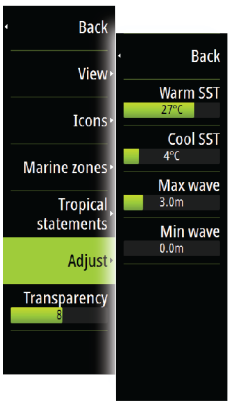
Sirius™ service includes access to weather reports for all U.S. Marine Zones, with the exception of the high seas zones.

You can setup the system to read the forecast for a selected area.

Select the selected zone, and use the menu to confirm your selection.

Tropical statements

You can read tropical statements including information about tropical weather conditions. These statements are available for the entire Atlantic and the Eastern Pacific.



Adjusting color codes

You can define the sea surface temperature range and wave height color coding.

The temperature above warm and below cool values is displayed as progressively darker red and darker blue.

Waves higher than the maximum value are indicated with progressively darker red. Waves lower than the minimum value are not color coded.

Animating Sirius weather graphics

The Zeus^2 records the weather information you have turned on, and this information can be used to animate past or future weather conditions. The amount of information available in the system depends on the amount of weather activity; the more complex it is, the less time that is available for animation.

You can animate the past or the future, depending on which weather view you have turned on:

- With precipitation overlay, you can animate for the past and only assume weather conditions in the immediate future.
- With colored wave height overlay, you can animate the future (the predictions).

When activated, the time for the current graphic animation is displayed in the lower left corner of the chart panel.

Weather alarms

You can setup lightning or storm alarms to occur when the conditions are within a certain range of your vessel.

You can also set up an alarm as a severe weather forecast alarm issued for your chosen marine zone.

A watchbox is defined by the National Weather Service. When the alarm for watchbox is turned on, an alarm occurs when your vessel is entering or inside a watchbox.



21 Video

The video function allows you to view videos or camera sources on your system.

→ ***Note:*** The video images are not shared from the Ethernet network. You can only view the video on the unit connected to the video source.

If a FLIR camera is available on the Ethernet network, you can display the video and control the camera from the system.

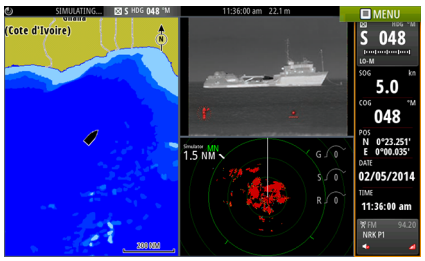
For information about how to connect the camera, see the separate Zeus^2 Installation manual.

The Video panel

A video panel can be set up as a single panel, or as one of the panels on a multiple panel page.

The video image is proportionally scaled to fit into the video panel. Areas not covered by the image are colored black.





Setting up the video panel

Video source

Zeus^2 supports two video input channels. You can select to view one channel only, or to cycle the image between available video cameras.

The cycle period can be set from 5 to 120 seconds.

Video standard

Zeus^2 supports NTSC and PAL video. Check the local video standard or the standard of your cameras.

Adjusting the video image

You can optimize the video display by adjusting the video image settings. The settings are adjusted individually for each video source. Default for all settings: 50%.

FLIR camera control



When the connection is established to a FLIR camera, the menu changes to include access to FLIR camera controls.

→ ***Note:*** You can take over camera control from any Zeus^2 connected to the Ethernet network.

Establishing connection with the FLIR video camera

When a video panel is active, the Zeus^2 automatically recognizes a FLIR camera if it is available on the network.

→ ***Note:*** When there is a DHCP server present on the Ethernet network, the FLIR camera needs to be configured and set to have a Static IP Address before the connection can be established. For instructions on how to configure your specific FLIR camera model, refer to FLIR documentation.

→ ***Note:*** Only one FLIR camera can be connected to the Ethernet network.

When you activate a video panel, the system starts searching the network for a FLIR camera.

Lost connections are indicated by a panel key. Select this key to reestablish the connection.

When the connection is established the menu changes to include access to FLIR camera control.

➔ ***Note:*** You can take over camera control from any Zeus^2 unit connected to the Ethernet network.

Panning and tilting the FLIR camera

When the connection to the FLIR camera is established, pan and tilt panel buttons appear on the video panel. The left and right arrow buttons control the camera's pan. The up and down arrow buttons tilt the camera.

Select one of the arrow buttons on the panel to control the camera. The camera continues to move for as long as you press the button.

Zooming the FLIR video image

You zoom the video image by using the zoom panel buttons.

There are two zoom options available, depending upon your selected FLIR camera source option:

- **Digital zoom**
  Only available when the camera is in Infrared mode. In this mode, the zoom is represented in levels (0, 2 and 4 times zoom). Each press on a zoom button increments or decrements the zoom level.
- **Optical zoom**
  Available in daylight mode. In this mode, the camera continues to zoom for as long as you press a zoom panel button.

The FLIR camera source options

The FLIR camera includes both daylight and infrared video sources.

When the infrared source is selected, the following options are available:

- **Toggle color scheme**
  Cycles through FLIR's video output color scheme. Each of these schemes maps a different color to a different temperature.
- **Toggle polarity**
  Inverts the color scheme. For example, instead of: White = Hot and Black = Cold, it becomes Black = Hot and White = Cold.

The FLIR camera's home position

You can set the current pan and tilt position as the camera's home position.

You can later quickly return to this camera position.

22 Alarms

Alarm system

The system continuously checks for dangerous situations and system faults while the system is running. When an alarm situation occurs, an alarm message pops up on the screen.

An alarm icon is displayed in the status bar, and the status bar pulses the color of the alarm.

If you have enabled the siren, the alarm message is followed by an audible alarm, and the switch for external alarm becomes active.

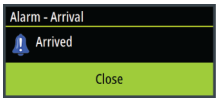
The alarm is recorded in the alarm listing so that you can see the details and take the appropriate corrective action.

Type of messages

The messages are classified according to how the reported situation affects your vessel. The following color codes are used:

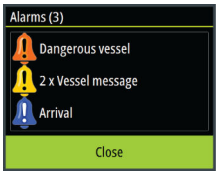
Color	Importance
Red	Critical
Orange	Important
Yellow	Standard
Blue	Warning
Green	Light warning

Single alarms



A single alarm is displayed with the name of the alarm as the title, and with details for the alarm.

Multiple alarms



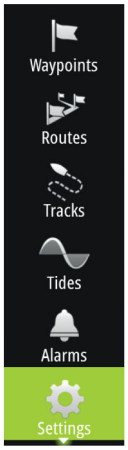
If more than one alarm is activated simultaneously, then the alarm message displays a list of up to 3 alarms. The alarms are listed in the order they occur with the alarm activated first at the top. The remaining alarms are available in the Alarms dialog.

Acknowledging a message

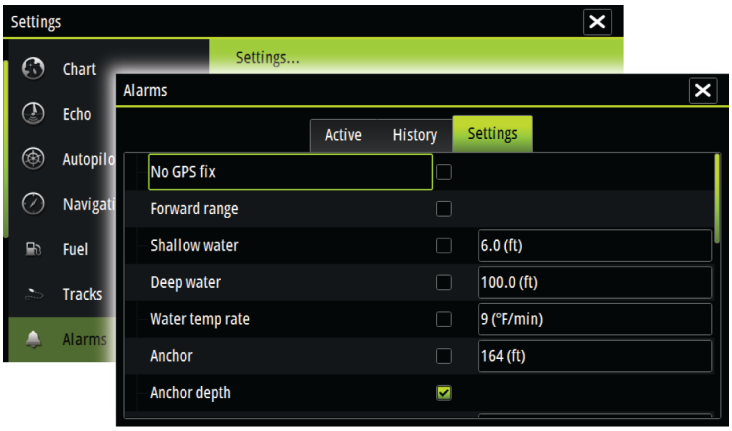
The following options are available in the alarm dialog for acknowledging a message:

- **Close**
  Sets the alarm state to acknowledged, meaning that you are aware of the alarm condition. The siren / buzzer stops and the alarm dialog is removed.
  However, the alarm remains active in the alarm listing until the reason for the alarm has been removed.
- **Disable**
  Disables the current alarm setting. The alarm does not show again unless you turn it back on in the Alarms dialog.
  There is no time-out on the alarm message or siren. They remain until you acknowledge the alarm or until the reason for the alarm is removed.

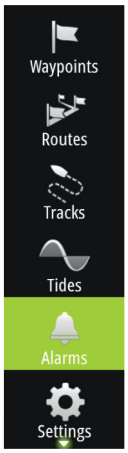
Alarms dialog

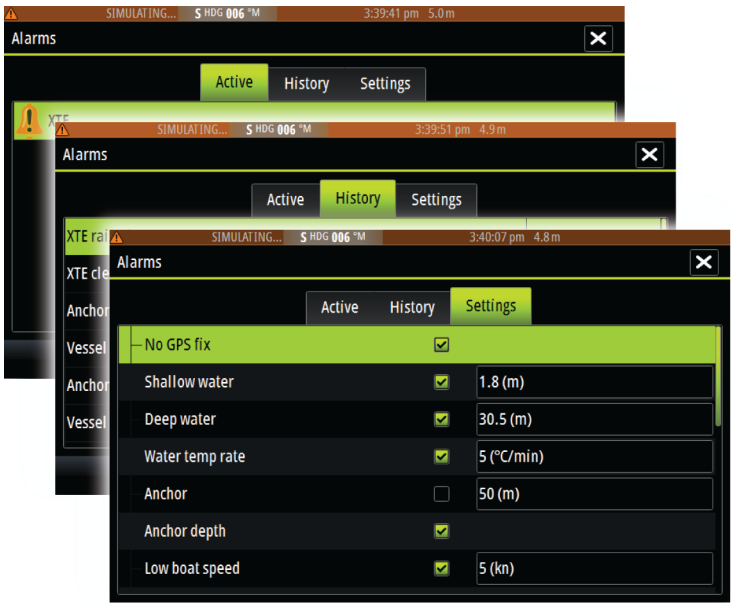


All alarms are setup in the Alarms Settings dialog.



The alarm dialogs can also be activated from the Tools panel. The alarm dialogs include information about active alarms and alarm history.

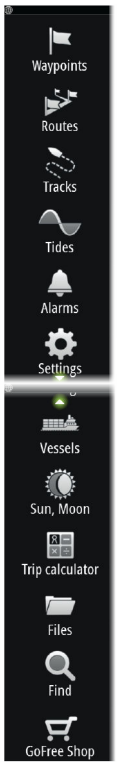




23 Tools

By default, the Tools panel includes icons used for accessing options and tools that are not specific to any panel.

When external equipment is integrated to the Zeus^2, new icons might be added to the Tools panel. These icons are used for accessing the external equipment's features.



Waypoints/routes/tracks

List of waypoints, routes, and tracks with details.

Select the waypoint, route, or track you wish to edit or delete.

Tides

Displays tide information for the tide station nearest to your vessel.

Select the arrow panel buttons to change the date, or select the date field to access the calendar function.

Available tide stations can be selected from the menu.

Alarms

Active alarms
List of active alarms.

Alarm history
List of all alarms with time stamp.

Alarm settings
List of all available alarm options in the system, with current settings.

Settings

Provides access to application and system settings.

Vessels

Status listing
List of all AIS, MARPA, and DSC vessels with available information.

Message listing
List of all messages received from other AIS vessels with time stamp.

Sun, Moon

Displays sunrise, sunset, moonrise and moonset for a position based on entered date and the position's latitude/longitude.

Trip calculator

Trip 1 / Trip 2
Displays voyage and engine information, with reset option for all data fields.

Today
Displays voyage and engine information for current date. All data fields are automatically reset when the date changes.

Files

File management system for Files, Waypoints, Routes, Tracks, and Settings.

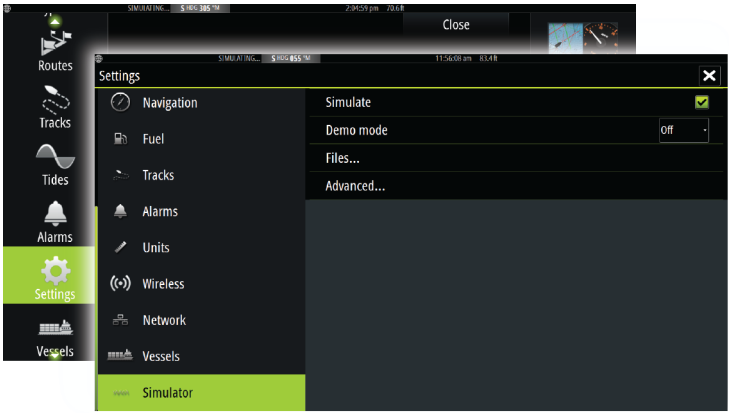
Find

Search function for chart items (waypoints, routes, tracks, etc.).

24 Simulator

The simulation feature lets you see how the unit works in a stationary position and without being connected to the Echosounder, Radar, GPS, etc.

Use the simulator to become familiar with your unit before using it on the water.



The status bar indicates if the simulator is toggled on.

Demo mode

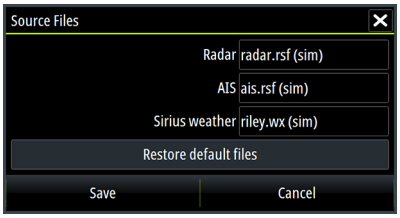
In this mode the unit automatically runs through the main features of the product; it changes pages automatically, adjusts settings, opens menus, and so on.

If you tap on a touchscreen or press a key when demo mode is running, the demonstration pauses. After a time-out period, demo mode resumes and any changed settings are restored to default.

→ ***Note:*** Demo mode is designed for retail/showroom demonstrations.

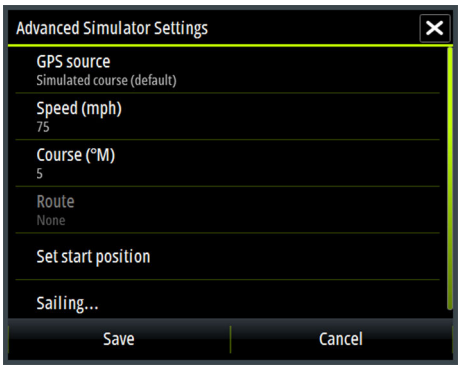
Simulator source files

You can select which data files are used by the simulator. A set of source files is included in your system, and you can import files by using a card inserted into the card reader. You can also use your own recorded files in the simulator.



Advanced simulator settings

The Advanced simulator settings allows for manually controlling the simulator.



GPS source

Selects where the GPS data is generated from.

Speed, Course and Route

Used for manually entering values when GPS source is set to Simulated course or Simulated route. Otherwise, GPS data including speed and course come from the selected source file.

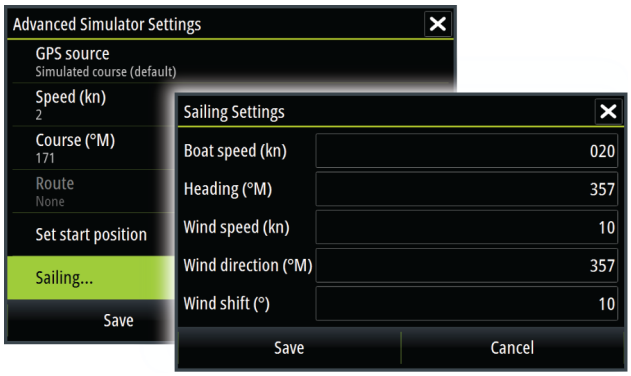
Set start position

Moves your vessel to the current cursor position.

→ ***Note:*** This option is only available when the GPS source is set to Simulated course.

Sailing

Opens dialog for selecting sail specific simulator data.



25 Maintenance

Preventive maintenance

The Zeus^2 does not contain any field serviceable components, therefore the operator is required to perform only a very limited amount of preventative maintenance.

It is recommended that you always fit the supplied protective sun cover when the unit is not in use.

Cleaning the display unit

A proper cleaning cloth should be used to clean the screen, where possible. Use plenty of water to dissolve and take away salt remains. Crystalized salt may scratch the coating if using a damp cloth. Apply minimal pressure to the screen.

Where marks on the screen cannot be removed by the cloth alone, use a 50/50 mixture of warm water and isopropyl alcohol to clean the screen. Avoid any contact with solvents (acetone, mineral turpentine, etc.), or ammonia based cleaning products, as they may damage the anti-glare layer or plastic bezel.

To prevent UV damage to the plastic bezel, it is recommended that the sun cover be fitted when the unit is not in use for an extended period.

Cleaning the media port door

Clean the media port door regularly to avoid salt crystallization on the surface, causing water to leak into the card slot.

Checking the keys

Make sure that no keys are stuck in the down position. If one is stuck, wiggle the key to free it back to normal.

Checking the connectors

The connectors should be checked by visual inspection only.

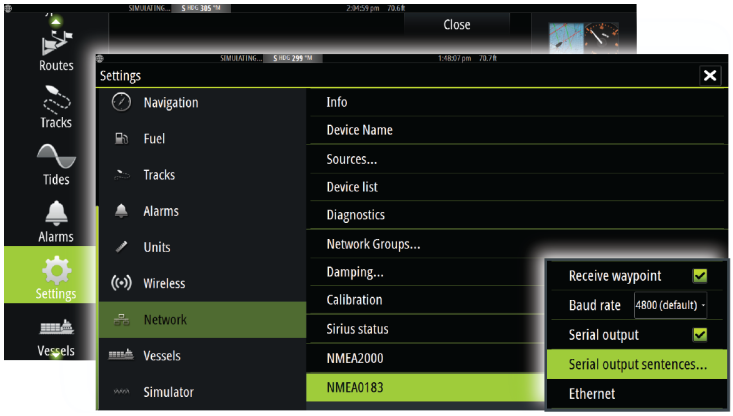
Push the connector plugs into the connector. If the connector plugs are equipped with a lock, ensure that it is in the correct position.

NMEA Data logging

All serial output sentences sent over the NMEA TCP connection are logged to an internal file. You can export and review this file for service and fault finding purposes.

The maximum file size is predefined. If you have added several other files to the system (file recordings, music, pictures, pdf files), this may reduce the allowed file size for the log file.

The system logs as much data as possible within the file size limitation, and then it starts overwriting the oldest data.



Exporting the log file

The log file can be exported from the files browser.

When you select the Log database you are prompted to select a destination folder and filename. Once accepted, the log file is written to the chosen location.

Software upgrades

The latest software for the Zeus^2 is available for download from our website, bandg.com.

Detailed instructions for how to install the software are included in the upgrade files.

Backing up your system data

Waypoints, Routes, and Tracks that you create are filed in your system. It is recommended to regularly copy these files and your system settings files as part of your back-up routine. The files can be copied to a card inserted in the card reader.

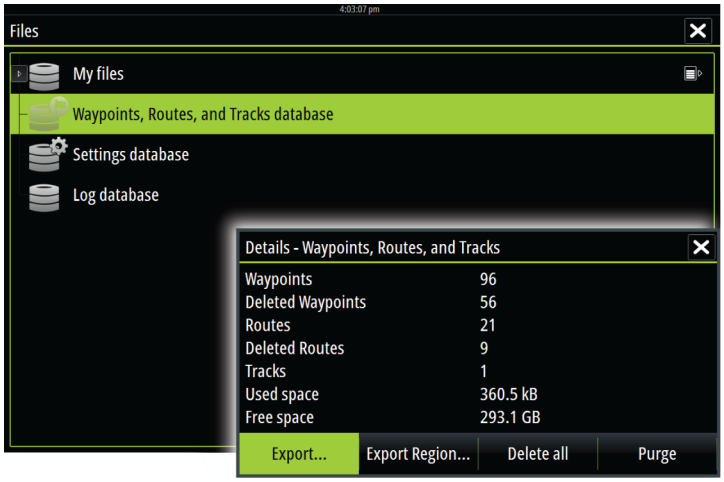
There are no export file format options for the system settings file. The following output formats are available for exporting Waypoints, Routes, and Tracks files:

- **User Data File version 5**
  This is used to import and export waypoints and routes with a standardized universally unique identifier (UUID), which is very reliable and easy to use. The data includes such information as the time and date when a route was created, and so on.
- **User Data File version 4**
  This is best used when transferring data from one system to another, since it contains all the extra bits of information these systems store about items.
- **User Data file version 3 (w/depth)**
  Should be used when transferring user data from one system to a legacy product (Lowrance LMS, LCX, and so on.)
- **User data file version 2 (no depth)**
  Can be used when transferring user data from one system to a legacy product (Lowrance LMS, LCX, and so on.)
- **GPX (GPS Exchange, no depth)**
  This is the format most used on the web that shares among most GPS systems in the world. Use this format if you are taking data to a competitors unit.
- **Northstar.dat (no Tracks)**
  Used to transfer data to a legacy Northstar device.

Export all Waypoints, Routes and Tracks

Use the export option if you want to backup all Waypoints, Routes, and Tracks on your system.



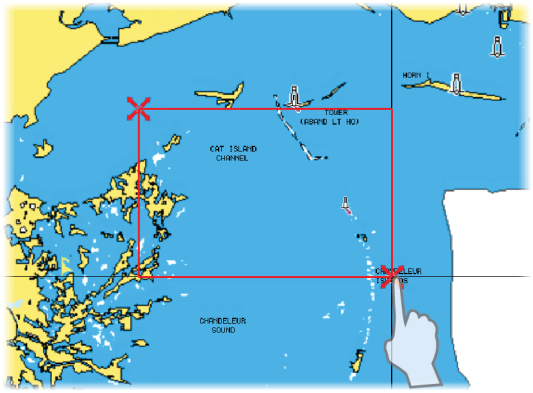


Export region

The export region option allows you to select the area from where you want to export data.

1. Drag the boundary box to define the desired region

2. Select the export option from the menu
3. Select the appropriate file format
4. Select the serial port field to start the export



Purging Waypoints, Routes and Tracks

Deleted Waypoints, Routes and Tracks are stored in the Zeus^2 memory until the data is purged. This is necessary to allow user data to be synchronized across multiple units on an Ethernet network. If you have numerous deleted, unpurged Waypoints, purging may improve the performance of your system.

➔ ***Note:*** When user data is purged from the memory, it cannot be recovered.

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