LOWRANCE

988-0176-01B

HDS-5 & HDS-7

Fish Finding Sonar and GPS

Operations Guide

Software updates for your unit.

Occassionally check the Lowrance website for free software upgrades for your unit. Go to www.lowrance.com for the software upgrades. Select the **Downloads** option from the grey menu bar near the top of the Lowrance website homepage. The Downloads screen will appear. Select **Products Software Updates** from the list on the left side of the screen. The Products Software Updates screen will appear. Scroll through the **Product** list and select your unit to download the software update.

Table of contents

Introduction **5**

Getting Started **7**

Turning on the Unit 7
Keypad 7
Backlight 7
Cursor 7
Language 7
Menus 8
Selecting Chart Data 8
Selecting a Fishing Mode 9
Entering Letters in Text Boxes 9
Restore Defaults 10

Pages **11**

Pages Screen 11
Data Overlay 12
Configuration menu 16
Sonar Page 17
Chart Page 17
Radar Page 18
Info Page 18
Utilities 23
Displaying Combo Pages 25

Sonar Operation **29**

Viewing Sonar History 29
Sonar Menu 30
Sonar Options 33
Palette 34
Log Sonar Data 36

Contents

Chart Operation 39

Chart menu 40
Waypoints 42
Routes 47
Trails 51
Measuring Distances on Chart page 54
Search by Coordinates 54
Find Chart item 54
Map Orientation 55
Look Ahead 55
Chart categories 56
Navionics 58

Radar Operation 61

Radar menu 61
Cursor position window 67
Radar Overlay 67

Settings Menu 69

Chart Settings Menu 76
Sonar Settings Menu 79
Manual Mode 80
Fishing Modes 81
Installation Menu 82
Keel Offset 82
Radar Settings Menu 86
Fuel 93
Alarms 97
Trails 99
Units 100
Network 101
Vessels 108
Simulator 110

Specifications.....113

Unit Care 114

Troubleshooting.....115

Index..... 123

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Introduction

Thank you for purchasing from Lowrance, the industry leader in marine technology. This manual is packaged with a Quick Start Guide, Installation Guide, License and Warranty booklet and NMEA 2000 Networks Installation Instructions. If any of these documents are missing, you may acquire them via a free download at www.lowrance.com or by contacting customer service.

Lowrance Customer Service

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About this manual

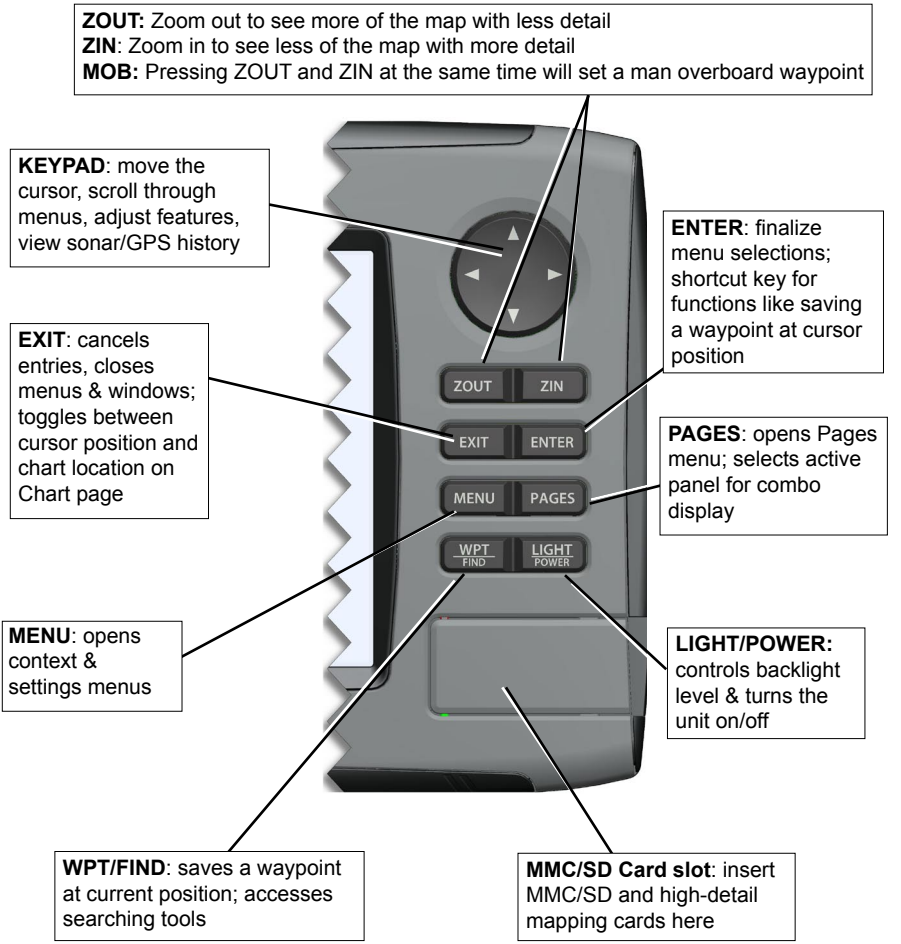
This manual documents how to adjust features and options in your display unit. The information in each section follows the same sequence as your display unit's menus. If you would like information on how to get the most out of your unit, visit our web site, www.lowrance.com; click on the ***Support*** tab and select ***Tips and Tutorials***.

Manual Conventions

When you are instructed to press a button in this manual, the button will be shown in all caps and bold text like — **MENU**, **EXIT**, **ENTER**, etc. If you are instructed to select an item from a menu, the item to be selected will be listed in bold like — ***Brightness, Key beeps***, etc.
For example: Press **MENU**, select ***Language*** and press **ENTER**.

WARNING: When a GPS unit is used in a vehicle, the vehicle operator is solely responsible for operating the vehicle in a safe manner. Vehicle operators must maintain full surveillance of all pertinent driving, boating or flying conditions at all times. An accident or collision resulting in damage to property, personal injury or death could occur if the operator of a GPS-equipped vehicle fails to pay full attention to travel conditions and vehicle operation while the vehicle is in motion.

Lowrance HDS-5 and HDS-7



Getting Started

Turning on the Unit

Press the **POWER/LIGHT** key to turn on the unit. If the unit is not connected to a transducer, the unit will start up in simulator mode. To turn off the unit, press the **POWER/LIGHT** key for three seconds.

Keypad

This unit's keypad can be used in two ways. Pressing the arrow symbols on the keypad will move the cursor in the corresponding direction on the screen and allow you to scroll through menus.

Backlight

Tap the **LIGHT/POWER** key to make adjustments to the backlight level and open the Backlight Menu. To turn on Night Mode from the menu, highlight ***Night Mode*** and press **ENTER**. Night mode optimizes the display for low light conditions.

Cursor

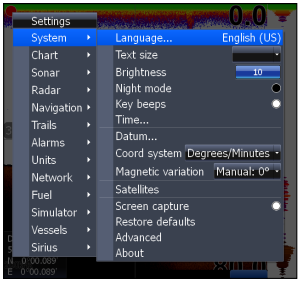
Use the unit's keypad to move the cursor around the display, select onscreen objects, highlight data items and view sonar history. Press **EXIT** to remove the cursor from the screen.

Language

Selects language used for menus, text boxes and messages.

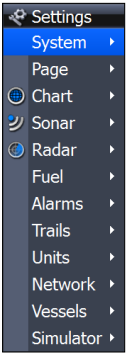
To select a language:

1. Press **MENU** twice.
2. Select ***System*** and press **ENTER**
3. Highlight ***Language*** and press **ENTER**.
4. Use the keypad to select a language and press **ENTER**.



Menus

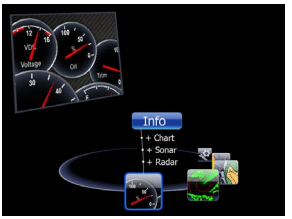
This unit has a Settings menu, a Pages screen and several context menus. The Settings menu provides access to the settings menus for the three main operation modes: Sonar, Chart and Radar. The Settings menu is accessed by pressing **MENU** twice.



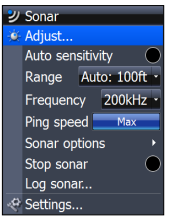
Settings menu

The Pages screen allows you to select a page to be shown on the display. Utilities are also accessed from the Pages screen. Press the **PAGES** key to select a page.

Each page has its own context menu which allows you to access functions for that page. Context menus are accessible only when its corresponding page is displayed. The Sonar Menu, for example, will only be available when the Sonar Page is on the display. To access a context menu, select the desired page and press the **MENU** key.



Pages screen



Sonar menu

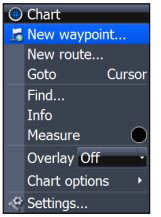
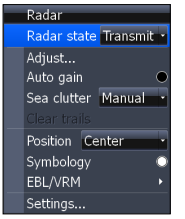


Chart menu



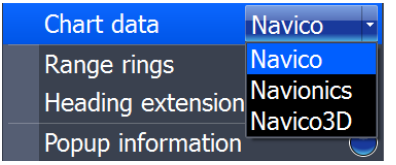
Radar menu

Closing Menus

Press the **EXIT** key to close a menu. Repeatedly pressing **EXIT** will close all menus, taking you back to the main screen.

Selecting Chart Data

This unit supports three types of map data: Navico, Navionics and Navico 3D (US only). To use Navionics or Navico 3D data, you must select it from the Chart Data menu.

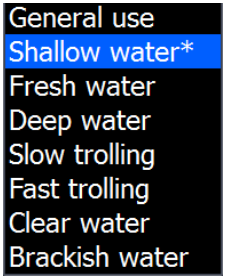


To select Chart data:

1. Press **MENU** twice.
2. Highlight ***Chart*** and press **ENTER**.
3. Select ***Chart Data*** and press **ENTER**.
4. Select the desired map data option and press **ENTER**.

Selecting a Fishing Mode

Fishing modes enhance the performance of your unit by providing preset packages of sonar settings geared to specific fishing conditions.



To select a fishing mode:

1. Press **MENU** twice.
2. Select ***Sonar*** and press **ENTER**.
3. Highlight ***Fishing Mode*** and press **ENTER**.
4. Select the desired fishing mode and press **ENTER**.

Fishing Mode Options	
General Use	Bottom brown/blue background; 50% ping speed
Shallow Water	Bottom brown/white background; best suited for depths less than 100 feet
Fresh Water	Bottom brown/white background; 50% ping speed
Deep Water	Deep Blue; 50% ping speed; 50kHz is primary transducer frequency
Slow Trolling	Bottom brown/white background; 50% ping speed
Fast Trolling	Bottom brown/white background; slightly lower chart speed
Clear Water	Bottom brown/white background; 50% ping speed
Brackish Water	Bottom brown/blue background; higher ASP; slightly lower chart speed

Entering Letters in Text Boxes

This unit has some features and functions that may require you to enter data in a text box.

To enter data in a text box:

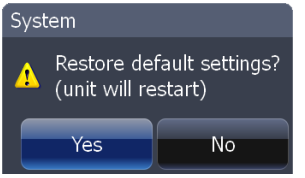
1. Highlight the text box and press **ENTER**. A keyboard will appear on the screen.
2. Use the keypad to highlight the first character and press **ENTER**. Repeat this step until all characters have been entered.
3. Highlight ***OK*** and press **ENTER**.

Keypad button controls uppercase & lowercase

Keyboard window

Restore Defaults

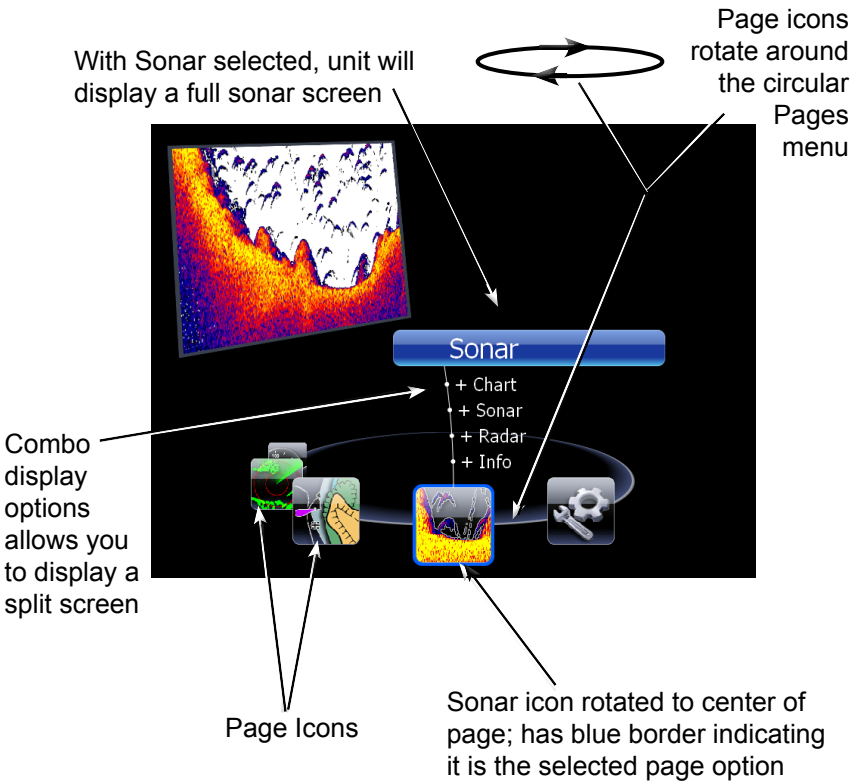
The Restore Defaults command switches the unit back to the settings it had when you purchased it (default settings),



To Restore Defaults:

1. Press **MENU** twice.
2. Select ***System*** and press **ENTER**.
3. Highlight ***Restore Defaults*** and press **ENTER**. A confirmation message will appear.
4. Select ***Yes*** and press **ENTER**.

Pages



Pages Screen

Consists of four page icons that scroll horizontally around the Pages menu. To view the pages screen, press the **PAGES** key.

Selecting Pages

Pressing the keypad left or right will move the page icons around the menu. To select a page, move the desired page icon to the center of the screen.

When selected, the page name will be highlighted in blue at the top of a list of combo display options. Its icon, will be framed by a blue border below the list. To display the page, press **ENTER**.

Data Overlay

Data overlay is information you can display on top of the page screen, allowing you to customize each page with desired data.

Data Overlay menu

Every page option has its own Data Overlay menu. The menu allows you to edit, add or remove overlay data from the display. To access Data Overlay menu, select a page option and press **MENU**.

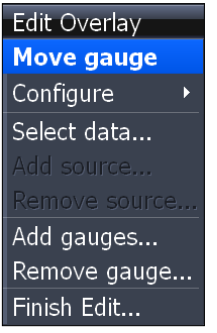
NOTE: *Adjusting Panel Sizes is covered later in this section in the Displaying Combo Pages segment.*

Edit Overlay menu

Accesses data overlay options for all the unit's page screens.

To access Edit Data Overlay menu:

1. Select ***Edit Data overlay*** from the Data Overlay menu and press **ENTER**.
2. Press **MENU**. The Edit Overlay menu will appear with Add Gauge selected.



Edit Overlay menu

Edit Mode

When a gauge is added to the display it will be shown in edit mode. Analog and bar gauges are shaded in blue when they are in Edit Mode. Digital Gauges will be shown with a blue border.

Analog gauge in edit mode

Digital gauge in edit mode

Move or Placing a Gauge

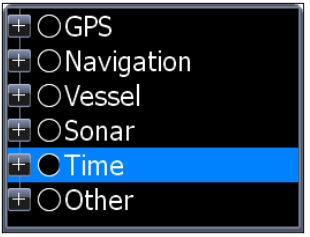
The Move gauge command allows you to move data overlay to any position on the screen. When you use the Place gauge command, the gauge will be locked in its current position.

To move or place a gauge:

1. Press the **ENTER** key when the gauge is in Edit mode. Four directional arrows will appear when the gauge can be moved.
2. Use the keypad to move the gauge to a desired location on the screen.
3. Press **ENTER** to place the gauge.

Select Data

Used to select data that will be shown on the data overlay display. When selecting data you first will open a main data category and then choose data to be displayed from the a data subcategory.



Select data menu

Time subcategory

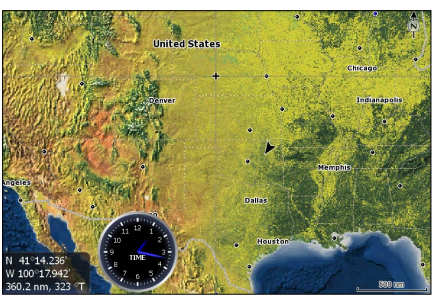
To select data overlay:

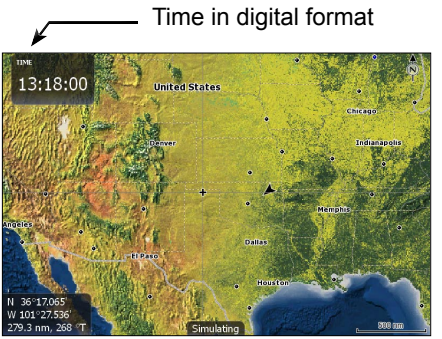
1. Press the ***Select data*** softkey. The Select Data menu will appear.
2. Use the keypad to select the desired category and press **ENTER**. A list of subcategories will appear.
3. Select the desired subcategory and press **ENTER**.

Type

Switches data overlay display between analog, digital and bar gauge formats, provided the format is appropriate for the selected data type.

To change Type press the ***Type*** softkey to toggle between digital and analog gauge formats.

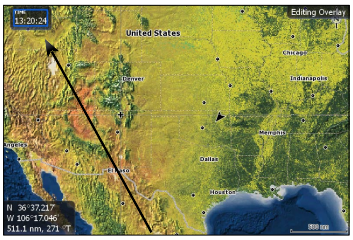




Size

Selects the size of the data overlay display. Data overlay can be displayed in four sizes.

With the gauge in edit mode (shaded in blue) press the **ZOOM OUT** key to increase overlay size; press the **ZOOM IN** key to decrease overlay size.



Small digital gauge

Large analog gauge

Limits

Controls the number scale used on data overlay gauges and selects warning thresholds. Changing the limits on an analog or bar gauge removes unnecessary numbers from the gauge, making them easier to read. Warnings help you stay within selected warning thresholds.

Limits are configured by inputting analog or bar gauge limits in the Limits text boxes — minimum and maximum. Warnings thresholds are entered in the Low and High text boxes.

Configuration Limits menu

To configure limits:

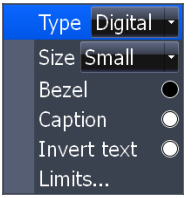
1. Press the ***Limits*** softkey. The Configuration Limits menu will appear.
2. Select the Limits or Warnings text box and press **ENTER**.
3. Use the keypad to enter the desired threshold.
4. Select ***OK*** and press **ENTER**.

To save changes:

1. Press **MENU** and highlight ***Save***.
2. Press **ENTER**.

Configuration menu

Allows you to Add/Remove sources and adjust Bezel, Caption and Invert Text Settings. Other configuration menu options are covered previously in the section.



To access the Configuration menu, highlight ***Configuration*** on the Edit Overlay menu and press **ENTER**.

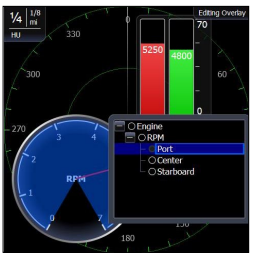
Configuration Settings	
Bezel	Adds a bezel to the data overlay gauge, making it easier to see against certain backgrounds
Caption	Allows you to add/remove data label from gauge
Invert Text	Changes appearance of data overlay text

Add Source

Displays the same type of data from different sources on the same analog gauge.

If, for example, you have multiple engines, you could select port engine RPM as your data type and then display starboard engine RPM using the Add source command.

Both data sources could be displayed simultaneously on an analog gauge with two needles; one dedicated to each source.



Add Source menu

To use Add Source:

1. Select ***Add Source*** from the Edit Overlay menu and press **ENTER**. The Add source menu will appear.
2. Highlight a category a press **ENTER**. A list of subcategories will appear.
3. Select the desired subcategory and press **ENTER**.

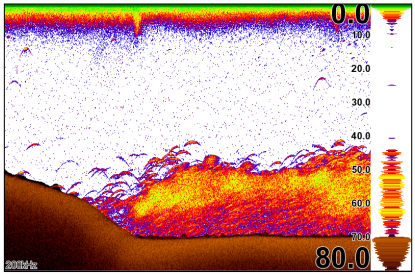
Analog gauge showing RPM from two engines.

To remove add source data:

1. Highlight ***Remove source*** from the Edit Overlay menu and press **ENTER**. A list of sources will appear.
2. Select the source you want to remove and press **ENTER**.

Sonar Page

Displays the water column moving from right to left on your unit's screen. On the right side of the screen, the Amplitude Scope bar previews echoes about to appear on the display.



The sonar page has three splitscreen view settings and 14 color palette settings. Sonar display options are covered in more detail in the Sonar Operation section.

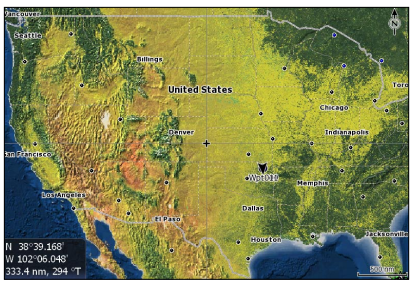
On the Sonar Page you can:

- Move the cursor to any location on the screen to get a depth reading
- Show fish echoes as fish symbols with fish depths
- Adjust Range to view only desired portion of the water column

To access the Sonar Page, use the keypad to highlight **Sonar** on the Pages menu and press **ENTER**.

Chart Page

Consists of a Map that moves in real time as you move. By default, the map is shown from a birds-eye view with North at the top of the screen.



This page has three map orientation options (North Up, Track Up & Course Up) and two ways to view the map: 2D and Shaded Relief (only available on select models). The cursor is used to scroll the map, select objects and find the distance between objects. The Chart page is covered in more detail in the Chart Operation section.

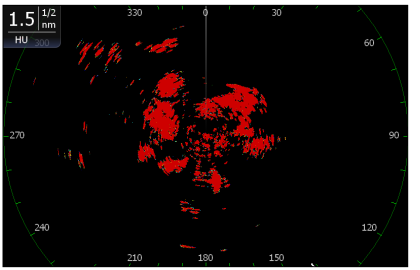
On the Chart Page you can:

- Save Waypoints
- Find points of interest (POI)
- Navigate routes; navigate to cursor and waypoints

To access the Chart page, use the keypad to highlight **Chart** on the Pages menu and press **ENTER** to access the Chart Page.

Radar Page

Displays the PPI (Position Plan Indicator) screen, Range Rings and the cursor.



The PPI can be shifted to show more of a desired portion of the screen (Look Ahead, Center & Offset) and the color palette can be changed to show returns in white, yellow, black or green. The radar page is covered in more detail in the Radar Operation section.

On the Radar Page you can:

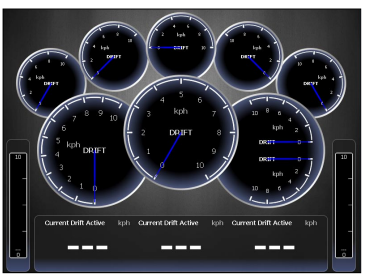
- Overlay compass data, range rings and EBL/VRMs on display
- Choose screen orientation from Head Up, Course Up & North Up
- Make radar targets more visible via Target Expansion

Use the keypad to highlight ***Radar*** on the page screen and press **ENTER** to access the Radar Page.

NOTE: *You will only be able to see the Radar page if your unit is connected to a radar.*

Info Page

Consists of multiple gauges — Analog, Digital and Bar — that can be customized to display selected data. Customizing the info page allows you to monitor several types of desired data at the same time.



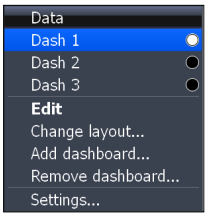
On the Info Page you can:

- Select data to be displayed in analog gauge or digital formats
- Change the page layout using one of three templates
- Select the range (scale) of analog gauges

To access the Info Page, use the keypad to select ***Info*** on the pages screen and press **ENTER**.

Data menu

Controls Info page data, page layout and data display format selection. To access the Data menu, press **MENU** while on the Info page.



Data menu

Dash 1, Dash 2 and Dash 3

Info Page dashboard templates that vary in page layout and in the number of gauges supported. The templates save you time by allowing you to use the Info page without having to manually set up a gauge layout.

Gauge Layout Templates

General Engine Layout

Digital Layout

Bar Layout

You can change the gauge layout of Dash 1 (General Engine Layout), Dash 2 (Digital Layout) and Dash 3 (Bar Layout) templates using the change layout command. To select a dashboard template, highlight the desired template on the Data menu and press **ENTER**.

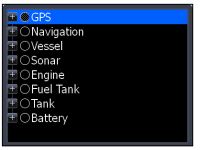
NOTE: *You can toggle through the dashboard templates on the screen by pressing the keypad left/right.*

Edit

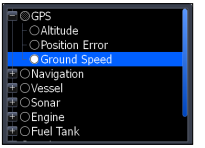
Used to select information displayed on the Info page. To switch the screen to Edit Mode, select ***Edit*** from the Data menu and press **ENTER**. The active gauge will be shaded in blue (analog) or surrounded by a blue border (digital and bar).

To edit gauge display:

1. Use the keypad to select the gauge you want to edit and press **ENTER**. The Select Data menu will appear.
2. Use the keypad to select a data category and press **ENTER**. A list of subcategories will appear.
3. Select the desired subcategory and press **ENTER**.
4. Press **MENU**. The Edit Data menu will appear.
5. Highlight ***Finish Edit*** and press **ENTER**. The Finish Edit Data menu will appear.
6. Highlight the ***Save*** button and press **ENTER**.



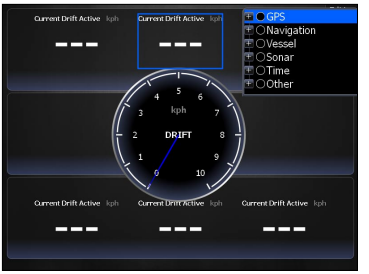
GPS category



Ground Speed subcategory

NOTE: *Press* **ENTER** *or* **EXIT** *to switch gauges into Edit Mode to Normal Mode.*

Editing data on an analog gauge



Editing data on a digital gauge

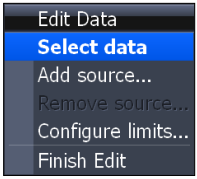
Edit Data menu

Changes Info Page gauge data, allowing you to display desired data on analog , digital and bar gauges. It also controls gauge limits.

To access the Edit Data menu, switch the screen to Edit mode and press **MENU**.

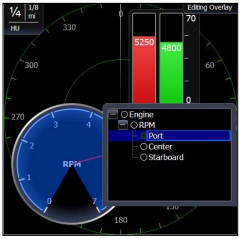
NOTE: *Select Data, Add Source and Configure Limits are described in more detail in the previous Data Overlay segment.*

To select data:



1. Highlight ***Select Data*** from the Edit Data menu and press **ENTER**. The Select Data menu will appear.
2. Use the keypad to select the desired category and press **ENTER**. A list of subcategories will appear.
3. Select the desired subcategory and press ENTER.

To add source:



1. Select ***Add Source*** from the Edit Data menu and press **ENTER**.
2. Use the keypad to select the desired category and press **ENTER**. A list of subcategories will appear.
3. Select the desired subcategory and press **ENTER**.

To remove a source:

1. Highlight ***Remove Source*** from the Edit Data menu and press **ENTER**. The Remove data-source window will appear.
2. Select the source you want to remove and press **ENTER**.

To Configure Limits:

1. Highlight ***Configure Limits*** on the Edit Data menu and press **ENTER**. The Configure Limits menu will appear.
2. Select the desired text box and press **ENTER**.
3. Use the keypad to enter the desired limit or warning threshold.
4. Select ***OK*** and press **ENTER**.

NOTE: *The Limits portion of the Configure Limits menu will only be shown when configuring analog gauge limits.*

To Finish Editing:

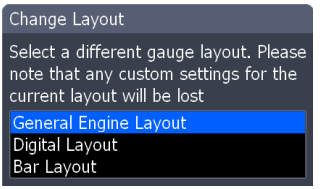
1. Select ***Finish Edit*** from the Edit Data menu and press **ENTER**. A confirmation message will appear.
2. Select ***Save*** and press **ENTER**.

Change Layout

Controls the gauge layout of dashboard templates and customized dashboards. That allows you to select a desired gauge layout template for all dashboards.

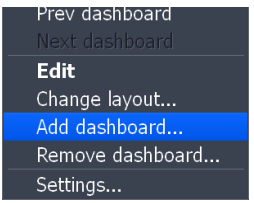
To change layout:

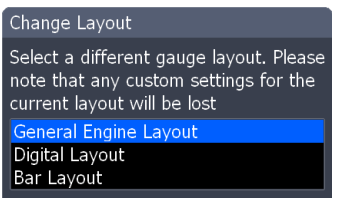
1. Highlight the desired dashboard and press **ENTER**.
2. Select ***Change Layout*** from the Data menu and press **ENTER**.
3. Use the keypad to choose a gauge layout template and press **ENTER**.



Add Dashboard

Allows you to customize and save multiple dashboard templates. Desired data can be added to the gauges on each dashboard, allowing you to create custom dashboards for a variety of fishing conditions. You can even use the same gauge layout template for each dashboard.





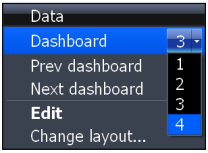
When you have created all desired dashboards, press the keypad left/right to toggle through your dashboards.

To add a dashboard:

1. Select ***Add Dashboard*** from the Data menu and press **ENTER**. The Change Layout menu will appear.
2. Select the desired gauge layout and press **ENTER**. Refer to the previous Edit segment to customize the dashboard.

To remove dashboards:

1. Select the number of the dashboard you want to delete from the numerical dashboard list.
2. Highlight ***Remove Dashboard*** and press **ENTER**. A confirmation message will appear.
3. Select ***Delete*** and press **ENTER**.



Numerical dashboard list

Settings

Opens the Settings menu. Settings information is covered in detail in the Settings menu section.

Utilities

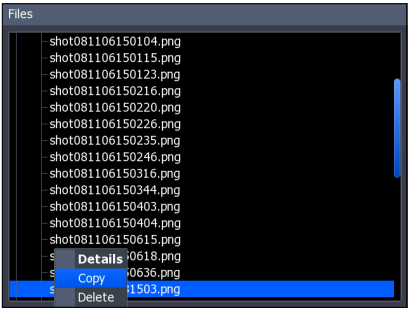
Allows you to set alarms, view sonar logs and access other system settings.

Utilities Icon

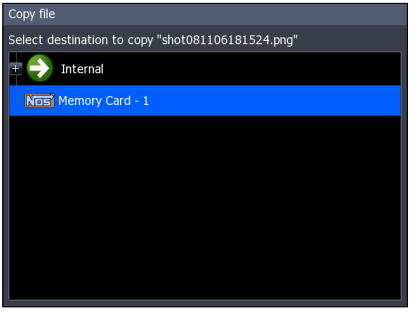
To access Utilities:

1. Use the keypad to center the utilities icon on the screen.
2. Scroll down the list of utilities until the desired option is highlighted.
3. Press **ENTER**.

Utilities	
Waypoints, Routes/Trails	Access Waypoint, Route and Trails screen; covered in the Chart Operation Section
Find	Search for POIs, Vessels, Coordinates, Trails, Waypoints and Routes; covered in Chart Operation Section
Alarms	Access alarm history, status and change settings
Vessels	View status and messages from vessels in the area
Sun/Moon	Displays time when sun and moon will rise/set
Trip Calculator	Keeps running tally/total of engine hours
Files	Access, copy and delete data files and sonar logs



Copying a screenshot



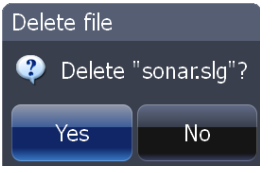
Copy File screen

To copy data files/sonar logs:

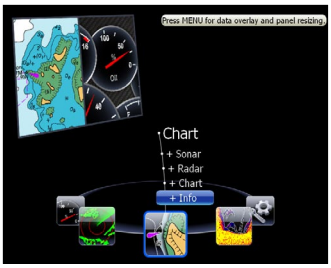
1. Highlight ***Files*** from the Utilities menu and press **ENTER**.
2. Select the desired File category and press the keypad to the right. A list of subcategories will appear.
3. Select a subcategory and press the keypad to the right. Highlight the desired data file/sonar log.
4. Press **MENU**. Highlight ***Copy*** and press **ENTER**. The Copy File screen will appear.
5. Select a place to copy the file, like an MMC card. Press **ENTER**.

To delete data files/sonar logs:

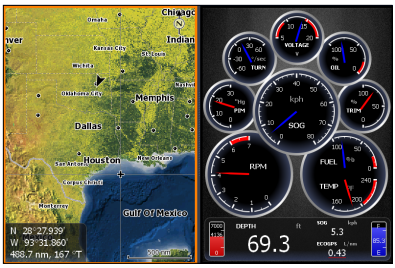
1. Highlight ***Files*** from the Utilities menu and press **ENTER**.
2. Select the desired File category and press **ENTER**. A list of subcategories will appear.
3. Select a subcategory and press **ENTER**. Highlight the desired data file/sonar log. Copy and Delete buttons will appear at the bottom of the screen.



4. Select the ***Delete*** button and press **ENTER**. A confirmation message will appear.
5. Select ***Yes*** and press **ENTER**.



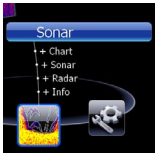
Info selected as combo display option



GPS/Info combo page

Displaying Combo Pages

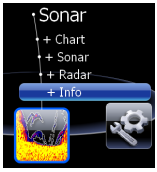
You can display multiple pages at the same time by scrolling the desired page's icon to the center of the screen and then choosing a secondary page from the list of combo page display options.



Primary page

To display a combo page:

1. Use the keypad to select the first page for the combo display. This is the primary page, which will be displayed in the left panel.
2. Select another page from the primary page's combo display list. This is the secondary page. It will be displayed in the right panel.
3. Press **ENTER**. The selected combo page will be displayed.



Secondary page

Selecting an Active Page

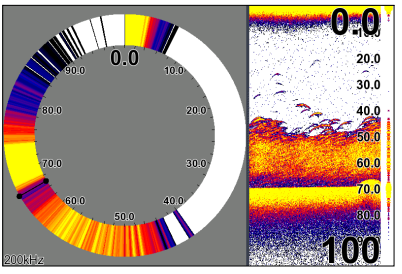
When combo pages are displayed only one panel can be active at a time. The panel outlined with an orange border is the active page. You will only be able to access the context menu of the active panel. Pressing the **MENU** key will open the active panel's context menu.

To switch the active setting to the other panel, hold down the **PAGES** key for 1 second.

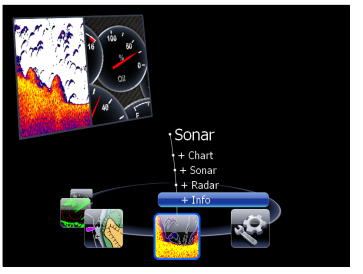
Chart panel is active as shown by the orange border

Displaying Multiple Panels

Multiple panels can be displayed by setting up a combo display using a page that supports the Split feature. By displaying multiple panels, you can view more information on the screen at one time.



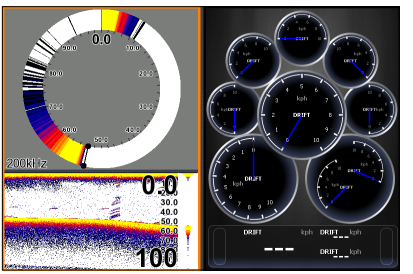
Step 1: Select sonar split screen



Step 2: Choose page from combo display options list

To display multiple panels:

1. Select a Split view for the sonar page. (Accessing the Split feature is covered in detail in the Using your Sonar section.)
2. Press the **PAGES** key and use the keypad to center the Sonar icon on the screen.
3. Use the keypad to select Info Page from the combo page display list. Press **ENTER**. The combo page will be displayed with the Sonar split view on the left; the Info page on the right.

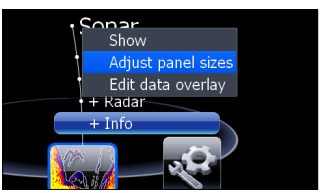


Flasher, normal sonar and the info page shown on a multi-panel display.

Adjust Panel Sizes

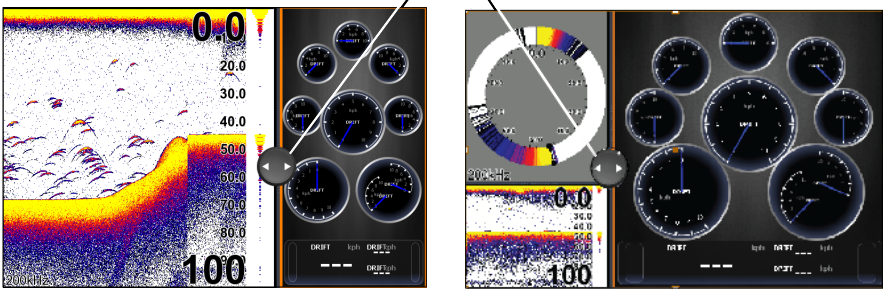
Controls the size of panels when combo pages or multi-panels displays are in use. Adjusting the size of the panels, allows you to emphasize the panel you want to see more clearly.

Panels can only be adjusted left/right, so the panels on the side with the split view can not be adjusted vertically.



Adjust panel sizes selected on the Data Overlay menu

Moving panel cursor left/right will change the size of each panel



Adjusting panels on combo page

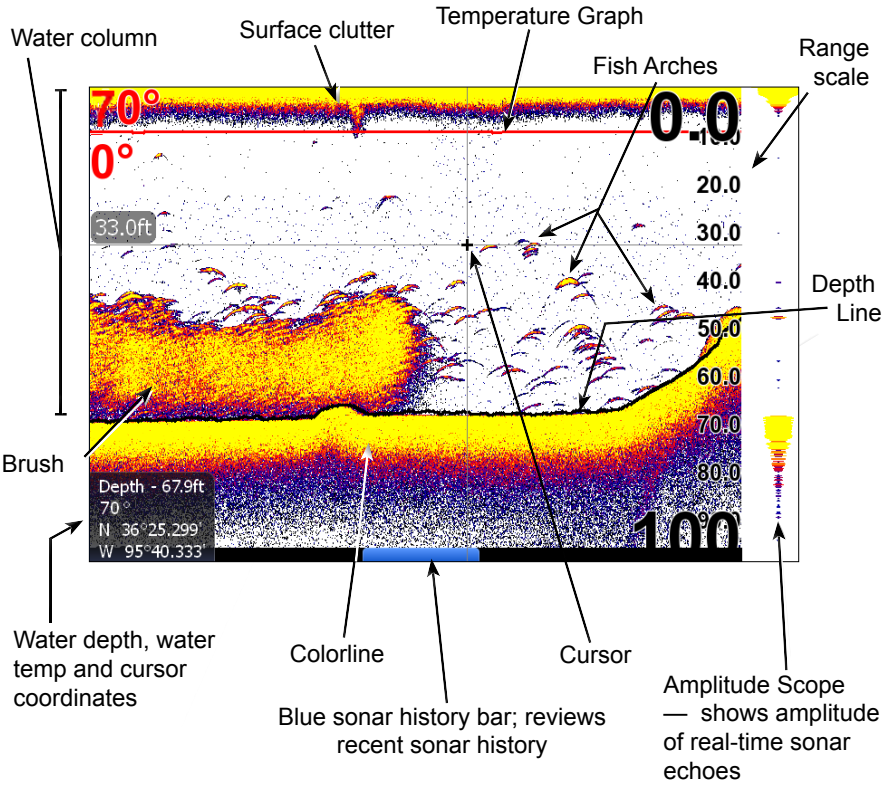
Adjusting panels on multi-panel display

To adjust panel sizes:

1. With the combo page or multi-panel display on the screen, press the **PAGES** key.
2. Press **MENU**. Highlight ***Adjust Panel Sizes*** from the Data Overlay menu and press **ENTER**.
3. Press the keypad left/right to adjust the panels to a desired size and press **ENTER**.

Blank page

Sonar Operation



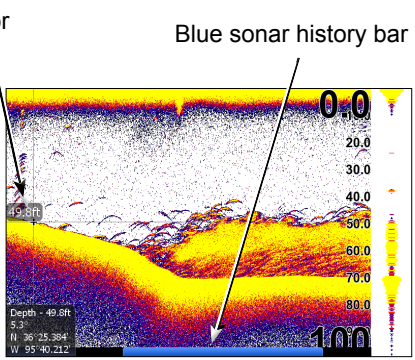
To access the Sonar Page:

1. Press the **PAGES** key.
2. Use the keypad to select ***Sonar*** and press **ENTER**.

Viewing Sonar History

You can review your recent sonar history by moving the cursor to the left until the screen starts to move in reverse.

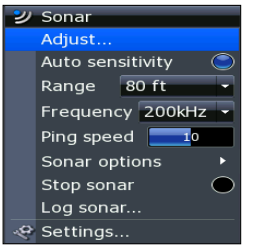
To resume normal sonar scrolling, move the cursor to the right until the blue sonar history bar at the bottom of the screen is all the way to the right. Press **EXIT** to remove the cursor from the screen.



Sonar Menu

Accesses features ranging from Auto Sensitivity and Depth Range to Frequency and Stop Sonar.

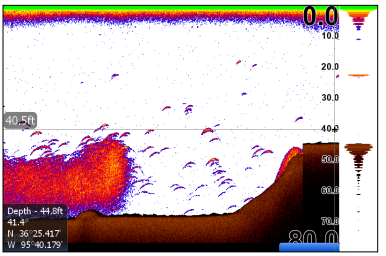
From the Sonar Page, press **MENU** to access the Sonar Menu.



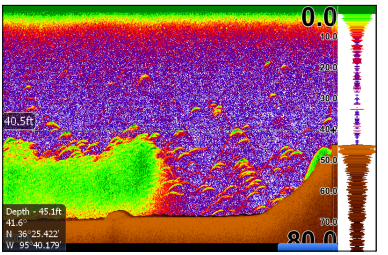
Sonar Menu

Sensitivity

Controls the level of detail shown on the display. Increasing Sensitivity will show more detail on the screen; decreasing Sensitivity displays less. Too much detail will clutter the screen. Conversely, desired echoes may not be displayed if Sensitivity is set too low.



Sensitivity set to 60 percent

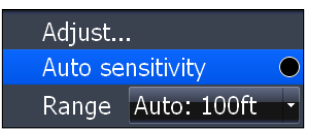


Sensitivity set to 80 percent

NOTE: *By default, Sensitivity is set to auto mode. You may have to turn off Auto Sensitivity to set sensitivity to a desired level. Auto Sensitivity is covered in more detail later in this section.*

Auto Sensitivity

Keeps sensitivity at a level that works well under most conditions, reducing the need for adjustments. You can make minor changes to sensitivity with Auto Sensitivity turned on, but you will have to turn it off to make significant adjustments.

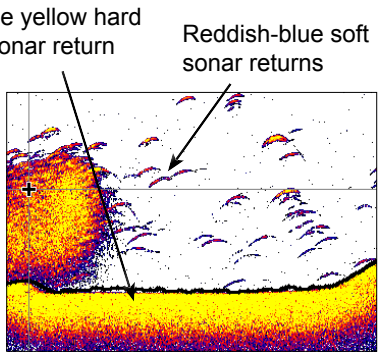


Auto Sensitivity can be turned on/off by selecting ***Auto Sensitivity*** from the Sonar menu and pressing **ENTER**.

Colorline

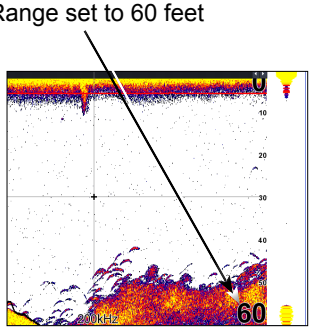
Distinguishes strong sonar echoes from weak sonar echoes. That makes it easier for you to distinguish fish or structure from the bottom.

A hard return will be shown as a wide, bright yellow line, whereas a soft return will be a narrow reddish-blue line.



Range

Used to select the section of the water column — from surface to bottom — shown on the display. When there is a portion of the water column you want to focus on, select a range from the Depth Range menu that includes the desired area.



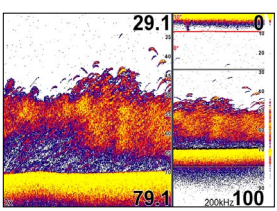
The values on the Range menu determine the depth shown on the display. If you selected 20m from the range menu the unit will display 0-20m of the water column, regardless of the water depth. There are 21 depth ranges, including automatic and custom settings. The automatic setting will set the range from the water surface to water depth.

Frequency

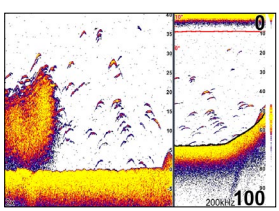
This unit supports three transducer frequencies; two of which are supported by your transducer. 200 kHz has the highest sensitivity and best target discrimination in shallower water; 83 kHz offers a wider cone angle for greater water coverage and 50 kHz provides the best depth penetration. You can view both available frequencies at the same time by setting up a sonar split screen.

Split

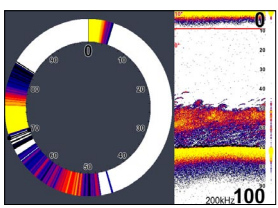
Adjusts the configuration of sonar page display using one of four options: No Split, Zoom, Bottom Lock and Flasher.



Zoom display



Bottom Lock



Flasher Display

- **No Split** — displays full sonar screen
- **Zoom** — splits display with a zoomed-in panel on the left (press **ZOOM** key to increase zoom) and a normal sonar view on the right
- **Bottom Lock** — splits the display with a 2X zoom on the left; a normal sonar view on the right. Keeps the bottom on the screen at all times.
- **Flasher** — splits the display with a flasher-style sonar on the left; a normal sonar view on the right

Stop Sonar

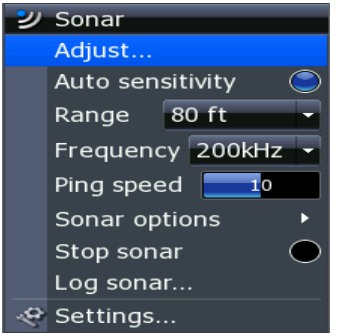
Pauses the sonar chart, allowing you to get a closer look at sonar echoes.

Adjust

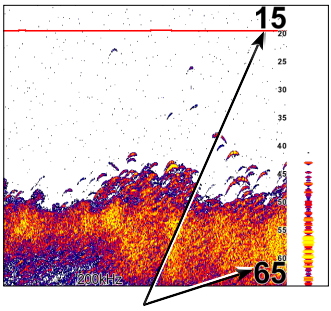
Sensitivity and Colorline can also be adjusted from the Sonar menu by using the Adjust command.

To Adjust Sensitivity and Colorline:

1. Highlight ***Adjust*** on the Sonar menu and press **ENTER**. Press the keypad up/down to select the Sensitivity or Colorline scrollbar.
2. Press the keypad left/right to make adjustments.
3. Press **EXIT**.



Custom — Upper and Lower Limits



Upper limit is 15 feet; lower limit is 65 feet

Controls not only the depth range (lower limit), but also lets you choose the upper limit. So, instead of a selecting a range that includes the water surface, you can choose upper and lower limits anywhere along the water column. The Upper and Lower limit must be at least 2 meters apart.

To set Upper and Lower Limits:

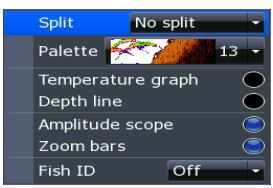
1. Select ***Range*** and press **ENTER**.
2. Highlight ***Custom*** and press **ENTER**.
   The Upper and Lower Limit window will appear.
3. Select the Upper or Lower Limit dialog box. Press **ENTER**. The numerical keypad will appear.
4. Use the keypad to enter the desired value in the corresponding upper or lower limit dialog box. Press **ENTER**.
5. Repeat Steps 3 and 4 to input the desired limit in the other dialog box.

Ping Speed

Ping Speed controls the rate the transducer uses to send sonar waves into the water. A higher ping speed will yield the best results when you are moving across the water at a high rate of speed or fishing from a dock. The reverberation of too much ping speed can cause interference on the screen.

When using two units on your boat, lowering the ping speed of one of the units will prevent interference (cross-talk) caused by one transducer detecting pings from the other transducer. The default setting is suitable for most conditions. Highlight ***Ping Speed*** on the Sonar menu and press the keypad left/right to make adjustments.

Sonar Options



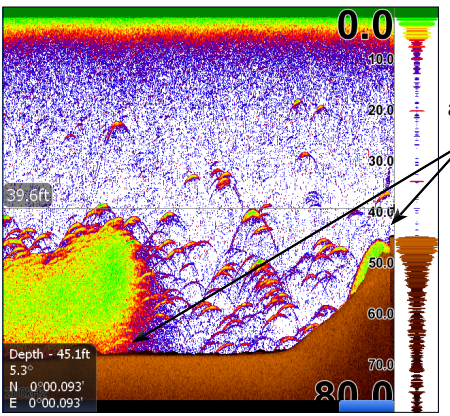
Adjusts display settings and the configuration of the display. The Sonar Options menu allows you to split the screen between two sonar views, change the color of the display, use Fish ID and add graphical elements to screen that will enhance your sonar experience.
To access the Sonar Options menu, select ***Sonar Options*** from the sonar menu and press **ENTER**.

To select a Split option:

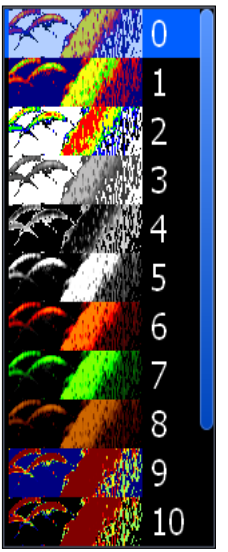
1. From the Sonar Options menu, highlight ***Split*** and press **ENTER**. The Split menu will appear.
2. Use the keypad to select the desired option and press **ENTER**.

Palette

Sonar display color templates with varying degrees of color and brightness. On the Palette menu, you can select a sonar display template suited for your fishing conditions from 14 palette options.



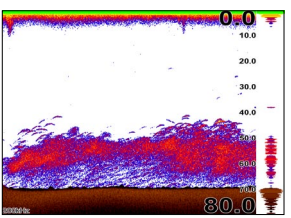
A bottom brown palette clearly separates fish and structure from the bottom

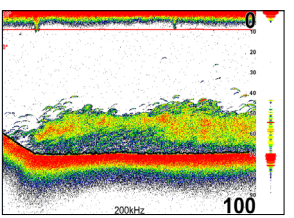


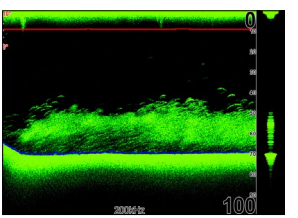
Palette menu

To select a Palette:

1. From the Sonar Options menu, highlight ***Palette*** and press **ENTER**.
2. Use the keypad to select the desired palette and press **ENTER**.



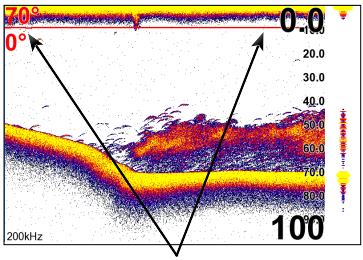




Temperature Graph

Uses a red line graph with digital display at the top of the screen to illustrate changes in Temperature. The Temperature graph makes it easier to recognize temperature trends.

To turn the Temperature Graph on/off, highlight ***Temperature Graph*** on the Sonar Options menu and press **ENTER**.

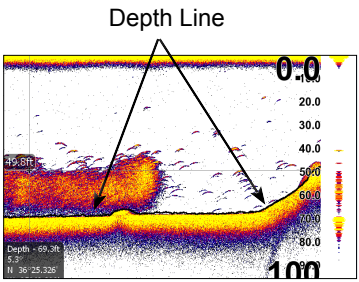


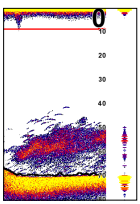
Temperature graph

Depth Line

Displays a dark line over the bottom surface, making it easier to distinguish the bottom from fish, trees and other objects.

To turn on/off the Depth Line, select ***Depth Line*** and press **ENTER**.





Amplitude Scope

Allows you to see the amplitude of real-time echoes as they appear on the display. The Amplitude Scope displays live returns even when you are viewing your sonar history. To turn off the Scope, highlight ***Amplitude*** scope on the Sonar Options menu and press **ENTER**.

Amplitude Scope

Zoom Bars

When your unit is in Split Zoom mode, zoom bars show which echoes will be displayed on the screen when the display is zoomed in to a particular zoom range. Only echoes shown between the top and bottom of a zoom bar will be displayed at that selected zoom range.

To turn on/off Zoom Bars, highlight ***Zoom Bars*** on the Sonar Options menu and press **ENTER**.

NOTE: *When the screen is zoomed, you can use the Zoom Pan feature to scroll up and down the water column. That allows you to see portions of the water column not visible at the selected zoom range. When turned on, Zoom Bars will appear when the Zoom in key is pressed.*

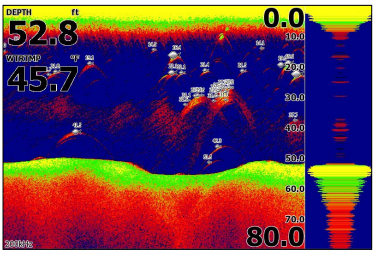
Fish ID

Displays fish echoes as fish symbols instead of fish arches with or without depth. This makes it easier to recognize fish on the sonar display.

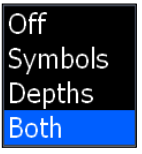
Symbols — places a fish symbol where a fish is detected.

Depths — places depths above each fish detected; helps gauge the distance from each fish symbol to the boat.

Both — turns on both Symbols and Depths.



Fish Symbols and Depths



To select Fish ID option:

1. Highlight ***Fish ID*** and press **ENTER**.
2. Use the keypad to select ***Symbols, Depths*** or ***Both*** and press **ENTER**.

Log Sonar Data

Used to save sonar chart data to your unit's internal memory or to an MMC/SD card.

To access the Sounder Logging menu, select ***Log Sonar Data*** from the Sonar menu and press **ENTER**.

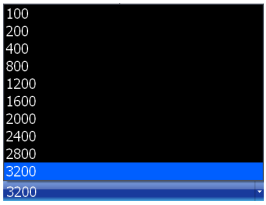
Log Sonar Menu	
Filename	Input the desired name for the sonar log file
Save to	Selects location where sonar log will be saved/stored
Bytes	Controls number of bytes per sounding. More bytes yields better resolution/shorter logging time; conversely, fewer bytes produces longer sonar logs/lower resolution
Time Remaining	Recording time left until memory storage runs out

To input filename:

1. Highlight the Filename text box and press **ENTER**. A keyboard will appear on the screen.
2. Use the keypad to input the desired filename.
3. Select ***OK*** and press **ENTER**.

Filename keyboard

Internal selected on device menu



Bytes per sounding menu

To select Save to or Bytes per Sounding:

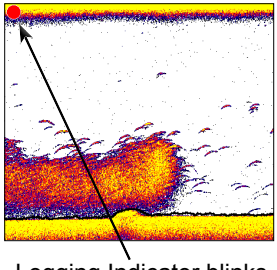
1. Highlight ***Save to*** or ***Bytes per Sounding*** from the Sounder Logging menu and press **ENTER**.
2. Use the keypad to select the desired option and press **ENTER**.

Start Logging

A sonar log is a recording of sonar activity displayed on the sonar page.

To record a sonar log, highlight the ***Start Logging*** button and press **ENTER**.

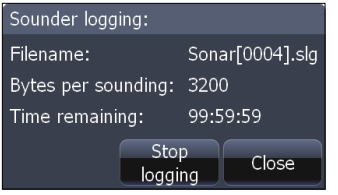
When a sonar log is being recorded, a blinking red circle will be displayed in the upper left-hand corner of the screen and a logging message will appear periodically at the bottom of the screen.



Logging Indicator blinks when sonar is being recorded

To stop logging:

1. Select ***Stop*** from the Sounder Logging menu and press **ENTER**. The Stop Logging menu will appear.
2. Highlight the ***Stop Logging*** button and press **ENTER**.

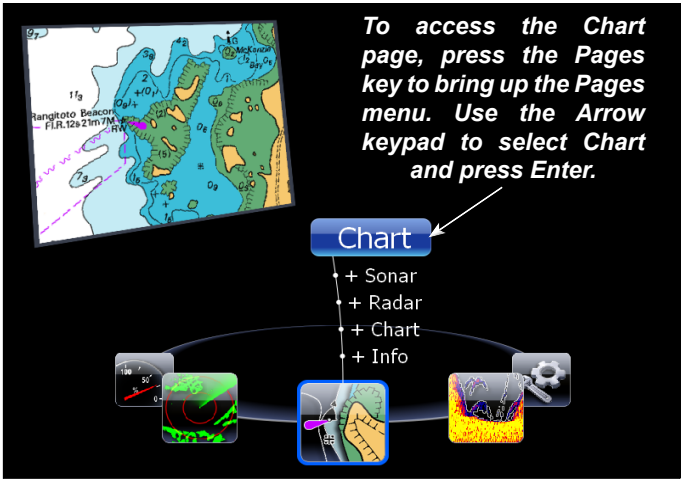


Stop Logging menu

NOTE: *Refer to the Utilities segment of the Pages section for information on copying and deleting files.*

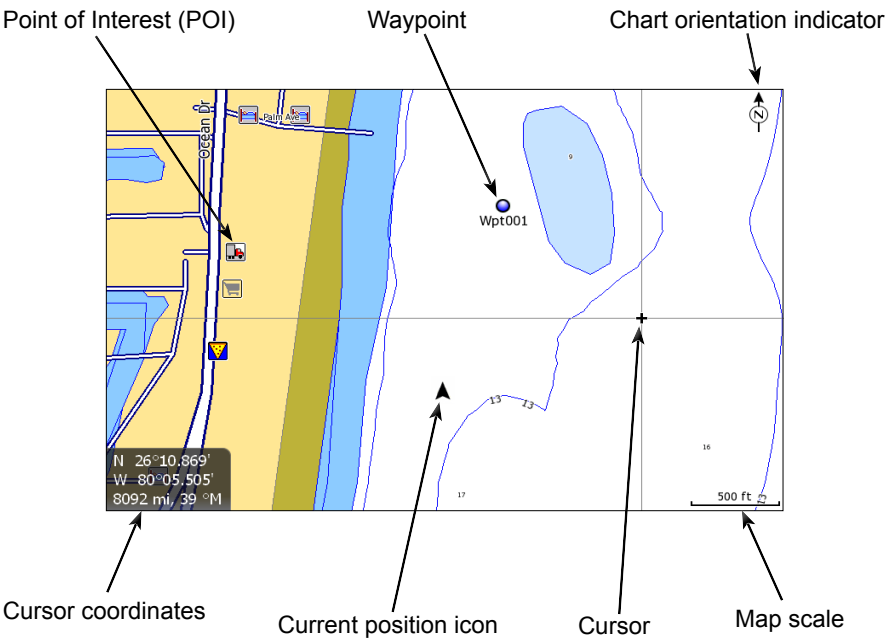
Chart Operation

Displaying the Chart page



Access the Chart page from the Pages menu.

Chart page (2D Chart mode)



The previous image shows some of the different items you will see when viewing the Chart page:

- ***Point of Interest (POI):*** A position on the Chart page represented by a symbol or character.
- ***Cursor:*** Used to view specific areas on the Chart page, select POIs, create waypoints and measure distances. When the cursor is on-screen, pressing the **Exit** key will toggle between the cursor's location on the Chart page and your actual position. As long as the cursor is on the Chart page your actual position may not be visible.
- ***Chart orientation indicator:*** Indicates the current direction the Chart page is facing.
- ***Cursor coordinates:*** Displays the coordinates of the cursor on the Chart page.
- ***Waypoint:*** An electronic address based on the latitude and longitude of a selected Chart location.
- ***Map Scale:*** Represents the relationship between the distance on the Chart page and the real distance on the earth's surface.
- ***Current position icon:*** Represents your current position.

Find Current Position

Power on the unit and display the Chart page. The current position icon represents your current position on screen. The icon always points to your heading. If the current position icon displays a question mark then the unit has not achieved a satellite lock and is not tracking your current position. When sufficient satellites are received to determine a position, the icon's movement will correspond with your movement.

Chart menu

Use the Chart menu to adjust settings and enter commands. From this menu you have access to routes, waypoints, info, chart options and screen settings. To open the Chart menu, go to the Chart page and press the **MENU** key. The following features are listed in the order they appear on the Chart menu, top to bottom:

- ***New Waypoint:*** Creates a new waypoint.
- ***New Route:*** Creates a new route.
- ***Go to Cursor:*** Navigates to the cursor position on the Chart page.

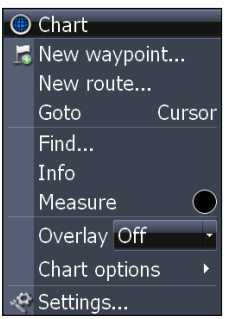


Chart menu

- ***Find:*** Opens the Find menu. From the Find menu you can search for items by select categories.
- ***Info:*** Shows a list of items close to the cursor.
- ***Measure:*** Used to measure the distance between current position and another point on the Chart page or between two different points.
- ***Overlay:*** Toggles radar overlay overlay on or off.
- ***Chart options:*** Opens the Chart options submenu which contains the Map Orientation, Look Ahead, Chart categories and Imagery features.

Map Orientation controls the way the Chart page moves in relation to your movement. The Map Orientation settings are North Up, Heading Up and Course Up.

Look Ahead increases the view of your track.

Chart categories opens the Chart Categories screen.

Imagery selects between 2D and Shaded Relief mapping (only available on select models).

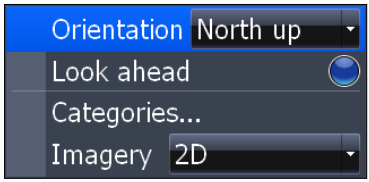


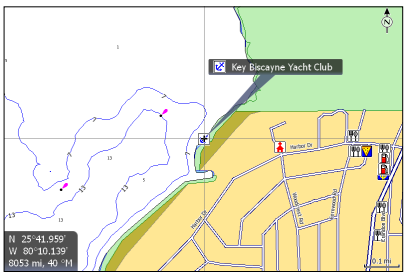
Chart options submenu

- ***Settings:*** Opens the Settings menu.

Selecting POIs on Chart page with Cursor

To select a Chart page POI:

1. From the Chart page use the Arrow keypad to center the cursor over a POI. A pop-up box will appear describing the POI. The POI's coordinates are displayed in the lower left hand corner of the Chart page.



Waypoints

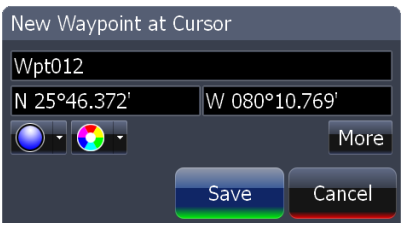
A waypoint is the latitude and longitude of a specific position on the earth's surface. You can quickly create a waypoint at your current position or you can create a waypoint at the cursor's position on the Chart page. You also can create a waypoint at any location by manually entering the position's latitude and longitude.

Waypoints are important because they can be saved in the unit and later used to find your way back to a specific location, such as a favorite fishing spot or an important geographical feature. To quickly save a waypoint at the vessel's current position press the **WPT/FIND** key.

Create/Delete Waypoint from Chart page

To create a Waypoint at the Cursor's position on Chart page:

1. Place the cursor on the Chart page where you want to set the waypoint and press **ENTER** twice. The New Waypoint menu will appear.
2. Select ***Save*** from the New Waypoint menu.



New Waypoint at Cursor menu

To create a Waypoint at the Vessel's position on Chart page:

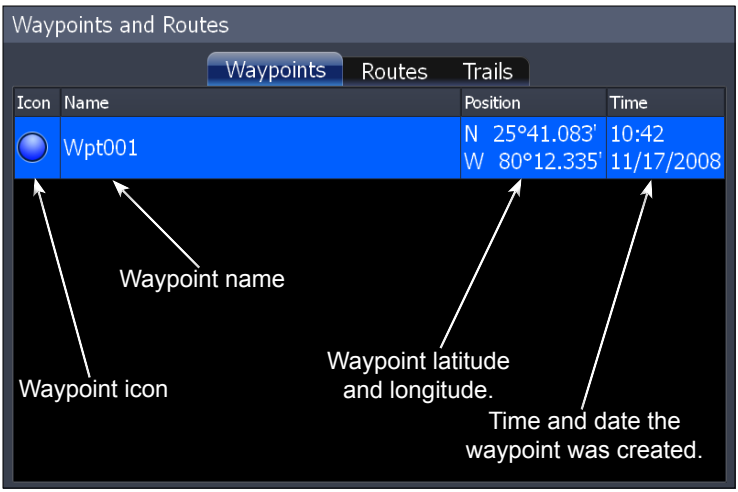
1. Press the **MENU** key. From the Chart menu select ***New Waypoint***.
2. When the New Waypoint at Vessel menu appears, select ***Save***.

To Navigate to a Waypoint from the Waypoints screen:

1. From the Pages screen select ***Waypoints, routes, trails***, press **ENTER**. When the Waypoints screen appears select the waypoint you want to navigate to from the waypoints list and press **MENU**. The Waypoints screen menu will appear. From the Waypoints screen menu select ***Go to***.

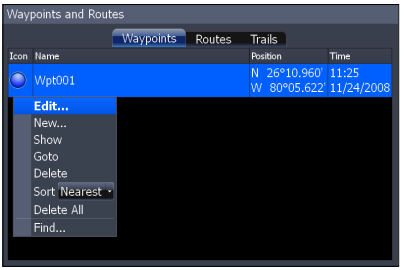
Waypoints screen

To view stored waypoints go to the Waypoints screen in the Utilities page. From the Waypoints screen you can view and edit stored waypoints.



Waypoints screen menu

To open the Waypoints screen menu, press the **MENU** key from the Waypoints screen. The following features are listed in the order they appear in the Waypoints screen menu, top to bottom:



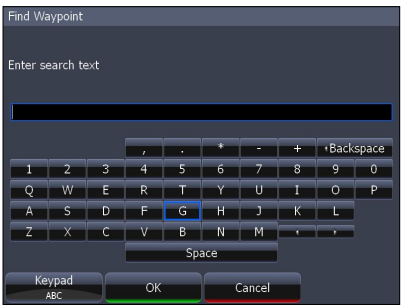
- ***Edit:*** Opens the Edit Waypoint menu.
- ***New:*** Opens the New Waypoint menu.
- ***Show:*** Shows the Waypoint on the Chart page.
- ***Go to:*** Select to navigate to the waypoint.
- ***Delete:*** Deletes selected waypoint.
- ***Sort:*** Controls how waypoints are sorted in the Waypoints screen list.
- ***Delete All:*** Select to delete all waypoints.
- ***Find:*** Use to search for waypoints in the Waypoints screen.

Waypoints screen, Search for Waypoint by name

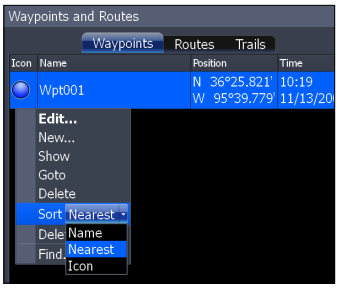
If the waypoint list contains too many waypoints to search through manually, you can search for a specific waypoint by name.

To Search for Waypoint by Name:

1. From the Waypoints screen press the **MENU** key. The Waypoints screen menu will appear**.**
2. From the Waypoints screen menu select ***Find***. A keypad will appear. Use the keypad to enter the name of the waypoint you are searching for and press ***OK***.



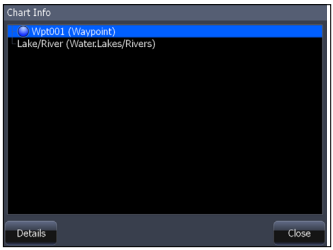
Waypoints screen, Sort Waypoints feature



You can choose how waypoints are sorted in the Waypoints list by selecting ***Sort*** from the Waypoints screen list menu. Waypoints can be sorted by ***Name***, ***Nearest*** or ***Icon***. By default the unit stores waypoints by name.

Waypoint Information screen

When a waypoint is saved to the Chart page, you can view detailed information about that saved waypoint.



To view waypoint information:

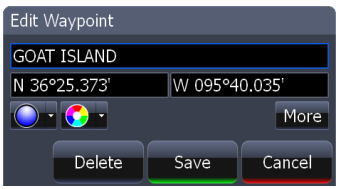
1. Place the cursor over the waypoint and press the **MENU** key.
2. Select ***Info*** and press **ENTER**.

Editing a Waypoint on the Chart page

To Edit a Waypoint from the Chart page:

1. Place the cursor over the waypoint and press the **ENTER** key. The Edit Waypoint menu will appear.

Edit Waypoint menu



The Edit Waypoint menu is used to edit waypoint settings and coordinates. Use this menu to change the name, icon, color and description of a waypoint.

Edit Waypoint, More options:

Select ***More*** from the Edit Waypoint menu and the following edit options will appear:

- ***Name:*** Edit the name of a waypoint.
- ***Position:*** Enter a latitude or longitude for a waypoint.
- ***Icon:*** Select a different waypoint icon.
- ***Color:*** Change waypoint icon color.

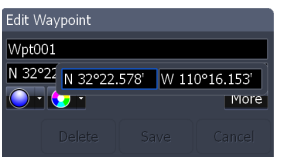
- ***Description:*** Input additional waypoint information.
- ***Display:*** Choose how a waypoint will be displayed on Chart page.
- ***Depth:*** Select waypoint depth.
- ***Alarm Radius:*** Input distance that sounds alarm when near a specific waypoint.
- ***Delete:*** This will delete a waypoint.
- ***Save:*** Saves your waypoint changes.
- ***Cancel:*** Cancels any waypoint changes.

Edit Waypoint name, description, position or depth

To Edit Waypoint name or description:

1. From the Edit Waypoint menu, select the Name or Description text box and press **ENTER**. The Waypoint keypad will appear.
2. Use the keypad to enter the desired waypoint name and select ***OK***.

To Edit Waypoint position:



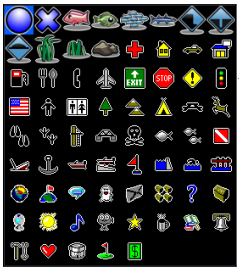
1. From the Edit Waypoint menu select the latitude or longitude text box and press **ENTER**.
2. Use the Arrow keypad to input the desired latitude or longitude and select ***OK***.

To Edit Waypoint depth or alarm radius:

1. From the Edit Waypoint (More) menu select the Depth or Alarm radius text box and press **ENTER**. A numerical keypad will appear.
2. Use the keypad to input the desired depth or alarm radius and press **ENTER**.

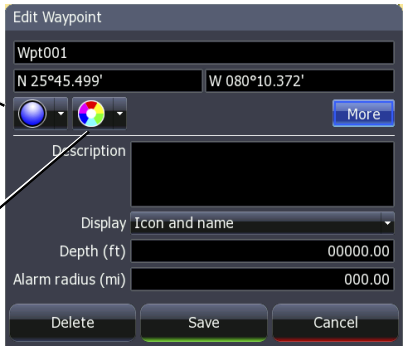
Edit Waypoint icon and color

You can change the default waypoint icon and color from the Edit Waypoint menu.



Edit Icon menu

Icon color palette



Use the Edit Icon menu and Edit Icon Color menu to change the appearance of icons on the Chart page.

Routes

Routes make it easier to plan trips to desired destinations and backtrack to a previous location. A route is a series of waypoints linked together to mark a course of travel. A route must have at least two waypoints. The route segment between two waypoints is called a leg.

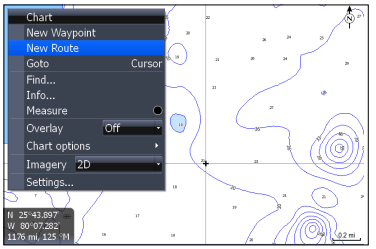
The legs of a route are based on straight lines between waypoints. A route gives you the ability to navigate to several waypoints in an ordered sequence without having to manually select the next waypoint in the series.

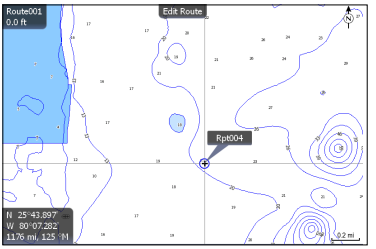
Create Route from Chart page

To create a new route open the Chart menu and select ***New Route***. You can use the cursor on the Chart page to create a route.

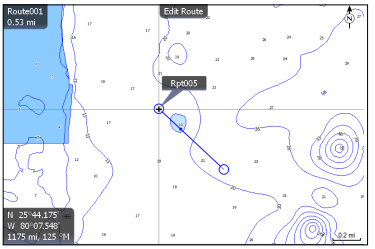
To Create a New Route from the Chart page:

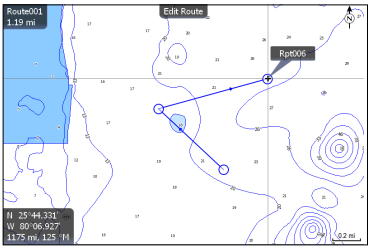
1. Press the **MENU** key and select ***New Route*** from the Chart menu, press **ENTER**.
2. Move the cursor to the start of the route and press **ENTER** to set the first waypoint. Move the cursor to the next location and press **ENTER** to set a second waypoint.



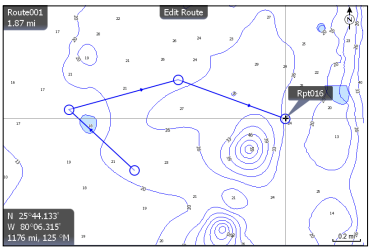


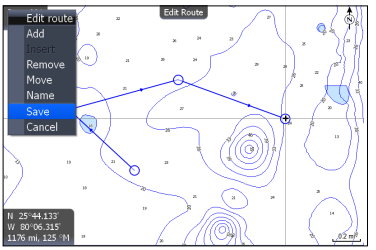
1. Repeat Step 2 until you have set all the desired waypoints along the route.



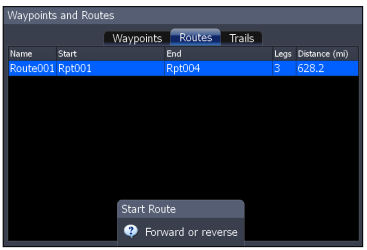


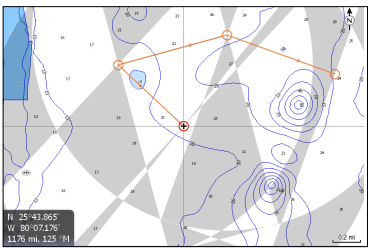
2. Press the **MENU** key to open the Edit route menu. Select ***Save*** and press **ENTER**. The route will be saved to the Routes screen.





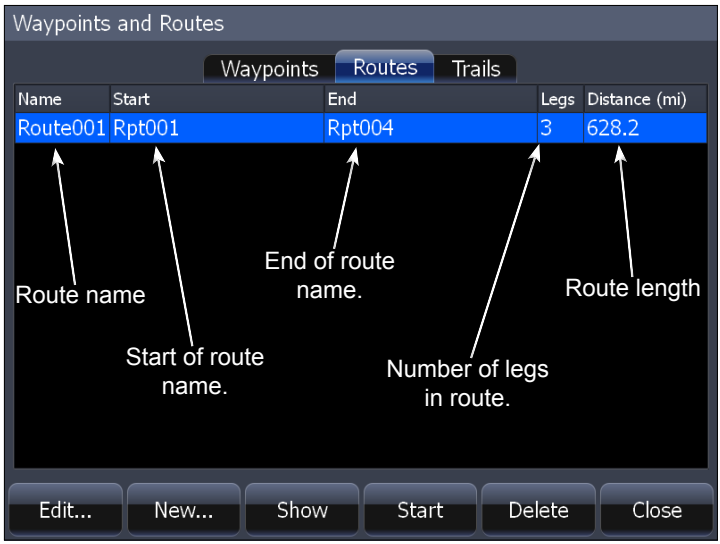
3. From the Routes screen highlight the route and select **Start**. The Start Route message box will appear, select ***Forward***.





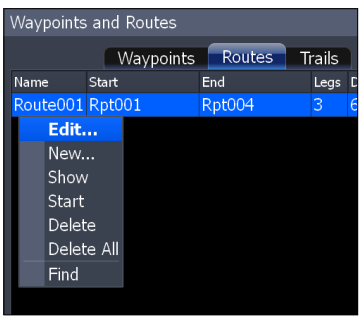
Routes screen

To view stored routes go to the Routes screen in the Utilities page. From the Routes screen you can view and edit stored routes.



Routes screen menu

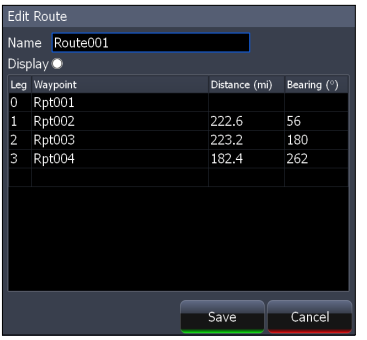
From the Routes screen menu you can create a new route, edit a route or start a route. To open the Routes screen menu, from the Routes screen, press the **MENU** key. The following features are listed in the order they appear in the Route screen menu, top to bottom:



- ***Edit:*** Opens the Edit Route screen.
- ***New:*** Opens the New Route screen.
- ***Show:*** Shows the Route on the Chart page.
- **Start:** Select to start navigating a route.
- ***Delete:*** Deletes a selected route.
- **Delete All:** Deletes all routes in the Route screen.
- **Find:** Use to search for routes in the Routes screen.

To Edit Route:

1. From the Routes screen select the route to be edited and press **ENTER**. The Edit Route screen will appear.
2. From the Edit Route screen you can edit the route name, display and waypoints in the route.
3. Use the Arrow keypad to select which route feature you want to edit and press **ENTER**.



Edit Route screen

To Display / Hide Route:

1. From the Routes screen select the route from the routes list, press **ENTER**. The Edit Route screen will appear.
2. Highlight the Display check box and press **ENTER** to either Display or hide the route from the Chart page.

To Insert, Edit or Remove Waypoints from a Route:

1. From the Routes screen select a route from the route list, press **ENTER**.
2. The Edit Route screen will appear. Select a waypoint from the Waypoint list, press **MENU**. A small submenu will appear with the options: ***Insert***, ***Edit*** and ***Remove***.
3. Select ***Insert*** and press **ENTER** to insert a waypoint into the route. To remove a waypoint select ***Remove***. Selecting ***Edit*** will bring up the Edit Waypoint dialog.

To Navigate Route from Routes screen:

1. Select the route you want to navigate and press **MENU**. The Routes screen menu will appear.
2. Select ***Start*** from the Routes screen menu The Start Route dialog will appear. Select ***Forward*** to navigate the route forward or ***Reverse*** to navigate the route in reverse.

To Search for Route by Name:

1. From the Routes screen press **MENU**. The Routes screen menu will appear.
2. From the Routes screen menu select ***Find***. A keypad will appear. Use the keypad to enter the name of the route you are searching for and press ***OK***.

Trails

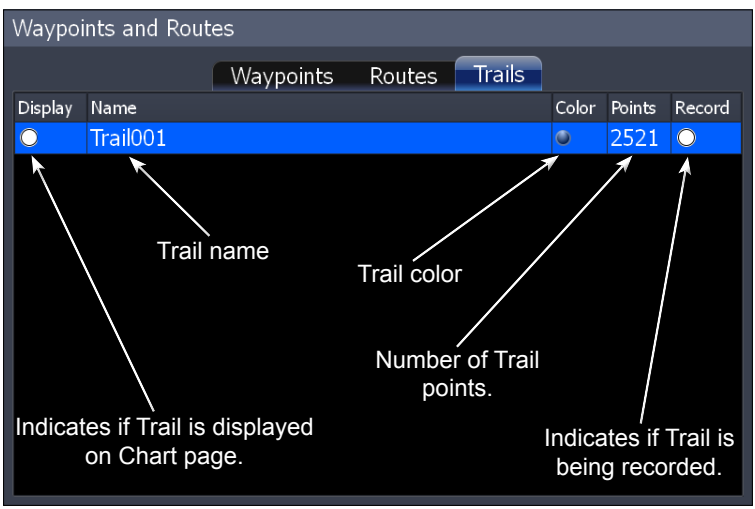
A trail is a record of the path you have traveled. Trails not only show you where you have been, they can be used to retrace your path back to your starting point. On the Chart page a trail is presented by a solid line extending from the back of the current position icon.

From the factory, the unit is automatically set to create and record a trail when the unit is turned on and you are navigating. The unit will continue to record a trail until the trail length reaches the maximum trail point setting.

When the unit reaches the maximum trail point number it will automatically begin recording the trail over itself. By default, the unit places a dot (trail point) on the Chart page every time you change course.

Trails screen

To view stored trails go to the Trails screen in the Utilities page. From the Trails screen you can view and edit stored trails.



Trails screen menu

From the Trails screen menu you can create a new trail, edit a trail or delete a trail. To open the Trails screen menu, press the **MENU** key from the Trails screen. The following features are listed in the order they appear in the Trails screen menu, top to bottom:

- ***Edit:*** Opens the Edit Trail menu.
- ***New:*** Opens the New Trail menu.
- ***Show:*** Brings up the Chart page and shows the trail.
- ***Display:*** Select or deselect to display or not display trail on Chart page.
- ***Record:*** Select or deselect to actively record a trail.
- ***Delete:*** Deletes a selected trail.
- ***Delete All:*** Select to delete all trails.
- ***Find:*** Use to search for trails in the Trails screen.

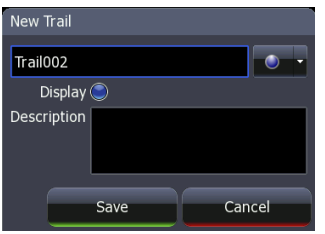
Trails screen menu

New Trail menu

You can edit a trail from the New Trail menu or from the Edit Trail menu once a trail is created.

To Create a New Trail:

1. From the Pages screen, select ***Utilities*** and press **ENTER**. The Waypoints and Routes screen will appear.
2. From the Waypoints and Routes screen select ***Trails***. The Trails screen will appear.
3. From the Trails screen, press **MENU**. The Trails screen menu will appear.



New Trail menu

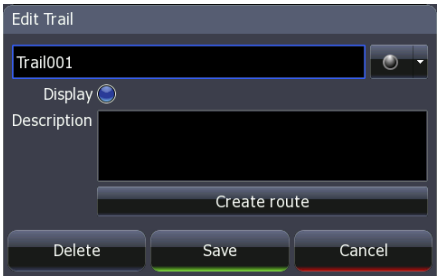
4. From the Trails screen menu select ***New,*** press **MENU**. The New Trail menu will appear, select ***Save***.

Edit Trail menu

The Edit Trail menu is used to edit trail settings and coordinates. Use this menu to change the trail name, trail color and description of a trail.

To edit a Trail name:

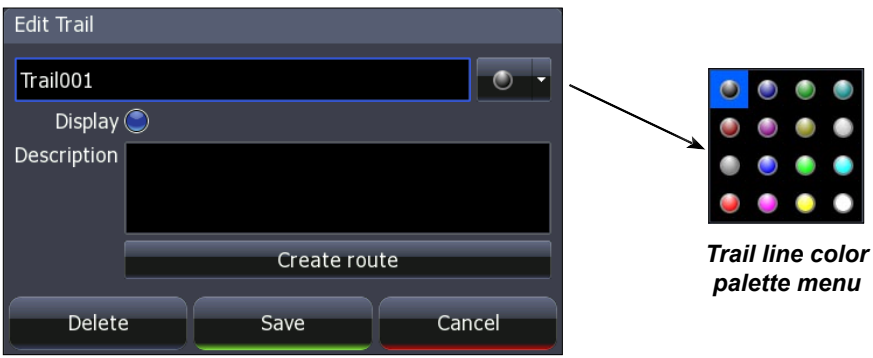
1. From the Trails screen select the trail to be edited, press **ENTER**. The Edit Trail menu will appear.
2. From the Edit Trail menu you can edit the name of the trail by selecting the trail name box and pressing **ENTER**. The Edit Trail name keypad will appear. Use the keypad to enter the desired trail name and select ***OK***.



Edit Trail menu

Trail line Color options

You can change the default trail line color from the Edit Trail More menu by selecting the Trail line color palette option.



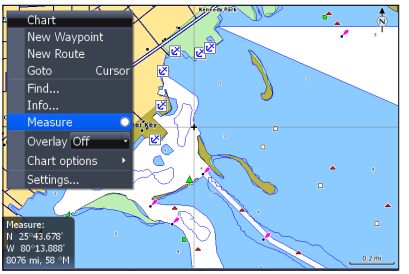
Trail line color palette menu

NOTE: *If you record several overlapping trails, changing the color of the different trail lines is a good way to keep them separate when viewing them on the Chart page.*

Measuring Distances on Chart page

Use the Measure feature from the Chart menu to measure distances between yourself and another location on the Chart page or between two different points.

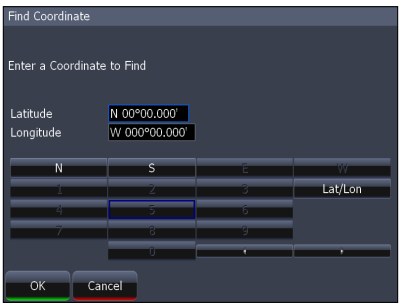
To select/deselect Measure feature:



1. From the Chart page press the **MENU** key. The Chart menu will appear.
2. From the Chart menu select ***Measure***.
3. When the cursor is on screen the cursor coordinates window will display distance from your position to the cursor position on the Chart page.
4. To measure distance between two different points on the Chart page, place the cursor over a point and press **ENTER**, an **X** will appear on the Chart page. Distance will be measured from the **X** on the Chart page to wherever the cursor is placed on screen.

Search by Coordinates

To search for Chart page POI using coordinates:

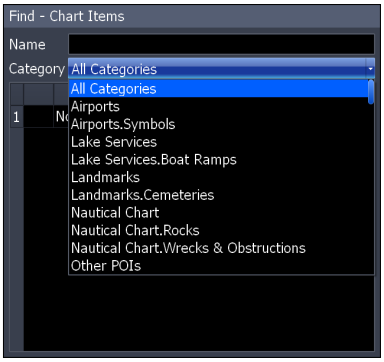


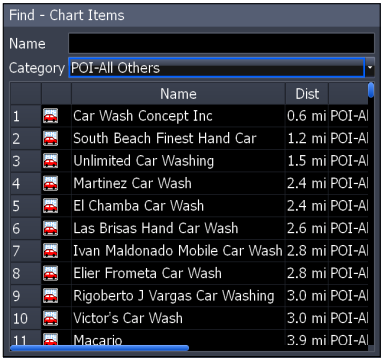
1. From the Chart page press the **MENU** key. The Chart menu will appear, select ***Find***. The Find menu will appear.
2. From the Find menu select ***Coordinate***. The Find Coordinate keypad will appear. Use the keypad to enter the desired coordinates and select ***OK***.

Find Chart item

To search for specific Chart page item:

1. From the Chart page press the **MENU** key. The Chart menu will appear, select ***Find***. The Find menu will appear.
2. From the Find menu select ***Chart Items***. The Find - Chart Items screen will appear. Select ***Name***, a keypad will appear. Use the keypad to enter the name of the chart item and select ***OK***.





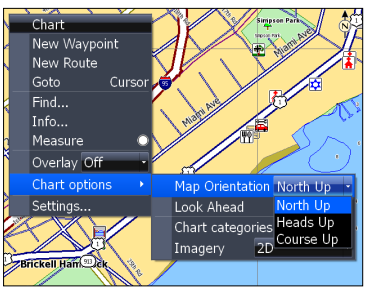
To view a list of specific Chart POI search options select Category from the Find - Chart Items screen. A drop down list will appear. Select the specific category from the drop down list.

Map Orientation

To change Chart page orientation:

1. From the Chart page press the **MENU** key. The Chart menu will appear, select ***Chart options***. The Chart options submenu will appear.
2. From the Chart options submenu select ***Map Orientation***. The three Map Orientation options are: ***North Up***, ***Heads Up*** and ***Course Up***.

- ***North Up*** — Displays the Chart page with North always at the top of the screen.
- ***Heads Up*** — Displays the Chart page in the direction the boat is facing.
- ***Course Up*** — Displays the Chart page at the same orientation as your initial bearing to a destination.



Look Ahead

Keeps your current position at the bottom of the Chart page to display more map area in front of you.

To select / deselect the Look Ahead feature:

1. From the Chart page press the **MENU** key. The Chart menu will appear, select ***Chart options***. The Chart options submenu will appear.

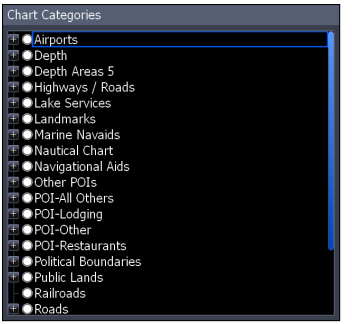
2. From the Chart options submenu select or deselect ***Look Ahead*** to turn this feature on or off.

Chart categories

Use the Chart Categories screen to control what you want to see on the Chart page.

To select / deselect Chart Categories:

1. From the Chart page press **MENU**. The Chart menu will appear; select ***Chart options***. The Chart options submenu will appear.
2. From the Chart options submenu select Chart categories. The Chart Categories screen will appear. Select or deselect the chart options you want to display on screen.

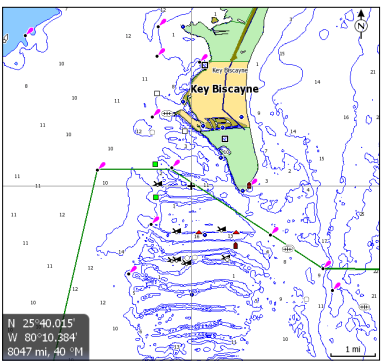


2D and Shaded Relief

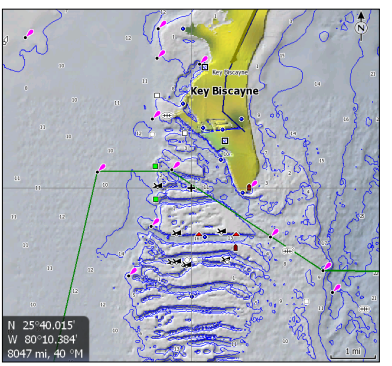
(Shaded Relief only available on U.S. models)

To select between 2D and Shaded Relief:

1. From the Chart page press the **MENU** key. The Chart menu will appear. From the Chart menu select ***Chart options***. The Chart options submenu will appear.
2. From the Chart options submenu select ***Imagery***. The Imagery drop down menu will appear with two map options: ***2D*** and ***Shaded Relief***. Make your selection and press **ENTER**.



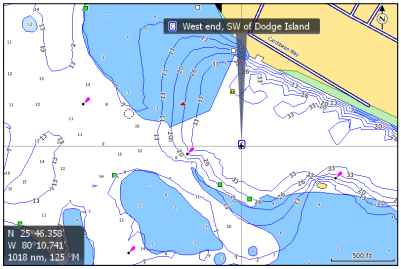
2D mapping

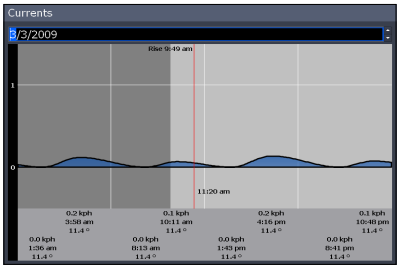


Shaded Relief, only available on U.S. models.

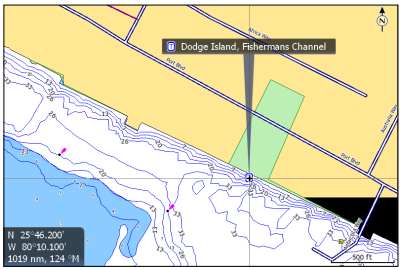
Chart page Icons, Tides and Currents

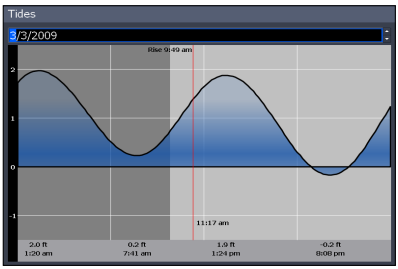
Use the cursor on the Chart page to view detailed information about selected icons, including Tides and Currents.





The image, at left, shows a Current icon selected on the Chart page. To view detailed information about an icon, press the MENU key then select Info from the Chart menu. From the Chart Info screen, press Details.





Detailed information also can be viewed for Tide icons.

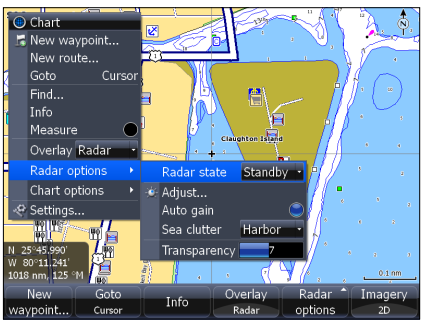
Radar Overlay

Places radar returns on top of the map.

That gives you greater awareness of your surroundings by allowing you to see radar returns aligned with actual radar targets.

To turn on radar overlay:

1. Highlight ***Overlay*** on the Chart menu and press **ENTER**.
2. Select ***Radar*** and press **ENTER**.



Radar Options menu

Radar Options

The Radar Options menu appears when Radar Overlay is tuned on. It allows you to customize the radar overlay settings from the Chart Page.

To access the Radar Options menu, select ***Radar Options*** from the Chart menu and press **ENTER**.

Radar Options menu	
Radar State	Selects radar transmission mode
Adjust	Adjusts Gain, Sea Clutter, Rain Clutter, Interference Rejection and Target Boost
Auto Gain	Automatic Gain setting that is suitable for a variety of conditions
Sea Clutter	Selects Sea Clutter setting from auto (harbor, offshore) and manual settings.
Transparency	Controls the transparency of radar overlay on the map To make adjustments, highlight ***Transparency*** and press the arrow keys left/right

NOTE: *Radar State, Adjust, Auto Gain and Sea Clutter are covered in more detail in the Radar Operation section.*

Navionics

Your unit offers an unprecedented level of 2D and 3D mapping detail and numerous mapping options, including Navionics chartcards. Navico mapping data is displayed by default.

To view Navionics data:

1. Insert your Navonics card in the unit's MMC/SD card slot.
2. Press **MENU** twice, select ***Chart*** and press **ENTER**.
3. Highlight ***Chart data*** and press **ENTER**.
4. Select ***Navionics*** and press **ENTER**.

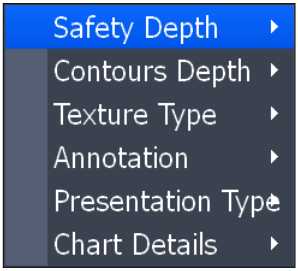
NOTE: *You can use Navionics Platinum, Gold, Silver, Classic and HotMaps chartcards with your HDS unit.*

Navionics Settings menu

Use to customize the way Navionics data will be displayed on the Chart page, allowing you to adjust the features best suited for your fishing conditions.

To change Navionics Settings:

1. Select ***Chart options*** from the Chart menu and press **ENTER**.
2. Highlight ***Settings*** and press **ENTER**.
3. Select a setting and press **ENTER**.
4. Highlight the desired option and press **ENTER**.



Navionics Settings menu

Navionics Settings and Options

- ***Safety Depth*** — Allows you to display the depth areas corresponding to the safety contour desired. Available options are:

  Off: No depth area displayed.

  Other numeric depth values: The areas with depths up to value selected are displayed in shades going from darker blue (for lower depths) to lighter blue (for higher depths). The areas whose depths are over the selected value, and therefore navigable under safety conditions, will be displayed in white. The Dryline areas are displayed in green.

- ***Contours Depth*** — Used to select the display of depth contours.

NOTE: *When Night mode is selected, depth areas are displayed from lighter blue (for lower depths) to darker blue (for higher depths). Depth areas over the value set are displayed in black.*

Available options:

-*5m*: display depth contours up to 5 meters (16 feet)

-*10m*: display depth contours up to 10 meters (33 feet)

-*20m*: display depth contours up to 20 meters (66 feet)

-*All*: all depth contours are displayed

- ***Texture Type*** — Enables (on) or disables (off) the 3D shading feature. *Photo overlay* allows you to enable (full) or disable (off) the aireal photography overlay chart feature.

NOTE: *These features are only applicable with Navionics Platinum™ or Platinum Plus™ charts.*

- ***Annotation*** — Allows you to display "Main" names (i.e. city names) only or the "Full" set of names on the Chart page.
- ***Presentation Types*** — Is used for the selection of the symbols and colors of the navigation chart "look and feel"; either U.S. or International "paper chart" presentation types can be selected.
- ***Chart Details*** — This menu is used to select which object types and information layers are displayed on-screen.

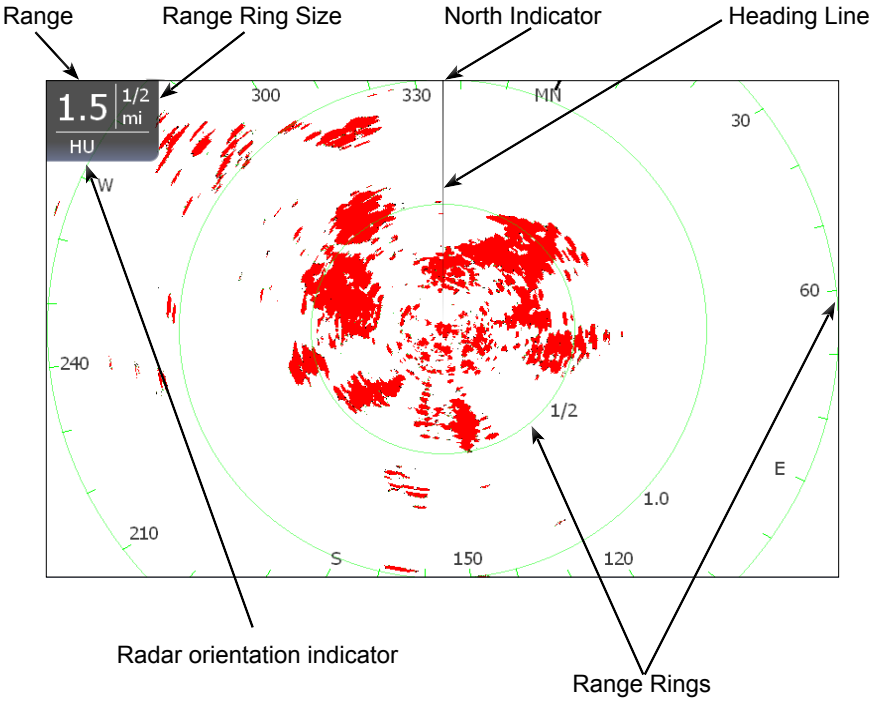
  Available options:

  Standard: Equivalent to standard display settings as defined in ECS regulations.

  All: Enables the display of all the object types and information layers on the Chart page.

  User: Allows selection of individual object types and information layers on-screen.

Radar Operation

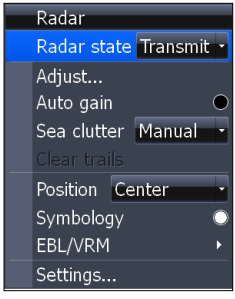


To access the Radar Page:

1. Press the **PAGES** key.
2. Use the keypad to select the ***Radar Icon*** and press **ENTER**.

NOTE: *You will only be able to see the Radar page if your unit is connected to a radar.*

Radar menu



Use the Radar menu to make adjustments to radar display settings and features that not only change the appearance of the display, but also make navigation easier.

To access the Radar menu, press the **MENU** key when the Radar page is on the display.

Radar State

Controls radar transmission modes: Off, Transmit and Standby. Off turns off the radar. Transmit broadcasts a radar signal and standby leaves the radar on, but does not broadcast a signal.

To select Radar State:

1. Press **MENU**, highlight ***Radar State*** and press **ENTER**.
2. Select the desired state and press **ENTER**.

NOTE: *It can take 90 seconds or more to transition from Off to Standby.*

Adjust menu

From the Adjust menu you can make adjustments to Gain, Sea clutter, Rain clutter, Interference rejection and Target boost.

To access the Adjust menu:

1. From the Radar menu select ***Adjust*** and press **ENTER**. The Adjust menu will appear.
2. Highlight the desired setting and press the Arrow keypad left/right to make adjustments.

Gain

Controls the sensitivity of the radar receiver. Increasing gain will show more detail on the screen; decreasing gain will show less detail. Too much detail will clutter the screen. Conversely, desired returns may not be shown if gain is too low.

Auto Gain

Selecting ***Auto gain*** from the Radar menu will automatically set the sensitivity of the receiver to a level that works well under most conditions, reducing the need for adjustments. If you make adjustments to the Gain level when Auto gain is on, Gain will switch to manual mode.

To select Auto Gain:

1. Press the **MENU** key. The Radar menu will appear
2. Select ***Auto gain*** and press **ENTER.**

Sea Clutter

Allows you to select the Sea Clutter adjustment mode — Auto or Manual. If you make changes to Sea Clutter when it is in auto mode (Harbor or Offshore), Sea Clutter will switch to Manual mode.

Sea Clutter Options	
Manual	Switches Sea Clutter from Auto to Manual mode
Harbor	Auto setting optimized for harbor-like environment
Offshore	Auto setting designed for offshore conditions

Rain Clutter

Precipitation reflects radar signals, cluttering the screen. Interference Rejection reduces or eliminates returns caused by rain, hail, sleet or snow.

Interference Rejection

Reduces interference from other active radars near your vessel. If another ship is operating radar near you, interference from its radar signals can appear on your display. Increase interference rejection until radar interference is eliminated from your display. Interference Rejection has four settings: ***Off***, ***Low***, ***Medium*** and ***High***.

Target Boost (only available on some radars)

This feature increases the size of radar targets, making them easier to see on the display. Target Boost has four options: ***Off***, ***Low***, ***Medium*** and ***High***.

Clear Trails

Clears all target trails from the radar screen. New trails will continue to appear unless you turn off the target trails feature.

To Clear Trails:

1. Press the **MENU** key, the Radar menu will appear.
2. Use the Arrow keypad to select ***Clear Trails*** and press **ENTER**.

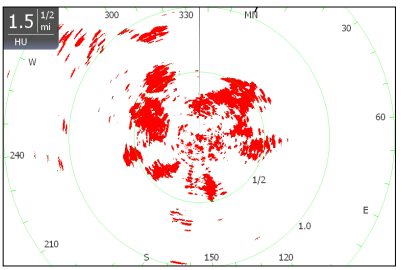
Position

You can move the PPI (Plan Position Indicator) to different locations on the radar display. There are three Position options: ***Center***, ***Look Ahead*** and ***Offset***.

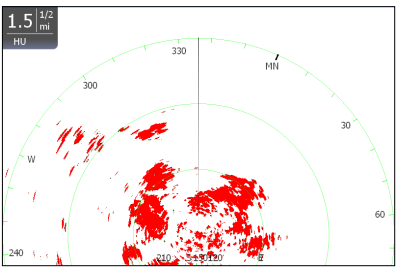
To change the PPI position:

1. Select Position from the Radar menu and press enter.
2. Select the desired position and press enter.

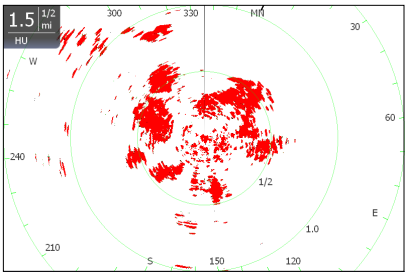
Position	
Center	Default setting, will position the PPI in the center of the screen
Look Ahead	Shifts the PPI to the bottom of the screen, allowing you to see more of the area in front of your vessel
Offset	Allows you to move the PPI to a any location on the display. If you shift the PPI to the right, you will see more of what is to the left of your boat; if you move the PPI forward you will be able to see more of the area behind you



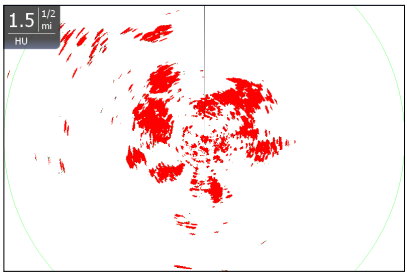
Center: PPI centered on the display



Look Ahead: PPI moves down, allowing you to see more of what is in front of you



Symbology on

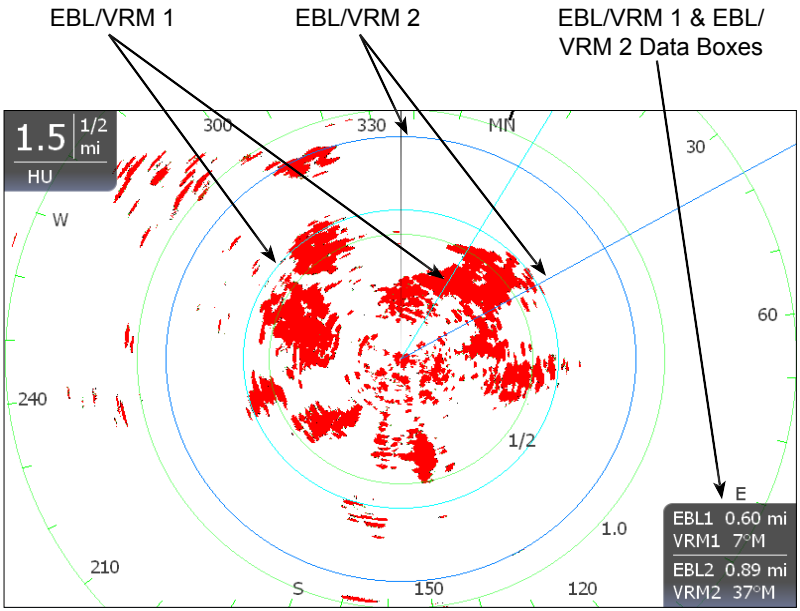


Symbology off

Symbology

Used to turn on/off symbols displayed on the PPI screen, including range rings, range markers and compass overlay. Rather than turn off each display feature individually, the Symbology feature allows you to remove them all at once.

To toggle Symbology on/off highlight Symbology on the radar menu and press enter.

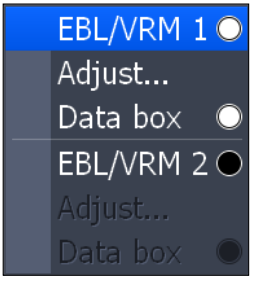


EBL/VRM

An Electronic Bearing Line (EBL) is a radial line used to show the distance of a radar target to your vessel. A Variable Range Marker (VRM) is a range ring used to measure the precise distance to a radar target. Selecting EBL/VRM from the Radar Menu allows you to place up to two EBL/VRMs on the PPI display.

EBL/VRM menu

Places selected Electronic Bearing Line and Variable Range Marker on the display.



EBL/VRM menu

To select an EBL/VRM:

1. Press the **MENU** key.
2. Use the keypad to select the ***EBL/VRM*** and press **ENTER**.
3. Use the keypad to move the EBL and increase/decrease the size of the VRM. Press **EXIT**.

Adjust

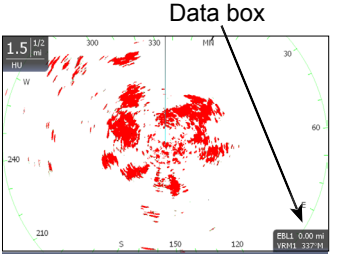
Adjusts size and location of active EBL/VRM.

To adjust an EBL/VRM:

1. From the Radar menu highlight ***EBL/VRM*** and press **ENTER**.
2. Select ***Adjust*** and press **ENTER**.
3. Use the keypad to make adjustments to the EBL/VRM. Press **EXIT**.

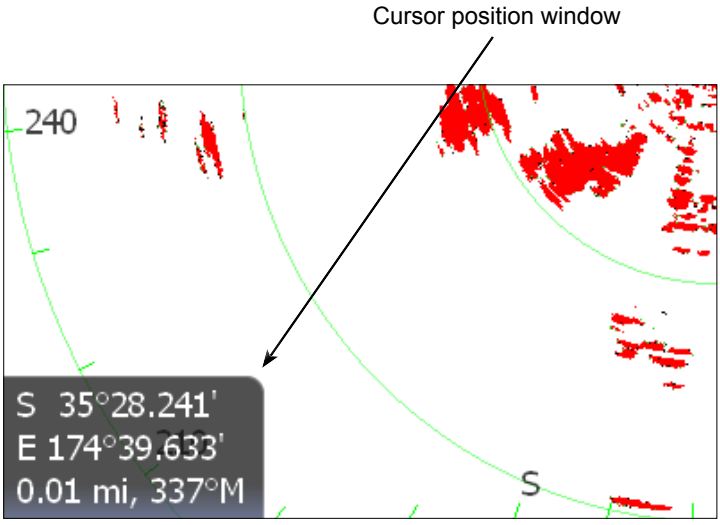
Data Box

Turns on/off on screen EBL/VRM information box**.**
To turn on/off the EBL/VRM information box, highlight ***Data box*** on the EBL/VRM menu and press **ENTER**.



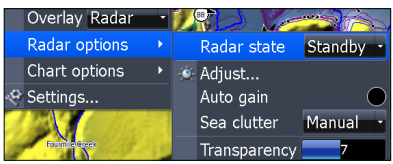
Cursor position window

When the cursor is active on screen the Cursor position window appears in the bottom left corner of the Radar page.



Radar Overlay

Radar Overlay places radar returns on top of the map on the Chart Page.



That gives you greater awareness of your surroundings by allowing you to see radar returns aligned with actual radar targets.

More information on Radar Overlay is available in the Chart Operation section of this manual.

Blank page

Settings Menu

The Settings Menu provides access to installation and advanced configuration settings for your unit. To access the Settings menu, press **MENU** twice.

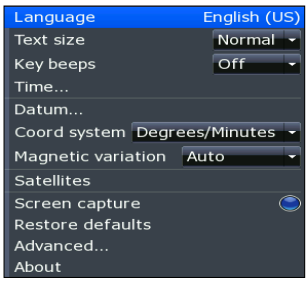
Settings Menu Options		
System	Fuel	Vessels
Page	Alarms	Simulator
Chart (if applicable)	Trails	Sirius (if applicable)
Radar (if applicable)	Units	
Sonar (if applicable)	Network	

System

Used to change system settings like units, language and key beeps.

To access the System menu:

1. Press **MENU** twice.
2. Highlight ***System*** and press **ENTER**.



System Menu

Language

Selects the language used on menus and dialog boxes. The default language is English.

To select a language:

1. Select ***Language*** from the System menu and press **ENTER**.
2. Highlight the desired language and press **ENTER**. A window will appear indicating the unit must restart to switch languages.
3. Select ***Yes*** and press **ENTER**. The unit will restart.

Text Size

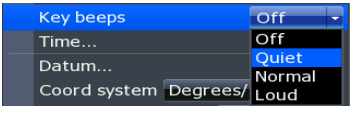
This unit will display text in two sizes: Small and Normal. The Text Size menu allows you to select the size of menu text.

To change Text Size:

1. Highlight ***Text Size*** from the System menu and press **ENTER**.
2. Use the keypad to select the desired text size and press **ENTER**.

Key Beeps

By default, a tone (key beep) will sound when any key is pushed on the unit. You can change key beep volume or turn them on or off from the Key Beep menu.



Key beeps turned on

To change Key Beep settings:

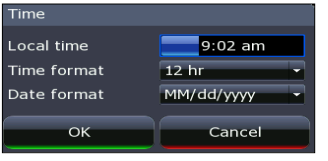
1. Highlight ***Key Beeps*** on the System menu and press **ENTER**.
2. Select the desired setting and press **ENTER**.

Time

Used to change local time to offset differences in time zone and to select the way time and date will be displayed.

To set Time or Date format:

1. Highlight ***Time*** on the System menu and press **ENTER**. The Time menu will appear.
2. Select the Time format or Date format dropdown menu and press **ENTER**.
3. Use the keypad to select the desired format and press **ENTER**.
4. Highlight ***OK*** and press **ENTER**.



To set Local Time:

1. Select ***Local Time*** on the Time menu and press the keypad left/right to select the desired offset.
2. Highlight ***OK*** and press **ENTER**.

Datum

A model of the earth's surface based on a network of surveyed ground features (points). This unit's default datum is WGRS-84.

To select a Datum:

1. Select ***Datum*** from the Chart settings menu and press **ENTER**.
2. Use the keypad to select the desired datum. Press **ENTER**.

Coord System

Controls the coordinate system used when position coordinates are entered and displayed.

To change Coordinate System:

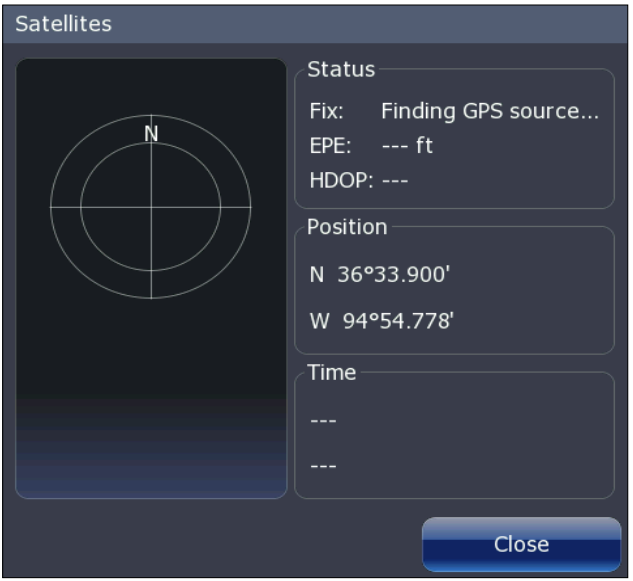
1. Select ***Coord System*** from the Chart settings menu and press **ENTER**.
2. Highlight the desired option and press **ENTER**.

Magnetic Variation

Converts magnetic north data to true north, increasing the accuracy of navigation information. The Magnetic Variance Auto setting, automatically converts magnetic north to true north. When using manual mode, you will have to input the magnetic variance.

To change magnetic variation settings:

1. Highlight ***Magnetic Variation*** on the System menu. Press **ENTER**.
2. Select ***Auto*** or ***Manual*** and press **ENTER**.



Satellite Status

Satellites

Monitors the location of satellites in view and the quality of the unit's satellite lock-on. The Satellite page has two display options.

The Satellite screen displays a circular graphic that shows where satellites are located and a bar graph that monitors the strength of satellites within range of your unit. Your unit is locked on to satellites shown with blue bars.

To access the Satellite screen select ***Satellites*** from the System menu and press **ENTER**.

Screen Capture

Saves images of your unit's screen to your unit. That allows you to capture images of everything from underwater structure and fish to routes, map areas and radar targets.

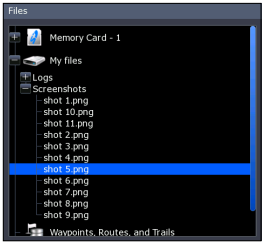
To take a screen capture:

1. Select ***Screen Capture*** from the System menu and press **ENTER**.
2. Press the **LIGHT/POWER** key to capture the current screen. Repeat this step take additional screen captures.

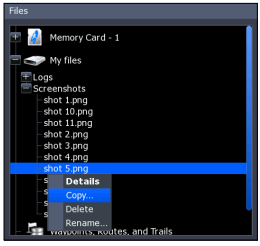
To save screen captures to MMC/SD card:

1. Select ***Files*** from the Utilities list on the Pages menu. Press **ENTER**.
2. Highlight ***My Files*** and press the keypad to the right. Select ***screenshots*** and press the keypad to the right.
3. Select the desired screenshot. Press **MENU**. The screenshot menu will appear.
4. Select ***Copy*** and press **ENTER**. The Copy File menu will appear.
5. Your MMC/SD card will be listed on the screen. Select your MMC/SD card and press **ENTER**. You will be taken back to the list of screenshots. Repeat Steps 3-5 to copy more screenshots.

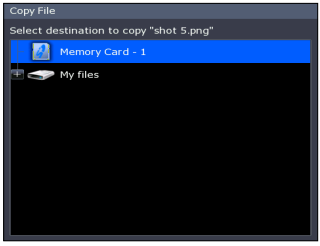
Files selected on Utilities list



Screenshot selected



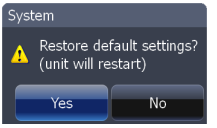
Screenshot menu



MMC/SD card selected

Restore Defaults

To switch the unit back to the settings it had when you purchased it (default settings), use the Restore Defaults command. Reset Defaults will reset the unit to default settings.

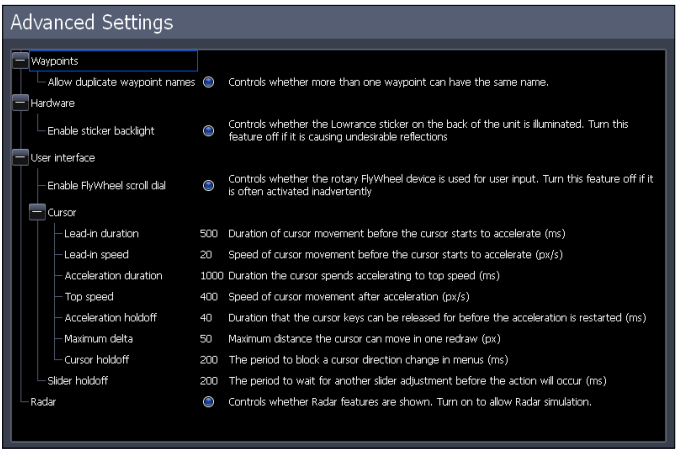


To Restore Defaults:

1. Highlight ***Restore Defaults*** on the System menu and press **ENTER**. A confirmation message will appear.
2. Select ***Yes*** and press **ENTER**. The unit will restart.

Advanced

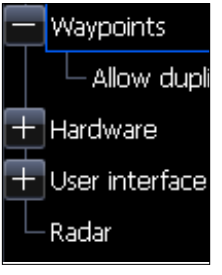
A fine tuning adjustment for advanced users that allows duplicate waypoint names, enables sticker backlight and slider hold off.



Advanced Settings menu (Enabling Flywheel scroll dial setting is available only on HDS-8/10-inch units.)

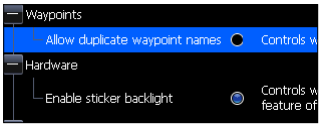
To access Advanced Settings:

1. Select ***Advanced*** on the Settings menu and press **ENTER**.
2. Highlight a desired setting and use the right/left arrow keys to open (—) or close (+) the setting.



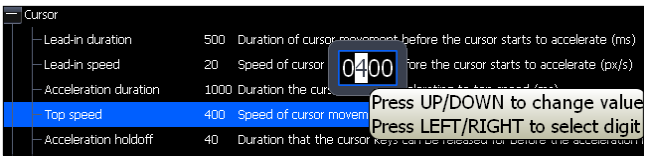
To adjust Waypoint, Hardware, Flywheel and Radar settings :

1. Open the desired setting (—).
2. Highlight the setting information and press Enter to turn it on/off. The center circle will be filled when the setting is on; empty when it is turned off.



To adjust cursor settings:

1. Highlight the desired cursor setting and press **ENTER**. A dialog box will appear.



2. Use the arrow keys to select the desired value and press **ENTER**.

About

Used to view your unit's current software version. To check the unit's software version, highlight ***About*** on the System menu and press **ENTER**.

Chart Settings Menu

Contains Chart settings ranging from display options like Range Rings and Grid Lines to map settings like Chart Data and Datum.

To access the Chart Settings Menu:

1. Press **MENU** twice.
2. Highlight ***Chart*** and press **ENTER**.

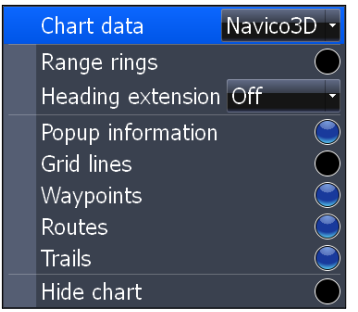


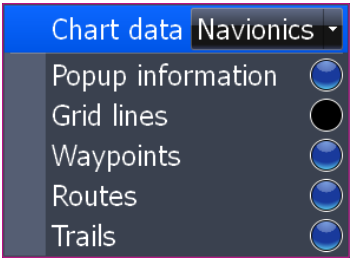
Chart Settings Menu

Chart Data

This unit can use mapping data from Navico and Navionics. The Chart Data menu allows you to select the desired map data (Navico 3D mapping data available in US only).

To select chart data:

1. Highlight ***Chart Data*** on the Chart Settings menu and press **ENTER**.
2. Select the desired map data and press **ENTER**.



The Chart Settings menu changes when Navionics is the selected chart data type.

Range Rings

A navigation aid used to estimate distances. Centered around your location, Range Rings are placed a preset distance from your location, allowing you to quickly estimate distances while navigating.

To turn Range Rings On/Off, highlight ***Range Rings*** on the Chart Settings menu and press **ENTER**.

Range Rings

Heading Extension

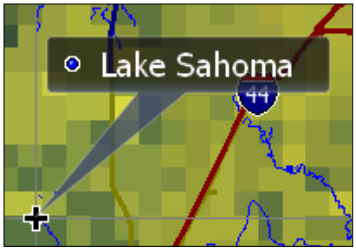
A line extending from the front of the current position icon that is used to estimate distance and time of arrival. The distance and estimated time of arrival is based on the time interval selected from the Heading Extension menu.

To use Heading Extension:

1. Highlight ***Heading Extension*** from the chart menu and press **ENTER**.
2. Select the desired time interval and press **ENTER**.

NOTE: *Range Rings and Heading Extension may not be available in all chart data.*

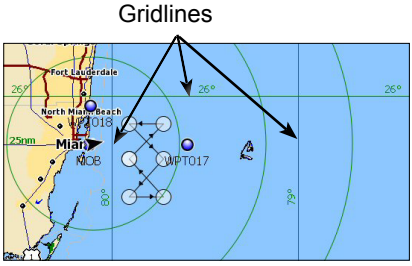
Popup Information



Turns on information windows that appear when the cursor is centered on a point of information. That allows you to identify POIs without having to zoom in to see it on the screen.

To turn on/off Popup Information, highlight ***Popup Information*** on the Chart Settings menu and press **ENTER**.

Grid Lines



Displays base values for latitude and longitude, making it easier to get a general idea of your location on the latitude/longitude scale.

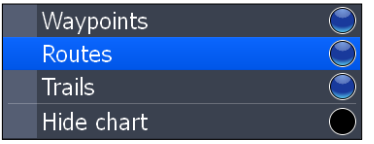
To turn Grid Lines On/Off, select ***Grid Lines*** from the Chart Settings menu and Press **ENTER**.

Waypoints

Turns on/off waypoint display properties. When a large number of waypoints are on the display, turning off waypoints will provide a better view of the map. To turn on/off waypoint display properties, select ***Waypoints*** from the Chart menu and press **ENTER**.

Routes

Turns on/off route display properties. When several routes are on the display, turning off routes will give you a better view of the map.



To turn on/off route display properties, select ***Routes*** from the Chart menu and press **ENTER**.

Trails

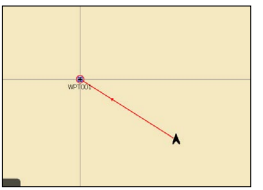
Turns on/off Trail display properties. When several trails are on the display, turning off routes will give you a better view of the map.

To turn on/off trail display properties, select ***Trails*** from the Chart menu and press **ENTER**.

Hide Chart

Removes mapping data from the display, making it easier to view routes, waypoints and the cursor.

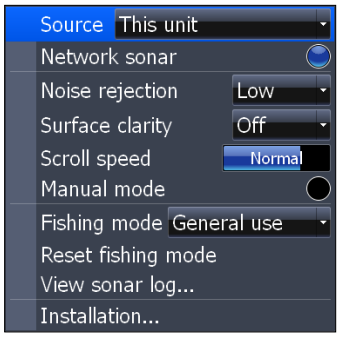
To turn on/off the map data, highlight ***Hide Chart*** on the Chart Settings menu and press **ENTER**.



Hide Chart mode

Sonar Settings Menu

The Sonar Settings Menu is used to modify Sonar options and display settings like Sonar Source, Noise Rejection and Fishing Mode.



Sonar Settings Menu

To access the Sonar Settings:

1. Press **MENU** twice.
2. Select ***Sonar*** and press **ENTER**.

Sonar Source

Selects the display unit that will be used for sonar data. Sonar Source allows you to view selected transducer data on every display unit on the ethernet network; even non-sonar units, like the GlobalMap. If you had an ethernet network and two transducers — one at the bow and one in the back of the boat — you could view sonar data from either transducer at the helm via the Sonar Source feature.

To select a Sonar Source:

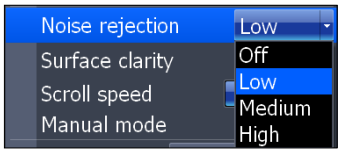
1. Highlight ***Sonar Source*** from the Sonar Settings menu and press **ENTER**. The Sonar Source menu will appear.
2. Use the keypad to select the desired option and press **ENTER**.

Network Sonar

Allows your unit to send/receive data from another sonar unit on an ethernet network. To turn on/off network sonar, highlight ***Network sonar*** on the Sonar Settings menu and press **ENTER**.

Noise Rejection

Sonar signal interference from Bilge pumps, engine vibration, air bubbles, etc., can clutter your unit's display. Noise Rejection counteracts sonar signal interference by reducing onscreen clutter.

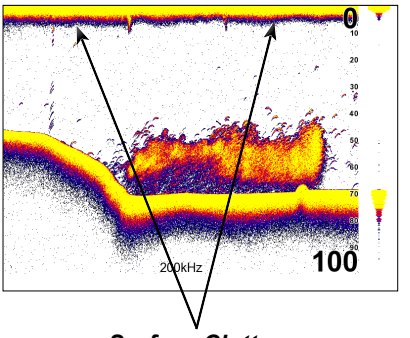


To adjust Noise Rejection:

1. Highlight ***Noise Rejection*** on the Sonar Settings menu and press **ENTER**.
2. Use the keypad to select the desired option and press **ENTER**.

Surface Clarity

Wave action, boat wakes and temperature inversion are some of the sources that can cause onscreen clutter near the surface. Surface Clarity reduces surface clutter by decreasing the sensitivity of the receiver near the surface.

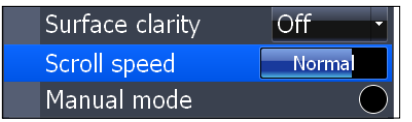


Surface Clutter

To adjust Surface Clarity:

1. Select ***Surface Clarity*** from the Sonar Settings menu and press **ENTER**.
2. Use the keypad to choose the desired option.

Scroll Speed



Controls how fast the sonar chart scrolls across the screen. A slower scroll speed is best suited for ice fishing or fishing while at anchor. It is also useful when you want to record a higher quality sonar log in deep water. By default, Scroll Speed is set to normal.

To make adjustments, select ***Scroll Speed*** from the Sonar Settings menu and use the keypad to make adjustments.

Manual Mode

Advanced user mode that bypasses digital depth to give you greater control of ping settings. Digital depth causes the unit to search for the bottom regardless of the portion of the water column you are targeting. While you still will get good results using digital depth, it prevents you from getting optimum performance in certain situations, like fishing for suspended targets.

In Manual Mode the unit sends sonar signals (pings) only to the depth range you select. Adjustments made to the range setting will be reflected in your unit's ping speed. That makes it easy to get the best scrolling speed and the best screen resolution for a selected range.

Select Manual Mode from the Sonar Settings menu and press **ENTER** to turn on/off Manual Mode.

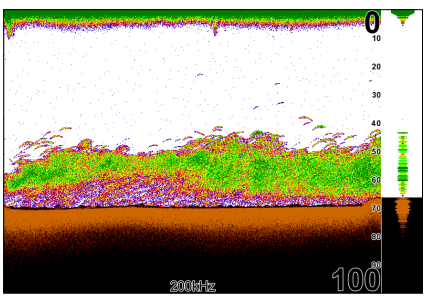
Fishing Modes

Enhances the performance of your unit by providing preset packages of sonar settings geared to specific fishing conditions.

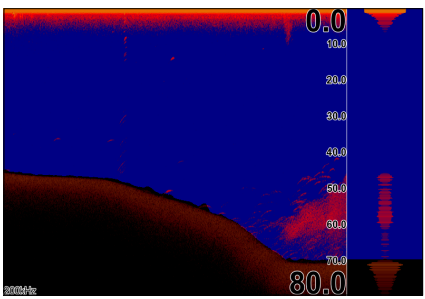
Settings optimized for fishing modes include: Color Palette, Sensitivity, Interference Rejection, Surface Clarity and Ping Speed, among others. Fishing modes allow you to spend more time fishing and less time adjusting settings.

Fishing Mode Options	
General Use	Bottom brown/blue background; 50% ping speed
Shallow Water	Bottom brown/white background; best suited for depths less than 100 feet
Fresh Water	Bottom brown/white background; 50% ping speed
Deep Water	Deep Blue; 50% ping speed; 50kHz is primary transducer frequency
Slow Trolling	Bottom brown/white background; 50% ping speed
Fast Trolling	Bottom brown/white background; slightly lower chart speed
Clear Water	Bottom brown/white background; 50% ping speed
Brackish Water	Bottom brown/blue background; higher ASP; slightly lower chart speed

NOTE: *Use Shallow Water Fishing mode when fishing in less than 100 feet of water.*



Shallow Water Fishing Mode



Brackish Water Fishing Mode

To select a Fishing Mode:

1. Select ***Fishing Mode*** from the Sonar Settings menu and press **ENTER**.
2. Use the keypad to select the desired mode and press **ENTER**.

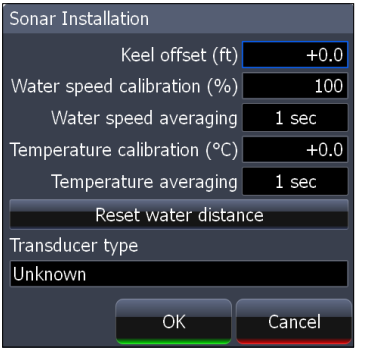
Reset Fishing Mode

Switches Fishing Mode to the default General Use setting. Select ***Reset Fishing Mode*** from the Sonar Settings menu and press **ENTER**.

Installation Menu

Controls unit settings like Keel Offset, Water Speed Calibration and Transducer Type only for components (paddlewheel, temp sensor, transducer) connected to this display unit through the blue sonar connector. You can not adjust settings of network components through the Installation menu.

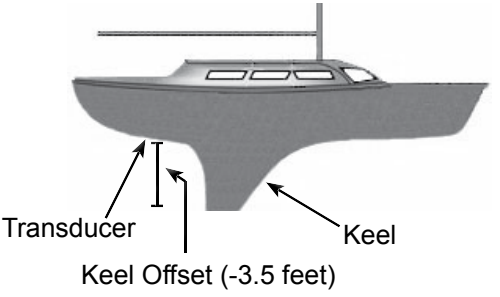
To access the Installation menu, highlight ***Installation*** on the Sonar Settings menu and press **ENTER**.



Sonar Installation menu

Keel Offset

All transducers measure water depth from the transducer to the bottom. As a result, water depth readings do not account for the distance from the transducer to the keel or from the transducer to the water surface. You can use Keel Offset to factor those distances into the unit's depth calculations.



Accounting for the distance from the transducer to the keel will prevent you from striking underwater objects or running aground, which could damage the keel. Offsetting the distance from the transducer to the water surface will give you a more

precise depth reading.

Before setting keel offset, measure the distance from the transducer to the lowest part of the keel. If, for example, the keel is 3.5 feet below the transducer, it will be input as –3.5 feet.

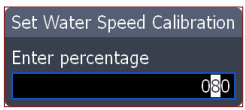
NOTE: *To input a keel offset that accounts for the distance from the transducer to the water surface, you will enter a positive number. If the transducer is 1.5 feet below the waterline, it will be input as +1.5 feet. That will give you a more precise depth reading.*

To set Keel Offset:

1. Highlight the ***Keel Offset*** text box on the Installation menu and press **ENTER**.
2. Use the keypad to enter the desired keel offset. Select ***OK*** and press **ENTER**.

Water Speed Calibration

When there are differences in speed data, Water Speed Calibration calibrates data from a paddlewheel with GPS data. That ensures the accuracy of speed data from your paddlewheel.



Water speed calibration dialog box

To calibrate Water Speed:

1. Select the ***Water Speed Calibration*** text box from the Installation menu and press **ENTER**.
   The Water Speed Calibration keypad will appear.
2. Use the arrow keys to enter the percentage difference in speed data. Select ***OK*** and press **ENTER**.

NOTE: *If the paddlewheel is reading a slower speed than the GPS unit, you will input a positive (+) percentage. Conversely, a negative (–) percentage will be entered if the paddlewheel is reading a faster speed than the GPS unit.*

Water Speed Averaging

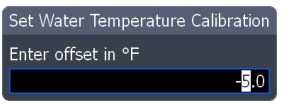
Averages water speed by measuring your speed at a selected interval. Water speed intervals range from one to 30 seconds. If you select five seconds, your water speed will be recorded every five seconds, then averaged.

To select a Water Averaging interval :

1. Highlight the ***Water Speed Averaging*** box on the Installation menu.
2. Press the keypad left/right to select the desired interval.
3. Highlight ***OK*** and press **ENTER**.

Temperature Calibration

When there are differences in temperature data, Temperature Calibration calibrates data from one temperature sensor with date from another temperature source. That ensures the accuracy of temperature data from the selected temperature sensor.



Water Temp calibration dialog box

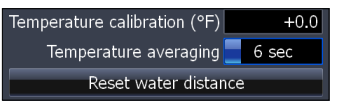
To calibrate Temperature:

1. Select the ***Temperature Calibration*** text box from the Installation menu and press **ENTER**. The Water Temperature Calibration dialog box will appear.
2. Use the arrow keys to enter the percentage difference between temperature sources. Select ***OK*** and press **ENTER**.

NOTE: *If the temperature sensor is reading a lower temperature than the other temperature source, you will input a positive (+) percentage. Conversely, a negative (–) percentage will be entered if the temperature sensor is reading a higher temperature than the other temperature source.*

Temperature Averaging

Averages temperature by measuring temperature data at a selected interval. Temperature intervals range from one to 30 seconds.



If you select five seconds, your temperature will be averaged using measurements taken every five seconds.

To select a Temperature Averaging interval:

1. Highlight the ***Temperature Averaging*** box on the Installation menu.
2. Press the keypad left/right to select the desired interval and press **ENTER**.

Reset Water Distance

If you connect a paddlewheel speed sensor to your unit, you can track the distance you travel on the water. Reset Water Distance, resets water distance to zero.

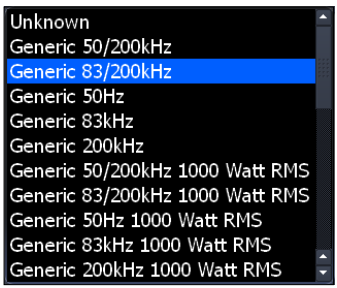
To reset water distance, highlight ***Reset Water Distance*** and press **ENTER**.

Transducer Type

Selects the transducer model connected to your display unit. In some transducers with built-in temperature sensors, the temperature may not be accurate if the correct transducer is not selected from the Transducer Type menu.

To select a Transducer Type:

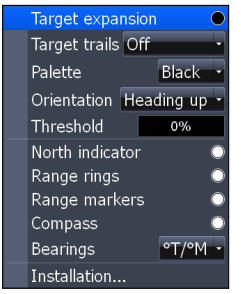
1. Highlight ***Transducer Type box*** on the Installation menu and press **ENTER**. The Select Transducer menu will appear.
2. Use the keypad to your transducer type and press **ENTER**.
3. Highlight ***OK*** and press **ENTER**.



Transducer type menu

Radar Settings Menu

Controls Radar options and display settings like Target Expansion, Orientation and Bearings.



Radar Settings Menu

To access the Radar settings menu:

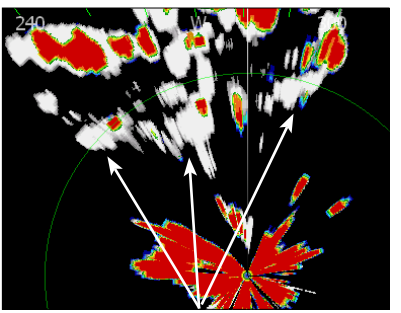
1. Press **MENU** twice.
2. Select ***Radar*** and press **ENTER**.

Target Expansion

Increases the size of radar targets, making them easier to see on the radar display. To turn on/off Target Expansion, highlight ***Target Expansion*** and press **ENTER**.

Target Trails

Creates an onscreen history of the movement of radar targets, making it easier to monitor the direction and position of targets in relation to your vessel.



Target Trails

To set Target Trails:

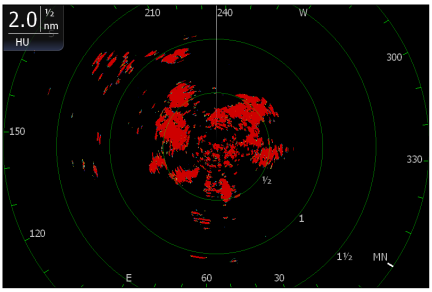
1. Highlight ***Target Trails*** on the Radar Settings menu and press **ENTER**.
2. Use the arrows to select an interval and press **ENTER**.

Palette

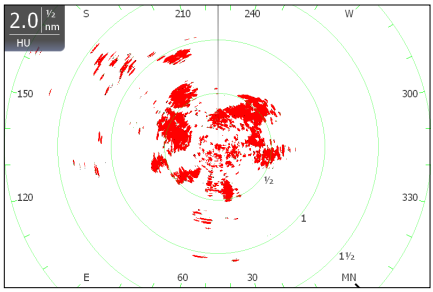
Radar echoes can be displayed in black, white, green or yellow. The Palette feature allows you to select the color that suits your viewing preferences.

To change the Palette:

1. Highlight ***Palette*** on the Radar Settings menu and press **ENTER**.
2. Use the keypad to select the desired color palette and press **ENTER.**



Black Color Palette



White Color Palette

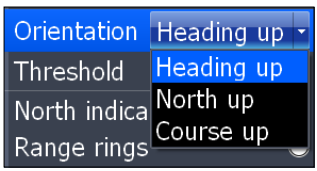
Orientation

Controls the way the map moves in relation to the movement of your vessel. That allows you to select a desired method for viewing your surroundings on the radar display.

- **Course Up** — map stays at same orientation as the initial bearing to the selected waypoint.
- **Heading Up** — unit keeps your heading at the top of the screen, regardless of the direction you are traveling.
- **North Up** — North is always shown at the top of the screen.

To change Map Orientation:

1. Highlight ***Map Orientation*** on the Radar Settings menu and press **ENTER**.
2. Use the keypad to select the desired option and press **ENTER.**



Threshold

Controls the level of radar returns. That allows you to unclutter the display by removing unwanted signals. The zero percent setting allows all To make adjustments, select ***Threshold*** and press the keypad left/right.

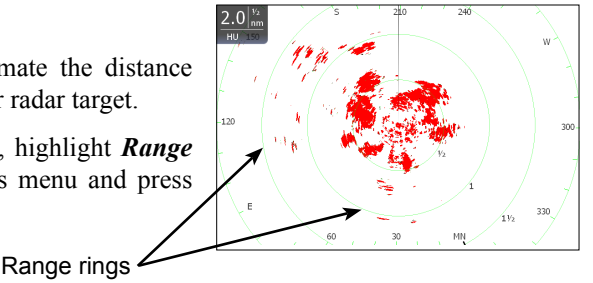
North Indicator

The North indicator is shown on the outer circle of the radar display. To turn on/off North Indicator, select ***North Indicator*** from the Radar Settings menu and press **ENTER**.

Range Rings

Allows you to quickly estimate the distance from your vessel to a another radar target.

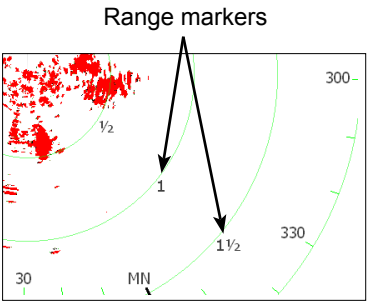
To turn on/off Range Rings, highlight ***Range Rings*** on the Radar Settings menu and press **ENTER**.



Range Markers

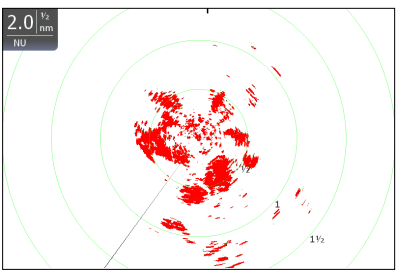
Located below each Range Ring, Range Markers display the distance from your position to each range ring.

To turn on/off Range Markers, select ***Range Markers*** from the Radar Settings menu and press **ENTER**.

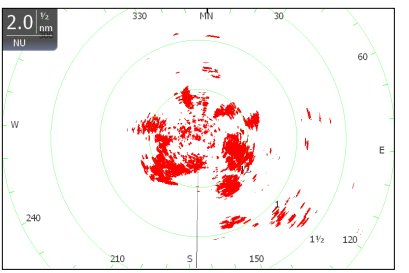


Compass

A Compass overlay can be displayed on the background of the radar page. To turn on/off the Compass overlay, select ***Compass*** and press **ENTER**.



Compass Overlay turned off



Compass Overlay turned on

Bearings

Bearings allows you to choose if you want the direction you are headed to show as True Magnetic (TM) or Relative (R). T/M or True/Magnetic will show your direction based on magnetic north. R or Relative will show your direction based on your relative heading.

To set T/M or R:

1. Press **MENU** twice.
2. Select ***Radar*** and press **ENTER.**
3. Highlight ***Bearings*** and press **ENTER.**
4. Use the arrows to select a bearing and press **ENTER**.

Installation

Provides access to the Radar Installation menu.

Radar Installation menu

To access Radar Installation menu:

1. Press the **MENU** key twice.
2. Highlight ***Radar*** and press ENTER.
3. Select ***Installation*** and press **ENTER**.

Installation Adjustment Menu

The installation adjustment menu is used to make adjustments to bearing alignment, range offset, antenna height and open array park angle.

When the installation adjustment menu is accessed, press the keypad up/down to select a feature. Press the keypad left/right to make adjustments to a selected feature.

Adjustment Menu

Press **EXIT** to return to the Radar Installation menu. To remove the Radar Installation menu from the screen, select ***Close*** and press **ENTER**.

Bearing alignment

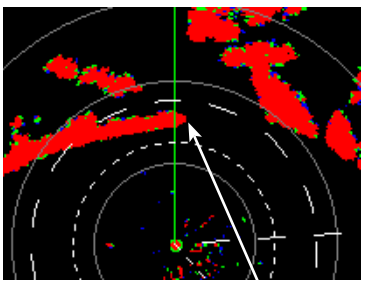
Used to align the bow of your vessel with the heading line (zero point). Bearing alignment is also referred to as zero bearing.

To make adjustments to bearing alignment, switch the radar state to Transmit and set radar orientation to Heading Up.

To select Heading up orientation:

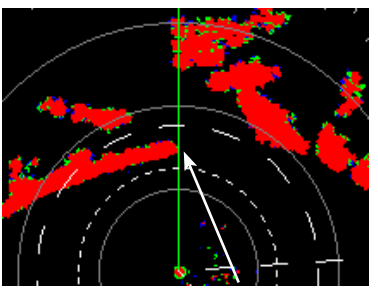
1. From the Radar Page, press **MENU**.
2. Select ***Orientation*** and press **ENTER**.
3. Use the keypad to select ***Heading Up*** and press **ENTER**.
4. Press **EXIT**.

Before Bearing Alignment



Bow of ship is lined up with the tip of a peninsula; the bearing line is not.

After Bearing Alignment



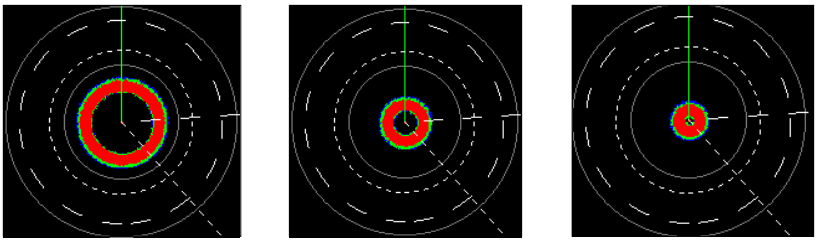
Bearing line aligned with peninsula, matching the alignment of the bow.

To Adjust Bearing Alignment:

1. Line up the bow of your vessel with a stationary target (lighthouse, pier, etc) at least 1 nm away
2. Select ***Adjust Bearing Alignment*** from the Radar Installation menu and press **ENTER**. The Installation Adjustment menu will appear.
3. Press the keypad left/right to rotate the radar image so the reference target is at 0° or 12 o'clock from the radar center.

Range offset

Eliminates the time lag between real radar returns and the time it takes data to be processed by the radar software. Range Offset is also referred to as zero range and trigger delay.



Range Offset Sequence. The circle shrinks as range is increased.

To Adjust Range Offset:

1. Use the **ZOOM IN**/ **ZOOM OUT** keys to set range to 1/8 nm.
2. Highlight ***Adjust range offset*** from the Radar Installation menu and press **ENTER**. The installation adjustment menu will appear.

3. Press the keypad to the left set range offset to 0. Press **ENTER**.
4. If there is a blank, black circle around the center or a solid circle of color at the center, increase the range offset until the circle disappears or almost disappears.
5. If you increase th range offset too far, decrease it until the circle appears again.

Antenna Height

Antenna height is the distance from the waterline to the Antenna (scanner). It is important to correctly input antenna height to prevent problems with the Sea Clutter feature.

To Adjust Antenna Height:

1. Select ***Adjust Antenna Height*** from the Installation menu and press **ENTER**.
2. Press the keypad left/right to input the distance from the antenna to the water surface. Press **EXIT**.

Open Array Park Angle

When an open array antenna is turned off, the antenna's momentum will cause it to continue rotating before coming to a stop. Open array park angle allows you to adjust the antenna's parking angle so it will stop in a desired position.

To Adjust Open Array Park Angle:

1. Select ***Adjust Bearing Alignment*** from the Radar Installation menu and press **ENTER**. The Installation Adjustment menu will appear.
2. Press the keypad left/right to enter a value that will cause the antenna to stop in the desired position.

Tune

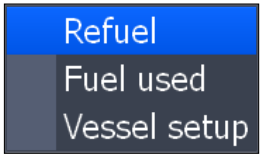
You should not have to adjust Tune for the life of this unit. This feature is intended for use by only trained technicians.

Reset Radar to Factory Defaults

Resets radar to factory default settings.

Fuel

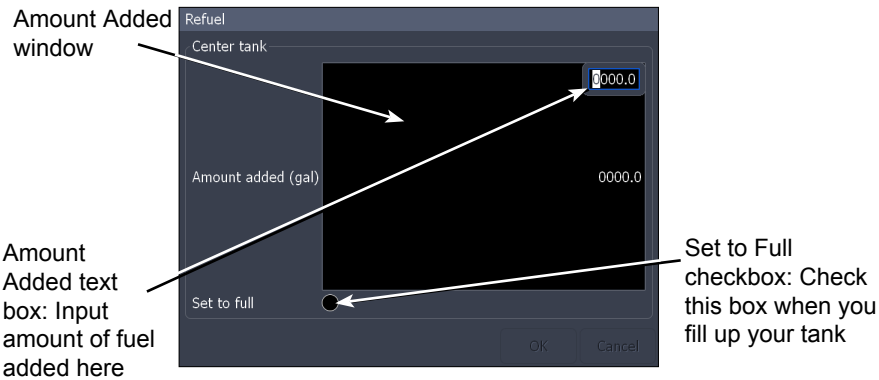
Used to input fuel data like engine/tank configuration, fuel tank capacity and engine calibration. Your unit uses that data to calculate the overall fuel performance of your vessel. To access the Fuel menu, select ***Fuel*** from the Settings menu and press **ENTER**.



Fuel menu

Refuel

Controls engine calibration and is used to input the amount of fuel added to the tank(s). Engines must be calibrated with your fuel tanks to get correct readings on fuel economy, fuel used, etc.



Refuel menu

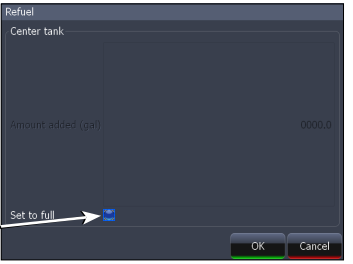
It is important to enter the amount of fuel added to your tank(s) each time fuel is added. That ensures the correct fuel data is used in the unit's fuel performance calculations.

To input fuel added:

1. Select ***Refuel*** from the Fuel menu and press **ENTER**.
2. Use keypad to select the Amount Added window and press enter. The ***Amount Added text box*** will appear.
3. Use the keypad to input the amount of fuel added and press **ENTER**.

To set tank to full:

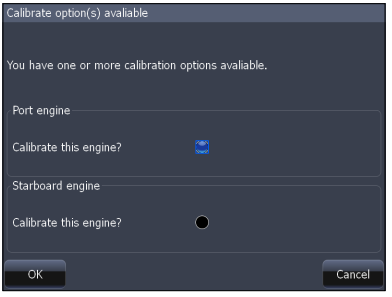
1. Highlight the ***Set to full checkbox*** on the Refuel screen and press **ENTER**.
2. Highlight ***OK*** and press **ENTER**. The calibration options screen will appear. You are ready to calibrate.



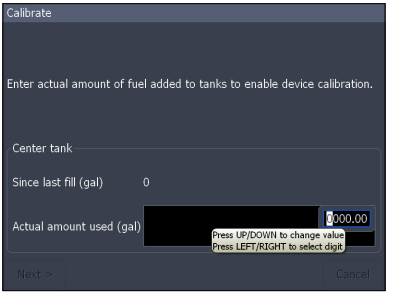
Tank set to full

To calibrate engine(s):

1. With the calibration options screen displayed, select the checkbox next to the engine you would like to calibrate .
2. Highlight ***OK*** and press **ENTER**. The Calibration screen will appear.



Calibration options screen



Calibration screen

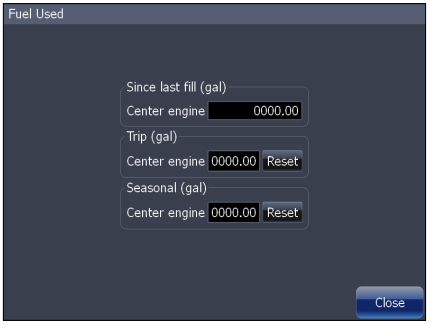
3. Use the keypad to highlight the Actual amount used window and press **ENTER**.
4. Input the amount of fuel used in the Actual amount used dialog box and press **ENTER**.
5. Highlight the ***Next*** button and press **ENTER**. The Confirm calibration screen will appear.
6. After confirming calibration data, highlight ***OK*** and press **ENTER**.

Fuel Used

Data information screen that displays fuel consumption data including fuel used since last fill up, fuel used on the current trip and fuel used during a season.

To access fuel used information, select ***Fuel Used*** from the Fuel menu and press **ENTER**.

Highlight the ***Reset*** button and press **ENTER** to set corresponding fuel data values (trip and seasonal) to zero.

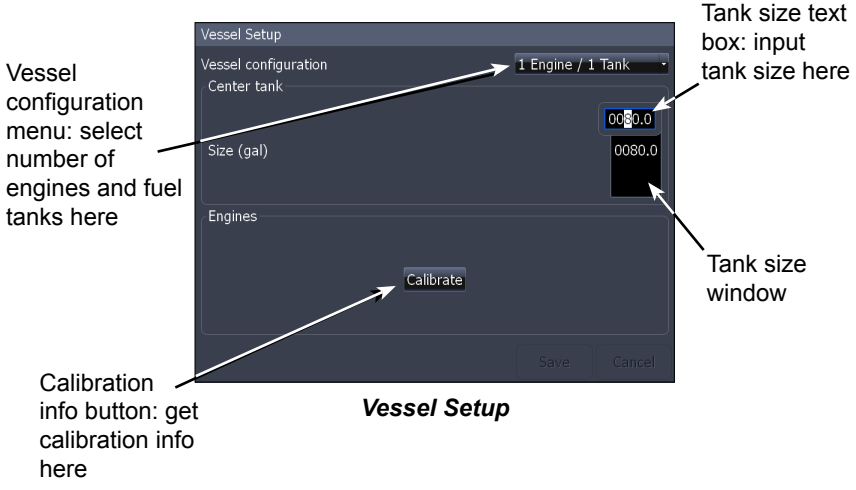


Fuel used screen

Vessel Setup

Controls vessel configuration, which includes selecting the number of engines/ fuel tanks and inputting the capacity of each fuel tank. Vessel Setup data must be configured before you can calibrate your engine(s).

To access the Vessel Setup menu, highlight ***Vessel Setup*** on the Fuel menu and press **ENTER**.

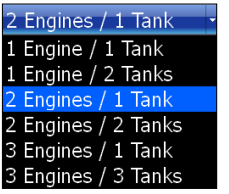


Vessel Setup

Engine/Tank Configuration

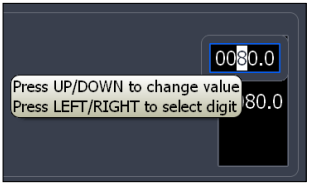
Used to input the number of engines and fuel tanks on your vessel. Your unit must have that information to be able to calibrate you engine(s).

To select engine-tank configuration:



1. Highlight the vessel configuration drop-down menu and press **ENTER**.
2. Select a engine/tank configuration and press **ENTER**.
3. Highlight the ***Save*** button and press **ENTER**.

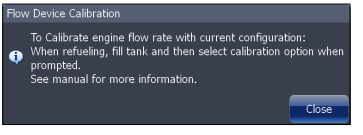
To input tank size:



1. Highlight the ***Tank Size window*** and press **ENTER**. The Tank Size Text box will appear.
2. Use the keypad to input the size of the selected tank and press **ENTER**.
3. Repeat Step 2 for each tank on your vessel.
4. Select the ***Save*** button and press **ENTER**.

Calibrate

Launches engine calibration information window referring you to your fuel sensor's installation manual.



Alarms

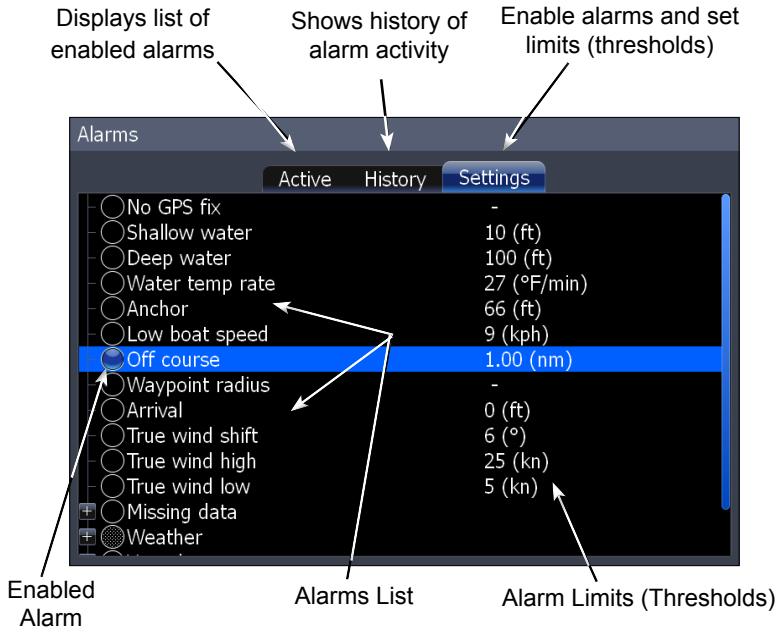
This unit has alarms covering everything from depth and water temp rate to fuel and waypoint radius. The alarms list has three tabs: Active, History and Settings.

- Active — used to view alarms that have been enabled
- History — shows log of alarm activity, which includes data like when alarms were triggered and when they were cleared
- Settings — provides access to Alarms list, allowing you to enable alarms and set alarm limits

NOTE: *Some alarms will not work unless a corresponding sensor is connected to the unit or the network.*

To enable/disable an Alarm:

1. Select ***Alarms*** from the Settings menu and press **ENTER**.
2. Highlight ***Settings*** and press **ENTER**.
3. Select the desired alarm from the alarms list and press **ENTER**.



To silence an alarm:

When an Alarm is triggered, a tone will sound and a alarm window will appear on the screen. Press **ENTER** to silence the alarm and close the alarm window.

After alarm is silenced its corresponding alarm bell will continue to flash in the bottom left corner of the screen. To remove the bell from the screen, disable the alarm and then enable it again. The bell will not reappear unless the alarm is triggered.

Set Limit

Sets thresholds (limits) that will trigger the alarm when met or exceeded. If a threshold can be set for a particular alarm, the Set Limit button will appear at the bottom of the screen when that alarm is highlighted on the alarm list.

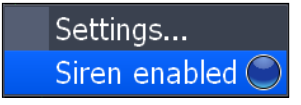
To set alarm limit:

1. Highlight the desired alarm on the alarm screen and press **MENU**.
2. Select ***Set Limit*** and press **ENTER**. The Alarm Limit keypad will appear.
3. Input the desired alarm threshold and press **ENTER**.

Set limit selected on Water Temp Rate menu

Siren Enabled

When the Siren is enabled, a tone will sound when an alarm is triggered. To enable alarm sirens, highlight ***Siren Enabled*** on the Alarms menu and press **ENTER**.



Trails

Controls the way trails are logged (updated). Trails mark your movement as you travel, placing points along your path using one of three logging types: Time, Distance or Auto.

You can save up to 10 trails with up to 9,999 points per trail. If a trail exceeds 9,999 points, each new point will overwrite a point at the beginning of the trail.

Trails Menu

Logging Type

Controls the method used for updating a trail. Trails can be updated using Time, Distance or the default automatic setting.

Logging Types	
Time	A point is placed along the trail after a selected amount of time
Distance	A point is placed along the trail after you travel a selected distance
Auto	A point is placed along the trail every time you change direction

To select a Logging Type:

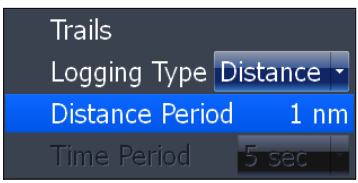
1. Highlight ***Logging Type*** on the Trails menu and press **ENTER**.
2. Use the keypad to select ***Auto***, ***Distance*** or ***Time*** and press **ENTER**.

Distance Period

Controls how far you will travel before a point is placed along the trail.

To set Distance period:

1. Highlight ***Distance Period*** and press **ENTER**. The distance period keypad will appear.
2. Input the desired distance and select ***OK***. Press **ENTER**.



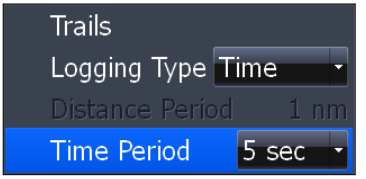
Distance Period set to 1nm

Time Period

Controls how much time will pass before a point is placed along the trail.

To set Time Period:

1. Highlight ***Time Period*** and press **ENTER**. The distance period keypad will appear.
2. Input the desired distance and select ***OK***. Press **ENTER**.



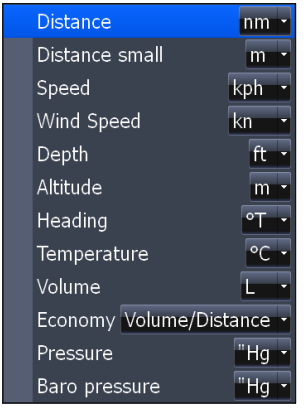
Time Period set to 5 seconds

Units

Controls the unit of measure used for a variety of data, ranging from distance and speed to heading and barometric pressure. To access the Units menu, select ***Units*** from the Settings menu and press **ENTER**.

To change a unit of measure:

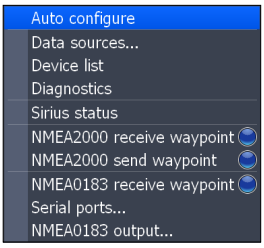
1. Select a unit from the Units menu. Press **ENTER**.
2. Select the a unit of measure and press **ENTER**.



Network

Controls network configuration, data sources, serial port settings, waypoint sharing and allows you to monitor network performance (NMEA 2000 and ethernet) and network devices.

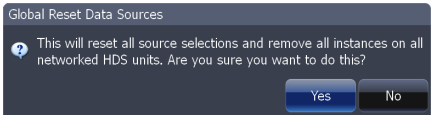
To access the Network menu, select ***Network*** from the Settings menu and press **ENTER**.



Network menu

Auto Configure

Resets all Data Sources to default settings and removes all instances on networked HDS units.



To auto configure a network:

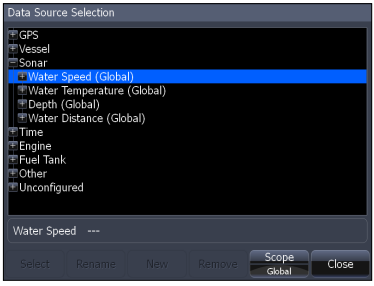
1. Select ***Auto Configure*** from the Network menu and press **ENTER**.
2. Highlight ***Yes*** and press **ENTER**.

Data Sources

An advanced feature that allows you to use data from a network data source or data from a sensor connected to your unit.

If, for example, you do not want to use your unit's internal GPS antenna, you could use an external GPS antenna connected to an ethernet or NMEA 2000 network.

To access the Data Source Selection Screen, highlight ***Data Sources*** on the Network menu and press **ENTER**.



Data Source Selection Screen

To select a data source:

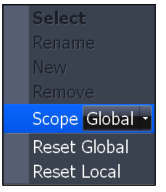
1. Select a data category and press the keypad to the right. A subcategory list will appear.
2. Select a subcategory and press the keypad to the right. A list of sources will be displayed.
3. Highlight a desired data source and press **ENTER**.

Data Source menu

Allows you to change the name and scope of a source and add/remove sources from a NMEA 2000 or ethernet network. To access a Data Source menu, highlight a desired source and press **MENU**.

Rename

Used to rename a Data Source. That makes it easier to recognize one data source from another when they are the same type of source.



Data Source menu

To Rename a data source:

1. Select ***Rename*** from the desired data source menu and press **ENTER**. A keyboard will appear.
2. Input the desired name and select ***OK*** and press **ENTER**.

New

Allows you to create a new instance of a data source.

To create new data source instance:

1. Select ***New*** from the desired source menu and press **ENTER**. A keyboard will appear.
2. Input the name of the new instance, select ***OK*** and press **ENTER**.

Remove

Removes an instance from the Data Source Selection list.

To remove an instance, select ***Remove*** from the desired data source menu and press **ENTER**. The data source is removed from the Data Source Select list.

Scope

Controls the way data source settings are shared/not shared on an ethernet network. Scope lets you select a mode that allows data source settings to be shared by HDS units on an ethernet network (Global).
You can also select a mode that allows each HDS unit to have individual data source settings (Local).

Scope Settings	
Global	**Local**
Data source settings will apply to all HDS units on an ethernet network.	Data source setting will apply only to the unit with the local setting.

To select a scope:

1. Highlight ***Scope*** on the selected device's data source menu and press **ENTER**.
2. Use the keypad to select ***Global*** or ***Local*** and press **ENTER**.

Reset Global and Reset Local

Selecting Reset Global will reset all the source selections to default settings and removes all instances on all networked HDS units.

Reset Local is used to change all source selections on your HDS unit from Local to Global.

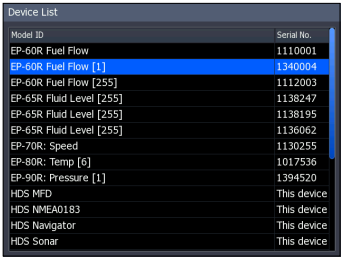
To reset global or local sources:

1. Highlight Resset Global or Reset Local and press enter. A confirmation message will appear.
2. Select Yes and press enter.

Device List

Displays a list of devices connected to a NMEA 2000 network.

From the Device List you can:



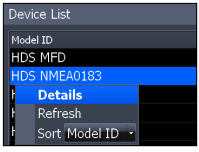
Device List

- View device data
- Change the device instance
- Configure device alarms
- Configure devices
- Calibrate devices
- Enable/disable WAAS/EGNOS/MSAS for GPS antenna by configuring HDS iGPS

To access the device list, Select ***Device List*** from the Network menu and press **ENTER**.

Device Menu

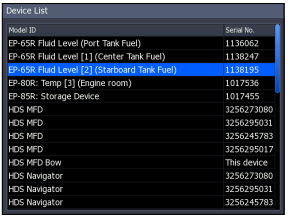
Controls the way data is displayed on the Device list. To access the Device menu, highlight the desired device and press **MENU**.



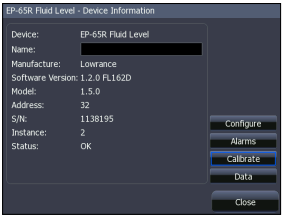
Device Menu Options	
Details	Accesses the Device Information screen
Refresh	Refreshes the device list
Sort	Allows you to sort device list by Model ID or Serial No.

Configuring Devices

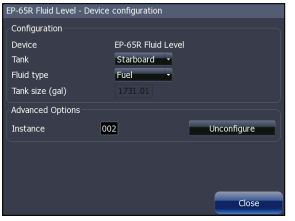
Devices have different configuration options. Name, tank size and location can be configured on some devices; only the name can be configured on others. Some devices like a fuel flow, can be calibrated from the device list.



Device List



Device Information Screen



Device Configuration Screen

To configure a device name or device tank size:

1. Select a device from the device list and press **ENTER**. The Device Information screen will appear.
2. Highlight the ***Configure button*** and press **ENTER**. The Device Configuration screen will appear.
3. Highlight the ***Name*** or ***Tank Size text box*** and press **ENTER**. A keypad will appear.
4. Use keypad to input the desired information. Select ***OK*** and press **ENTER**.

NOTE: *For more information on device configuration refer to the documentation that came with your device.*

To configure device location:

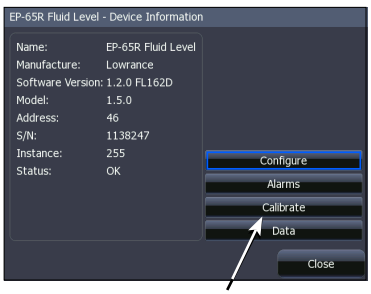
1. Select a device from the device list and press **ENTER**. The Device Information screen will appear.
2. Highlight the ***Configure button*** and press **ENTER**. The Device Configuration screen will appear.
3. Highlight the ***Location*** dropdown menu and press **ENTER**.
4. Select the desired location and press **ENTER**.

Instance

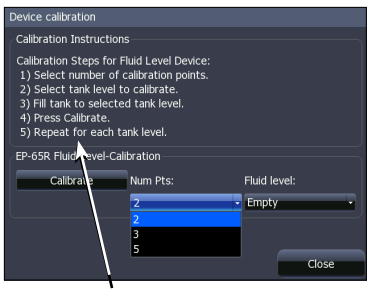
You can change a device instance from the Device Configuration screen. This, however, should only be attempted by a qualified technician.

Calibrating devices

Several devices can be calibrated from the devices list including Fluid Levels, Fuel Flows and Trim Tabs. Every device that can be calibrated from the devices list, will have a calibrate button on the Device Information screen. The calibrate button opens the Device Calibration screen, which has onscreen calibration instructions for the device.



Calibrate button

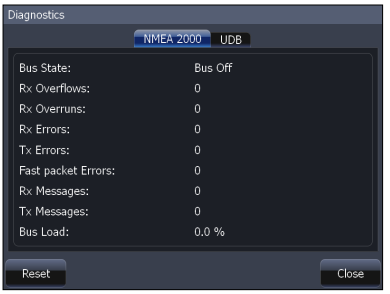


Calibration instructions for a fluid level

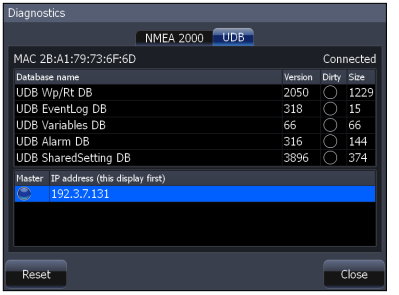
To access calibration instructions:

1. Select the desired device from the device list and press **ENTER**.
2. Highlight the ***Calibrate button*** on the Device Information screen and press **ENTER**. Follow the onscreen calibration instructions.

NOTE: *For more information on device calibration, refer to the documentation that came with your device.*



Diagnostics screen: NMEA 2000



Diagnostics screen: UDB

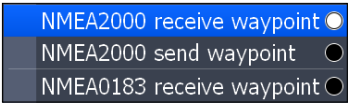
Diagnostics

Displays diagnostic information on NMEA 2000 networks displays the status of information shared between units (UDB). From the UDB tab, you also can select a unit to be used as the master (primary) unit when sharing information.

To access the Diagnostics screen, select ***Diagnostics*** from the Network menu and press **ENTER**.

NMEA 2000 receive/send waypoint

Turns on/off the unit's ability to send and receive waypoints across a NMEA 2000 network. NMEA 0183 receive waypoint ***c***ontrols the unit's ability to receive waypoints over a NMEA 0183 network.



NMEA 2000 receive waypoint turned on

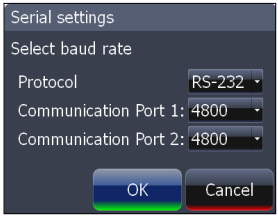
To turn on/off NMEA send/receive waypoint commands, highlight the desired NMEA send/receive option and press **ENTER**.

Serial Ports

Configures communication ports to send or receive data with another electronic device, like an autopilot.

To configure serial ports:

1. Highlight ***Serial Ports*** on the Network menu and press **ENTER**. The Serial Settings menu will appear.
2. Select the desired setting (Protocol, Communication Port 1 or Communication Port 2) and press **ENTER**.
3. Use the keypad to select the desired option and press **ENTER**.
4. Highlight ***OK*** and press **ENTER**.



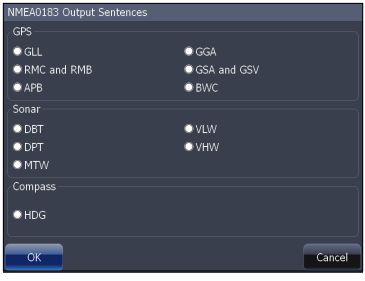
Serial settings menu

NMEA 0183 Output

Controls NMEA 0183 sentences used, allowing you to select the type of messages your unit will transmit when communicating with other NMEA 0183 devices. The default setting will work well under most conditions.

To access NMEA 0183 Output screen:

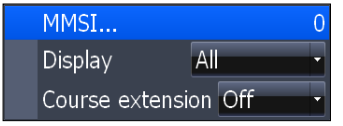
1. Select ***NMEA 0183 Output*** from the Network menu and press **ENTER**.
2. Highlight a desired sentence and press **ENTER** to turn it on/off.
3. To finalize changes, select ***OK*** and press **ENTER**.



NMEA 0183 Output screen

Vessels

Controls settings used to monitor vessels in your area with an AIS receiver. The Vessels feature makes it easier to navigate safely through high traffic areas.



Vessels Menu

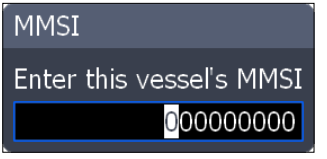
To access the Vessels menu, select ***Vessels*** from the Settings menu and press **ENTER**.

MMSI (Maritime Mobile Service Identity)

Used to input your MMSI number into the unit.

To input MMSI number:

1. Highlight ***MMSI*** on the Vessels menu and press **ENTER**.
2. Use the keypad to input the MMSI number and press **ENTER.**



Display

Allow you to select what vessels will be shown on the display. That helps you customize the screen so you can view only desired vessels.

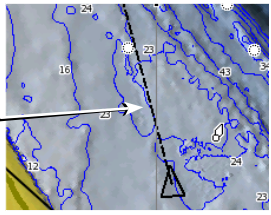
Display options	
All	Displays all vessels in the area around your vessel
None	Eliminates all vessels from the display
Moving	Displays vessels that are in motion
Dangerous	Show only vessels that likely will be coming into close proximity of your vessel; based on CPA (Closest point of approach) and TCPA (Time to closest point of approach)

To select a Display option:

1. Select ***Show*** on the Vessels menu and press **ENTER**.
2. Use the keypad to select the desired display setting and press **ENTER**.

Course Extension

A line extending from each vessel on the chart screen used to estimate where a vessel will be in a selected amount of time, if it maintains its current course.



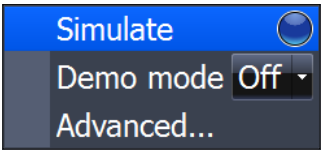
To use Course Extension:

1. Select ***Course Extension*** from the Vessels menu and press **ENTER**.
2. Select the desired duration (1, 2, 10, 30, 60 or 120 minutes) and press **ENTER**.

Simulator

Accesses all simulation types including default demo and simulator modes as well as advanced custom simulations.

To access the Simulator menu, highlight ***Simulator*** on the Settings menu and press **ENTER**.



Simulator menu

Simulate

Turns on/off your unit's simulator. Simulate must be turned on to view a simulation, whether you are using the default mode or a custom simulation.

To turn on the simulator, select ***Simulate*** from the Simulator menu and press **ENTER**.

Demo Mode

Rotates simulations from each of the unit's operation modes with screens detailing some of the unit's most popular features.

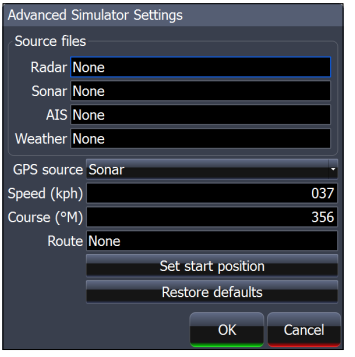
To choose a Demo Mode:

1. Highlight ***Demo Mode*** from the Simulator menu and press **ENTER**.
2. Use the keypad to select the desired mode and press **ENTER**.

Advanced

Allows you to set up a customized simulation using sonar, GPS, radar and weather data files (where applicable).

To access the Advanced menu, select ***Advanced*** from the Simulator menu and press **ENTER**.



Advanced Simulator menu

Source Files

Controls source files used in radar, sonar, AIS (Chart) and Weather simulations. Source files allow you to use your own data while running a simulation.

Source File menu

To select a source file:

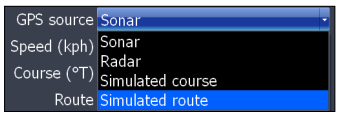
1. Highlight the desired source file option on the Advanced menu and press **ENTER**.
2. Use the keypad to select a source file and press **ENTER**.

GPS Source

Selects the data source that will be used in a GPS simulation. That allows you to use navigation data from sonar, radar, simulated course or simulated routes as GPS data during a simulation.

To select a GPS Source:

1. Select ***GPS Source*** from the Advanced menu and press **ENTER**.
2. Use the keypad to select the desired source and press **ENTER**.



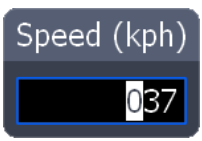
GPS Source menu

Speed and Course

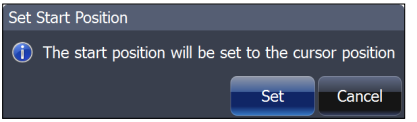
Allows you to select the speed and course to be used during a simulation.

To input Speed and Course

1. Select ***Speed*** or ***Course*** from the Advanced menu and press **ENTER**.
2. Use the keypad to input the desired value and press **ENTER**.



Route



Allows you to select a route to be used during a simulation.

To select a route:

1. Select ***Route*** from the Advanced menu and press **ENTER**. A Route List will appear.
2. Use the keypad to select the desired route and press **ENTER**.

Set Start Position

Sets the starting point of a GPS Simulation to the cursor position.

To set start position:

1. Highlight the ***Set Start Position*** button on the Advanced menu and press **ENTER**.
2. Select the ***Set button*** and press **ENTER**.
3. Highlight ***OK*** and press **ENTER**.

Restore Defaults

Switches Advanced simulator options back to defaults settings. To restore defaults, select ***Restore Defaults*** from the Advanced menu and press **ENTER**.

Specifications

GENERAL

Case Size:
- *HDS-5*: 5.8" H x 7.3" W x 4" D (14.6 x 18.4 x 10.2 cm), 2.30 lbs
- *HDS-7*: 6.4" H x 8.8" W x 3.5" D (16.3 x 22.4 x 8.8 cm), 3.10 lbs

Display:
- *HDS-5*: 5.0" (12.7 cm) diagonal high contrast 16-bit color TFT, 480 x 480 pixel resolution
- *HDS-7*: 6.4" (16.3 cm) diagonal high contrast 16-bit color TFT, 640 x 480 pixel resolution

Backlighting:
- *HDS-5*: Florescent (CCFL) backlit screen, LED keypad backlight
- *HDS-7*: LED backlit screen and keypad

Supply voltage: 10 to 18 volts DC

Supply current:
- *HDS-5*: 0.7A at 13VDC with backlight on, 0.4A with backlight off
- *HDS-7*: 0.8A at 13VDC with backlight on, 0.4A with backlight off

Operating temperature: -15°C to 55°C (5°F to 130°F)

MMC slots: Two with waterproof doors. One reads SD, MMC, and MMC+. One reads SD and MMC.

Audible alarms: Local and networked alarms available for included and optional components, including sonar, GPS/navigation, battery voltage, weather, engine/transmission, tank level, AIS and DSC.

Communications: NMEA 0183 input and output up to 38,400 baud, NMEA 2000, Navico Ethernet

Standards compliance:
- Waterproofing: IPX6 and IPX7 with card door closed
- EMC: IC RSS-310; FCC Part 15 Class B; IEC60945

BROADBAND SOUNDER

Frequency: 50/200 kHz or 83/200 kHz
Power output: 250W Peak to Peak (31W RMS) actual, 30,000W Peak to Peak analog equivalent

Depth capability: 5,000 ft dependent on transducer configuration and installation, bottom composition and water conditions

Built-in sonar recording capacity: 10min to 2hrs internal memory depending on depth range and ping speed

Surface water temperature: Available built into transducer or via external network

Paddlewheel speed log: Available with optional speed sensor

Audible alarms: Shallow, Deep, Temperature change

GPS NAVIGATION

Receiver/antenna:
- Built in 16 parallel channel internal antenna
- External antennas supported via NMEA 0183 and NMEA 2000

Satellite DGPS: WAAS, EGNOS, MSAS supported

Compass Safe Distance: 20cm (8 inches)

Charting: Contains built-in Lowrance or Navionics basemap; Lowrance map and chart range, Navionics Gold, Platinum, and Platinum Plus supported via SD/MMC card

Position updates: Every second with internal antenna

Chart scale: 50ft (20m) to 2,500 nautical miles (3,000 miles)

Built-in GPS recording capacity: 32MB internal memory capacity for up to 5,000 user-definable waypoints, 10 tracks, and 200 routes

Audible alarms: Arrival, off-course, anchor

NOTE: *The above memory capacities refer only the unit's on-board memory. The amount of GPS and sonar data you can record and save for recall later is only limited by the number of MMC cards you have.*

Unit Care

Display

- **Cleaning the Screen —** Warm water and soap will work fine. You can also use ammonia-type cleaners like Windex. Do not use any type of abrasive cleaners. They will remove the Anti-Reflection coating from the glass.

Buttons

- **Inspect the buttons —** Make sure that no buttons are stuck in the down position. If one is stuck, wiggle the button to free it back to the normal position.
- **Debris in the keyboard contacts —** In case there is dirt or other debris covering the contacts inside the keypad, press down on the button in question and wiggle it to try to restore its function.

Connectors

- **Clean the Connections —** Corrosion or oxidation could occur on the power cable connector pins and fuse-holder. This can prevent sufficient power from flowing to the unit. Clean the connections to be sure. Sometimes the substance is clear and not easily seen.

Troubleshooting

If your unit is not working, or if you need technical help, use the following troubleshooting section before contacting the customer service department.

Unit won't turn on

1. Check the power cable's connection at the unit.
2. Make sure the power cable is wired properly. The red wire connects to the positive battery terminal, black to negative or ground.
3. Check the fuse.
4. Measure the battery voltage at the unit's power connector. You will measure the two biggest pins. It should be at least 10 volts. If it isn't, the wiring to the unit is defective, the battery terminals or wiring on the terminals are corroded, or the battery needs charging.

Unit freezes, locks up, or operates erratically

1. Electrical noise from the boat's motor, trolling motor, or an accessory may be interfering with the sonar unit. Rerouting the power and transducer cables away from other electrical wiring on the boat may help. Route the sonar unit's power cable directly to the battery instead of through a fuse block or ignition switch.
2. Inspect the transducer cable for breaks, cuts, or pinched wires.
3. Check the transducer and power connector. Make sure it's securely plugged into the unit.

Weak bottom echo, erratic readings or no fish returns

1. Make sure the transducer is pointing straight down like the following image.
2. If the transducer is mounted inside the hull, be sure it is shooting through only one layer of fiberglass, that it is securely bonded to the hull and DOES NOT have air

bubbles. (See the Installation Section for how to install the transducer.)

3. When attaching a transducer to the inside of a hull, ONLY use epoxy available from LEI (see inside back cover for order information).

4. Do NOT use RTV silicone rubber adhesive or any other type of epoxy. The LEI epoxy is specially formulated so that it will cure properly for shoot-through applications.

5. Clean the face of the transducer. Oil, dirt and fuel can cause a film to form on the transducer, reducing its effectiveness.

6. Electrical noise from the boat's motor or trolling motor can interfere with the sonar. This causes the sonar to automatically increase its discrimination or noise rejection feature. This can cause the unit to eliminate weaker signals such as fish and can display lines across the screen.

7. The water may be deeper than the sonar's ability to find the bottom. If the sonar can't find the bottom signal while it's in the automatic mode, the digital sonar display will flash continuously. It may change the range to limits far greater than the water you are in. If this happens, place the unit in the manual mode, then change the range to a realistic one, (for example, 0-100 feet) and increase the sensitivity. As you move into shallower water, a bottom signal should appear.

8. Check the battery voltage. If the voltage drops, the unit's transmitter power also drops, reducing its ability to find the bottom or targets.

Bottom echo disappears at high speeds, erratic reading or weak bottom echo while boat is moving

1. This is likely due to cavitation (turbulence) in the water surrounding the transducer. You may need to move the transducer lower in the water or to another location. The transducer cannot send or receive signals through air bubbles.

2. Electrical noise from the boat's motor or trolling motor can interfere with the sonar. This causes the sonar to automatically increase its discrimination or noise rejection feature. This can cause the unit to eliminate weaker signals such as fish or even structures from the display. Try using resistor spark plugs or routing the sonar unit's power and

transducer cables away from other electrical wiring on the boat.

3. When trolling over weed beds in 20ft of water or less, you may experience vertical bars, loss of the chart picture, or the digital depth. First, do a soft reset of the unit. Then go to the Full Sonar Chart screen. Press Menu and select Sonar Features. Now turn the Chart Manual Mode to On. This will leave everything in Automatic Mode except depth. Now go back to the main menu and set the depth range for the depth you are in such as 0-20 feet.

4. It can sometimes be difficult for a high-powered unit to capture the lightning-fast return in shallow water. Turn off the automatic sensitivity setting and manually reduce the sensitivity until the unit locks onto the bottom.

5. If two or more sonar units using the same frequency are operating at the same time, one or more of them may lose the depth reading due to the interference. It is like two radio stations trying to both broadcast on 97.3FM. In shallow water, if the transducers are far enough apart, you may be able to operate them together. However, the deeper the water, the wider the beams spread out. When they cross each other, the interference occurs.

No fish arches when Fish I.D. is turned off

1. If you are using a transom-mounted transducer, the angle of the transducer may prevent a fish arch from displaying properly. If the arch slopes up but not down, then the front of the transducer is too high and needs to be lowered. If only the back half of the arch is shown, the nose of the transducer is angled too low and needs to be raised. This is the most common problem if a partial arch is displayed.

2. The sensitivity may not be high enough. For the unit to display a fish arch, it has to be able to receive the fish's echo from the time it enters the cone until it leaves. If the sensitivity is not high enough, the unit shows the fish only when it is in the center of the cone.

3. Use the Zoom feature. It is much easier to display fish arches when zoomed in on a small range of water than a large one. If your boat is in water deeper than 20ft, try setting the upper and lower limits to a 20ft depth section, such as 40ft

to 60ft or whatever depth you expect the fish to appear at. This will maximize the screen resolution to show small objects larger on the screen. It unlikely you will see average-sized fish display as arches in a 100ft deep water column.

4. The boat must be moving at a slow trolling speed to see fish arches. If the boat is motionless, fish stay in the cone and show as horizontal lines on screen. This is especially applicable to ice fishing.

Noise

1. A major cause of sonar problems is electrical noise. This usually appears on the sonar's display as random patterns of dots or lines. In severe cases, it can completely cover the screen with black dots, or cause the unit to operate erratically, or not at all.

2. To eliminate or minimize the effects of electrical noise, try to determine the cause. With the boat at rest in the water, turn all electrical equipment on the boat off including the engine. Turn on your sonar unit. Sensitivity should be set at 70-75 percent. There should be a steady bottom signal on the display. Now turn on each piece of electrical equipment on the boat and view the effect on the sonar's display.

3. If you find noise interference is from an electrical instrument, trolling motor, pump, or radio, you can usually reroute the sonar unit's power cable and transducer cable away from the wiring causing the interference. VHF radio antenna cables radiate noise when transmitting, so be sure to keep the sonar's wires away from it. You may need to route the sonar unit's power cable directly to the battery to isolate it from other wiring on the boat.

4. If no noise displays on the sonar unit from electrical equipment, then make sure everything except the sonar unit is turned off, then start the engine. Increase the RPM with the gearshift in neutral. If noise appears on the display, the problem could be one of three things; spark plugs, alternator, or tachometer wiring. Try using resistor spark plugs, alternator filters, or routing the sonar unit's power cable away from engine wiring to help eliminate noise problems. Make sure to use the in-line fuse supplied with the unit when wiring the power cable to the battery.

5. When no noise appears on the sonar unit after all of the above tests, then the noise source is probably cavitation. Many people make sonar installations which function perfectly in shallow water, or when the boat is at rest. In most cases, the cause of the malfunction is the location and/or angle of the transducer. The face of the transducer must be placed in a location that has a smooth flow of water at all boat speeds. Read your transducer owner's manual or the Installation instructions in this manual for the best mounting position.

GPS Not Accurate

1. Lowrance Electronics obtains its mapping data from government agencies. Mapping is not an exact science. A unit's GPS position (Latitude/Longitude) can be extremely accurate, but the location of a cartographic item such as a street, highway, or point-of-interest may be slightly inaccurate. In most cases, we have found the mapping detail in our products to be very accurate. We encourage the reporting of inaccuracies or omissions so that we can consider them for future revisions. Please consider that our products are designed to be aids to navigation and not the sole means of navigation. A prudent navigator will also have several items necessary for safe navigation.

2. The accuracy of your position could look different at various zoom ranges. For example, at a 5 mile range, the cursor representing your position may appear to be in the center of a highway your are driving on. However, if you zoom into a much closer .1 mile range, the position may appear off-center due to the variables mentioned above.

3. Try this simple method to verify that the GPS receiver in your unit is accurate. Have your unit lock onto GPS position in a known location like your driveway, boat slip, or campsite. Save that location in the unit as a waypoint. Now travel away from the known location. Stop and recall the saved waypoint in the unit. Select GO TO to start the unit navigating back to that location. Observe the Distance To Go data as you travel back to that location. When you arrive at your waypoint, the Distance To Go should be close to 0.

Cards not Read by Unit

1. Before purchasing a pre-loaded mapping card for a unit, go to our Mapping Index at http://www.lowrance.com/Products/Mapping/default.asp Click on the type of card you are interested in and look at the list of units that are compatible with that card.
2. When zooming in to see more detail, be sure the cursor is located within the area covered by the mapping card.
3. In the Chart menu, select Chart Options and then Chart Categories. Make sure all the categories you want to see have a check mark beside them.
4. If the card is not recognized by the unit, make sure the card contacts and corresponding unit pins are clean and free of obstructions. Verify that the card is securely seated in the card port.
5. If it is a card for a MapCreate map or saved GPS data, it may need to be formatted. Do not format pre-loaded cards such as Nautic-Path, Fishing Hot Spots Pro, Lake Master Pro, Freedom Maps, or Navionics. The information will be deleted from the card. Please be aware that Lowrance GPS products will only read cards that are FAT formatted. MMC cards formatted using FAT 32 or NTFS will not work with our products.

Current Position not on the Screen

1. First, make sure the unit is locked onto the satellites and shows a fix on the satellite status screen. Then check for cross-hairs on the screen (or for an automotive unit, a red box with an X). If this is on the screen, it means that you had pressed one of the arrow buttons. If that is the case, the unit thinks that you want to scroll to a location on the screen or zoom in or out to see more detail. Press the EXIT button to clear the crosshairs and your current position will show in the middle of the display.
2. To determine your current position, the GPS receiver must “lock” onto at least 3 GPS satellites. For the best signal reception, an external GPS antenna/receiver should be located where it can receive as many signals as possible. There

should be nothing around or above the antenna. However, GPS antennas can receive signals well through many types of glass and fabric. It is recommended to try various locations before making a permanent installation.

3. If you are using a NMEA 2000 network, both branches of the power cable with red and black wires need to be connected to a 12volt power source. Be sure all cable connections are clean and solid. Check to be sure power is reaching the GPS receiver. Also, check the power to the blue connector network and the red connector network.

Update the Software

Make sure your unit has the latest software version. Go to the Software Update page on Lowrance.com. You can download updates for free.

Reset the Unit

Sometimes resetting your unit can solve unusual issues. Go to Lowrance.com to access a list of reset procedures for Lowrance products. Locate the one that applies to the model you own. Try a Soft Reset first, this will return your settings to factory defaults. If you decide to try a Hard Reset, save any important stored data to an MMC or SD card or write the information down. The data will be deleted during this process.

Radar won't Start Up

If the radar, does not start up, try the following steps:

1. Verify head unit has the latest code that supports radar.
2. Verify that the communication port is set to RADAR
3. Turn the unit, radar and network off, then turn everything back on. On power up the Radar should start initializing. Change over to the Radar Page and see if the unit is initializing or giving the count down indication.

   a. If you are getting a countdown: allow it to complete and then try to power on the Radar. If the Radar does not start rotating then the Radar will need to be sent in for service.
   b. If you are NOT getting a countdown, press MENU, select RADAR INFORMATION and press ENT.

Highlight FORCE STATUS UPDATE and press ENT. Pay attention to the RX/TX buttons.

c. If the TX is not lighting up then either you do not have the com port set to RADAR or the GPS unit is defective. Verify that the Com Port is set properly, if it is then the Lowrance unit will need to be sent in for repair.

d. If the TX is blinking but the RX is not then you are not getting any information from the RIM, the processor or the Radar. There is a fuse inside the processor that has more than likely blown. Remove the front left black screw, then remove the grounding post on the right side of the front of the unit. Gently slide the front cover off, the fuse is located on the left side of the board. This fuse is very tight and difficult to remove, you may need to use a pair of pliers to get a good grip on it and gently try to pull it out. Replace the fuse, the faceplate, and the screws, making sure that the front face is securely seated so not to lessen the water seal.

4. If the communication is hooked up properly and all information fields are properly displayed on the “radar information” page, but the unit starts to warm up but you never see a count down to standby on the screen and then radar communication is lost after one minute. The voltage supply to the Radar Antenna or the gauge wire supplying the voltage may be to small.

Index

Symbols

2D and Shaded Relief 56

A

Add Dashboard 22
Add Source 16
Adjust 66, 90, 91, 92
Alarm 97
Amplitude Scope 35
Antenna Height 91
Auto Gain 62

B

Backlight 7
Bearing alignment 90
Bearings 88
Bezel 16
Bottom Lock 32

C

Caption 16
Center 64
Change Layout 22
Chart categories 56
Chart menu 40
Chart orientation indicator 40
Chart Page 17
Chart Settings Menu 76
Chart Speed 80
Clear Trails 63
Closing Menus 8
Colorline 31
Compass 88, 113
Configuration menu 16
Configure Limits 15
Configuring Devices 104
Coord System 71
Course Up 87
Current position 40
Cursor 7
Cursor coordinates 40
Cursor position window 67

D

Data menu 19
Data Overlay 12
  Edit Mode 13
Data Sources 101
Datum 71
Depth Line 35
Device List 103
Device Menu 103

E

Edit Data menu 20
edit gauge display 20
Edit Overlay menu 12
Edit Waypoint menu 45
Engine/Tank Configuration 95
Entering Data 9
Ethernet 113
  ENET 113

F

Fish depths 36
Fish ID 36
Fish symbols 36
Flasher 32
Frequency 31, 113
Fuel 93
  Fuel Used 94
Fuel Used 94

G

Gauge Size 14
Gauge Type 14
Grid Lines 77

H

Harbor 63
Heading Extension 76
Heading Up 87

I

Info Page
  add Dashboard 22
  add source 21
  change Layout 22
  configure Limits 21
  Finish Editing 22
  remove a source 21
  remove dashboard 23
Installation Menu 82
Interference Rejection 63
Invert Text 16

K

Keel Offset 82
Key Beeps 70
Keypad 7

L

Language 7, 69
Limits 15
Log Sonar Data 36
Log Sonar Menu
  Bytes 36
  Device 36
  Filename 36
  Time Remaining 36
Look Ahead 64

M

Magnetic Variation 71
Manual 63
Manual Conventions 5
Map orientation 41, 55
Map Scale 40
Measuring Distance 54
Menus 8
Moving a Gauge 13

N

Navigation 92
Network 101
NMEA
  NMEA 0183 106, 107, 113
  NMEA 0183 Output 107
  NMEA 2000 101, 103, 106, 113
Noise Rejection 79
North Indicator 87
North Up 87

O

Offset 64
Offshore 63
Open Array Park Angle 92
Orientation 87
  Course Up 87
  Heading Up 87
  North Up 87

P

Pages Screen 11
Palette 34, 86
Ping Speed 33
Placing a Gauge 13
Point of Interest (POI) 40
Popup Information 77
Position 61, 113
  Center 64
  Look Ahead 64
  Offset 64

R

Radar
  Reset to Factory Defaults 92
Radar Adjust menu 62
Radar Installation menu 89
  Antenna Height 91
  Bearing alignment 90
  Open Array Park Angle 92
  Range offset 91

Radar menu 61
Radar new waypoint 66
Radar Overlay 67
Radar Page 18
Radar Settings Menu 86
Radar State 62
Range 31
Range Markers 88
Range offset 91
Range Rings 88
Refuel 93
remove dashboard 23
remove source data 16
Reset Fishing Mode 82
Reset Water Distance 85
Restore Defaults 10
Routes 78
  create 47
  display/hide 50
  edit 50
  edit waypoints 50
  insert waypoints 50
  navigate 50
  remove waypoints 50
  search by name 51
Routes screen 49
Routes screen menu 49

S

Satellites 71
Screen Capture 72
Sea Clutter
  Harbor 63
  Manual 63
  Offshore 63
Search by coordinates 54
Select Data 13
select info page data 21
Selecting Pages 11
Sensitivity 30
Serial Ports 107
Shaded Relief 56
Size 14
Softkeys
  Colorline 31
  Frequency 31
  Radar new waypoint 66
  Radar State 62
  Range 31
  Sensitivity 30
  Split 31
  Stop Sonar 32
  Symbology 65
Sonar Data 36
Sonar History 29
Sonar Menu 30
Sonar Page 17, 29
Sonar palette 34
Sonar Settings Menu 79
Sonar Source 79
Specifications 113
Split 31
Start Logging 37
stop logging 38
Surface Clarity 80
Symbology 65
System 69

T

Target Boost 63
Target Expansion 86
Target Trails 86
Temperature Averaging 84
Temperature Calibration 84
Temperature Graph 35
Text Boxes 9
Text Size 69
Time 70
Trails 51
  Create 52
  Edit trail name 53
Trails screen 51
Trails screen menu 52
Transducer Type 82, 85
Tune 92
Turning on the Unit 7
Type 14

U

Unit Care 114
  Buttons 114
  Connectors 114
  Display 114
Units 100
Upper and Lower Limits 33

V

View 33

W

warning thresholds 15
Water Speed
  Averaging 84
  Calibration 83
Water Speed Calibration 83
Waypoints
  alarm radius 46
  Alarm Radius 46
  color 47
  Color 45
  create 42
  Depth 46
  Editing 45
  icon 47
  information screen 45
  search by name 44
Waypoints screen 43
Waypoints screen menu 44
Weather Overlay 57

Z

Zoom 32
Zoom Bars 35

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