

**LOWRANCE®**



# ***HDS-5x***

Fish Finding Sonar

***Operation manual***

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# Introduction

## About this manual

Thank you for purchasing from Lowrance, the industry leader in marine technology. 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](http://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**.

**Lowrance Customer Service**

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# Lowrance HDS-5x Sonar

**ZOUT:** Zooms out the screen so you can see more of the water column  
**ZIN:** Zooms in the screen, allowing you to get a closer look at desired returns

**KEYPAD:** used to move the cursor, scroll through menus, adjust features and view sonar history

**EXIT:** cancels entries, closes menus & windows;

**MENU:** opens context & settings menus

**FREQ:** changes transducer frequency

**ENTER:** confirms menu selections

**PAGES:** opens Pages menu; hold down the Pages key to switch active panels when viewing combo pages

**LIGHT/POWER:** controls backlight level & turns the unit on/off



# Getting Started

## Turning on the Unit

Press the **POWER/LIGHT** key to turn on the unit. To turn off the unit, press the **POWER/LIGHT** key, select **Power Off** and press **ENTER**.



## Setup wizard

The Setup wizard will appear when unit is turned on for the first time. To choose your own settings, do not run the setup wizard. To restart the Setup wizard, restore defaults.



## 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.

Keypad



## 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 main operation modes: Sonar and Radar. The Settings menu is accessed by pressing **MENU** twice.

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.



**Settings menu**



**Pages screen**



**Sonar 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.

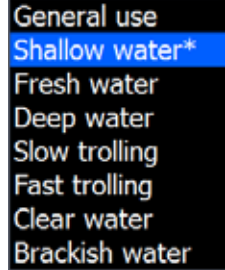


## Selecting a Fishing Mode

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	Depth	Settings	Palette
<b>General Use</b>	≤1,000 ft	50% Ping speed	Bottom brown/ blue background
<b>Shallow Water</b>	≤ 60 ft	75% Ping speed	bottom brown/white background
<b>Fresh Water</b>	≤ 400 ft	50% Ping speed	bottom brown/white background
<b>Deep Water</b>	≥ 1,000 ft	50% Ping speed	Deep Blue
<b>Slow Trolling</b>	≤ 400 ft	50% Ping speed	Bottom brown/white background
<b>Fast Trolling</b>	≤ 400 ft	Lower chart speed	Bottom brown/white background
<b>Clear Water</b>	≤ 400 ft	50% Ping speed	Bottom brown/white background
<b>Ice Fishing</b>	≤ 400 ft	Settings optimized to reduce interference from other sonar units	

## 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***

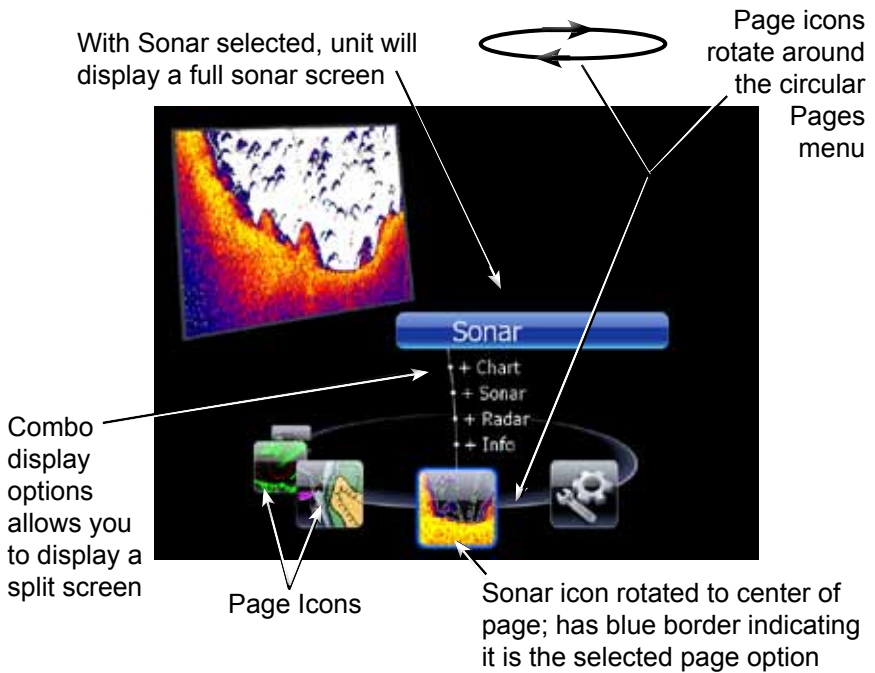
The Restore Defaults command switches the unit back to the settings it had when you purchased it (default).

#### ***To Restore Defaults:***

1. Press **MENU** twice.
2. Select *System* and press **ENTER**.
3. Highlight *Restore Defaults* and press **ENTER**.
4. Select each item you want to restore or delete and press **ENTER**.
5. Select **OK** and press **ENTER**.



# Pages



## Pages Screen

Consists of 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**.



**NOTE:** Hold down the **PAGES** key to switch active panels when viewing combo pages.

## 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

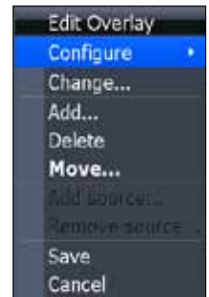
Every page option has its own Data Overlay menu. The menu allows you to edit, add or remove overlay data from the display. To access Data Overlay menu, select a page option and press **MENU**.

### Edit Overlay menu

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

#### To access Edit Overlay menu:

1. Select *Edit data overlay* from the Data overlay menu and press **ENTER**.
2. Press **MENU**. The Edit overlay menu will appear.



### 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.

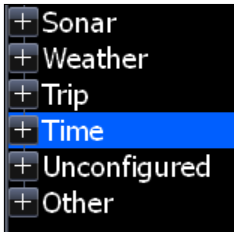
### To move/place a gauge:

1. Press the **ENTER** key when the gauge is in edit mode. Four directional arrows will appear.
2. Use the keypad to move the gauge into the desired location.
3. Press **ENTER** to place the gauge.

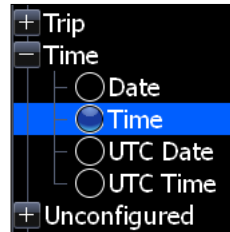


## Select Data

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



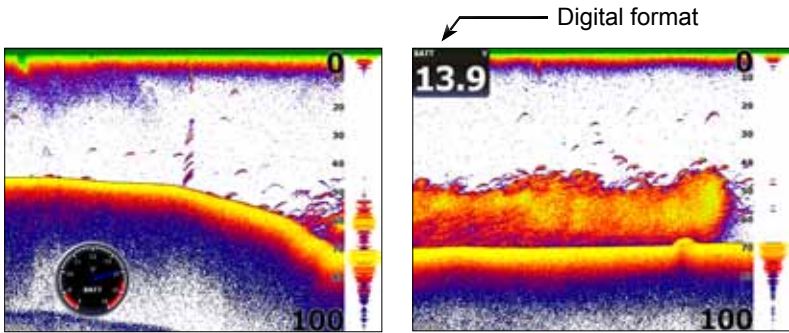
Time subcategory

## Type

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

### To change the gauge type:

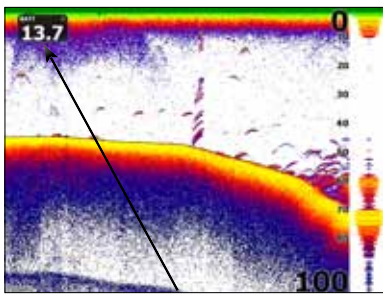
1. With the gauge in edit mode, press **MENU**.
2. Select *Configure* and press **ENTER**.
3. Select *Type* and press **ENTER**.



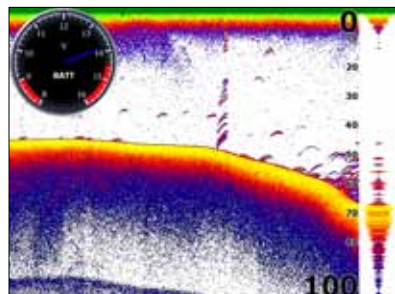
**Size** ↑ Analog format

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. Warning thresholds are entered in the Low and High text boxes.

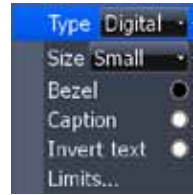


**Configuration Limits menu**

## 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.

#### To add a source:

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



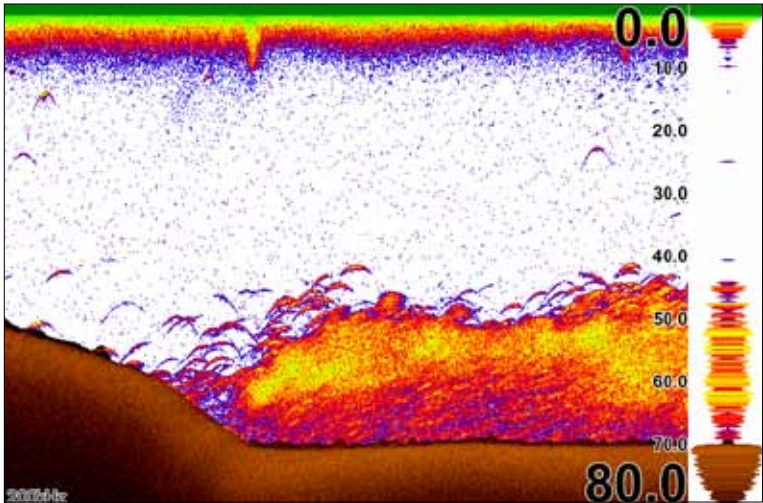
Add Source menu

#### To remove add source data:

1. Highlight **Remove source** on the Edit overlay menu and press **ENTER**.
2. Select the source you want to remove and press **ENTER**.



Showing RPM from two engines.



## **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 supports multiple splitscreen views 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

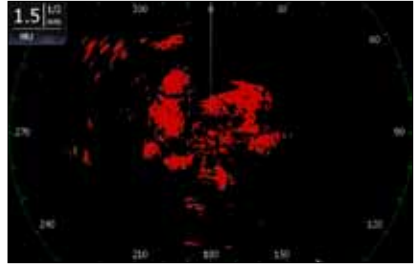
To access the Sonar Page, use the keypad to highlight **Sonar** on the Pages menu and press **ENTER**.



## Radar Page (optional)

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**.

## Info menu

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



## Dashboards

Layout templates that are customized with selected data and saved for on-the-water viewing. You can customize a different layout template for each dashboard or add custom data to the same layout template and save it as a different dashboard each time.



**Vessel layout**



**Navigation Layout**



**Angler Layout**



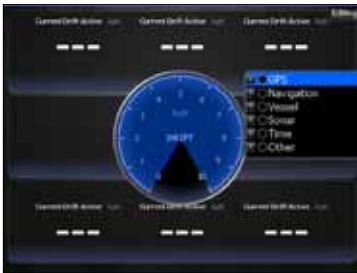
**NOTE:** You can toggle through the dashboard templates on the screen by pressing the keypad left/right.

## Edit

Used to select information displayed on the Info page. To switch the screen to Edit Mode, select **Edit** from the Info 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 Info 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 Info menu will appear.
5. Select *Save* and press **ENTER**.



*Editing data on an analog gauge*

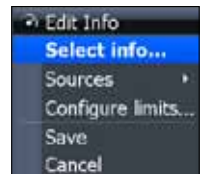


*Editing data on a digital gauge*

### Edit Info 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 Info menu, switch the screen to Edit mode and press **MENU**.



### To select info:

1. Highlight *Select Info* from the Edit Info menu and press **ENTER**. The Select Info 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 Info 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 Info 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 Info 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.*

## 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 Info 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 Info 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.

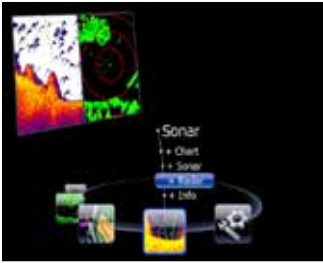
**To access Utilities:**

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**.

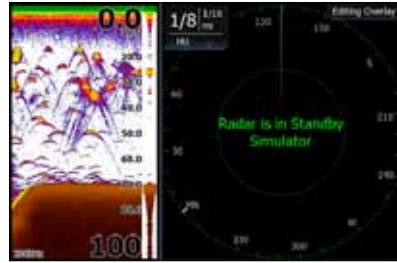


**Utilities Icon**

<b>Utilities</b>	
<b>Alarms</b>	Access alarm history, status and change settings
<b>Vessels</b>	View status and messages from vessels in the area
<b>Sun/Moon</b>	Displays time when sun and moon will rise/set
<b>Trip Calculator</b>	Keeps running tally/total of engine hours
<b>Files</b>	Access, copy and delete data files and sonar logs



**Radar selected as combo display option**



**Sonar/Radar combo page**

## Displaying Combo Pages

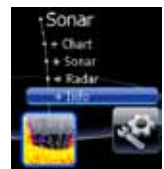
You can display multiple pages at the same time by scrolling the desired page's icon to the center of the screen and then choosing a secondary page from the list of combo page display options.

### 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.



**Primary page**



**Secondary page**

## Selecting an Active Panel

When combo pages are displayed only one panel can be active at a time. The panel outlined with an orange border is the active panel.

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.

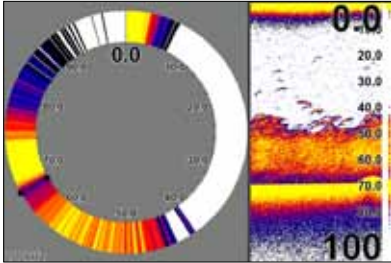
To switch the active setting to the other panel, hold down the **PAGES** key for 1 second.



**Sonar 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.



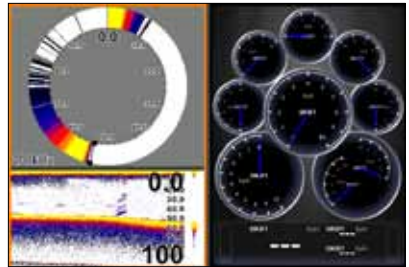
**Step 1: Select sonar split screen**



**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 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.



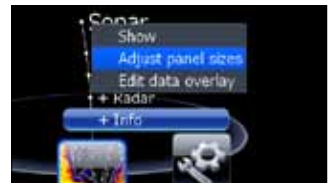
**Flasher, sonar and the info page shown on a multi-panel display.**

## 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.



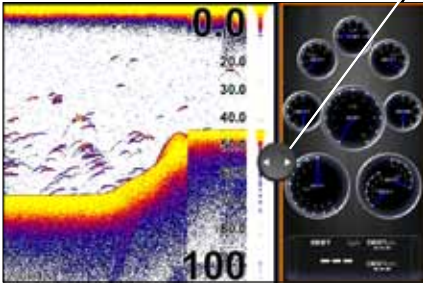
Panels can only be adjusted left/right, so the panels on the side with the split view can not be adjusted vertically.



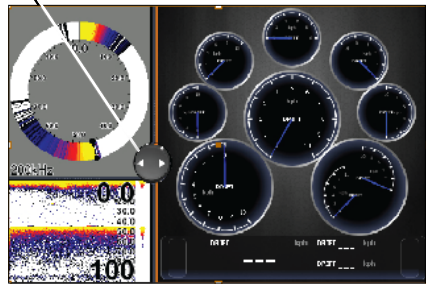
**Adjust panel sizes selected on the Data Overlay menu**



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



*Adjusting panels on combo page  
(Sonar/Info combo shown)*

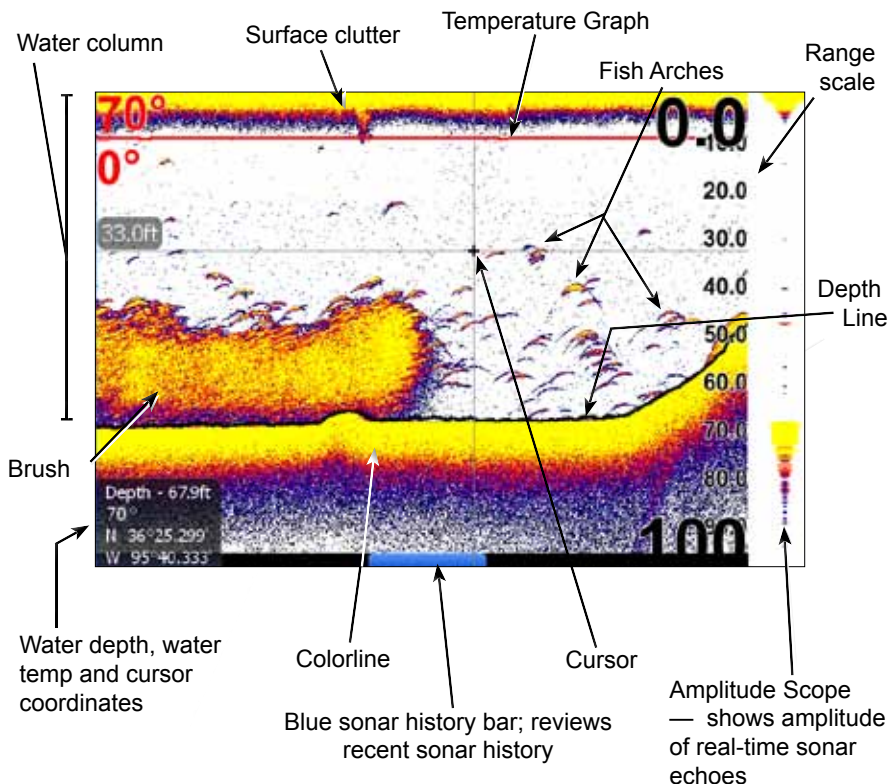


*Adjusting panels on multi-panel display  
(Sonar/Info combo shown)*

**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**.

# Sonar Operation



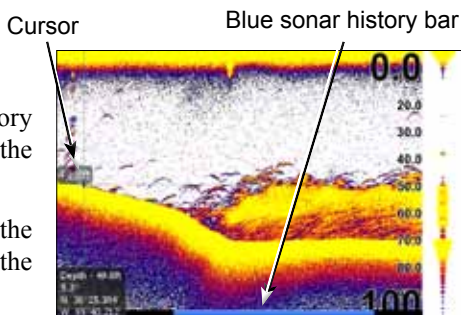
## To access the Sonar Page:

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 operation, move the cursor all the way to the right of the screen or press **EXIT**.



## Sonar Menu

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

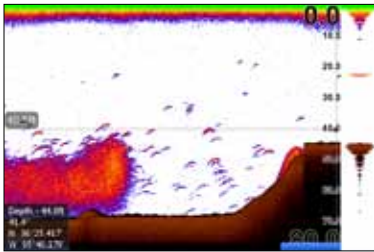
From the Sonar Page, press **MENU** to access the Sonar Menu.



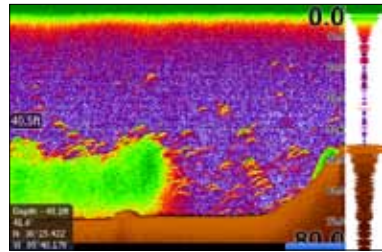
**Sonar Menu**

## 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.



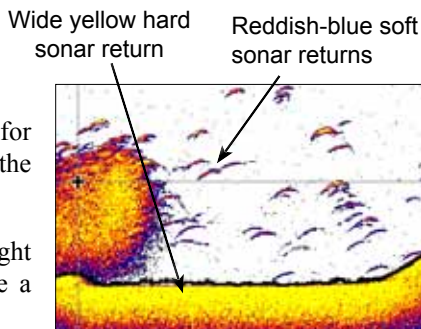
Auto Sensitivity can be turned on/off by selecting **Auto Sensitivity** from the Sonar menu and pressing **ENTER**.

# Sonar

## Colorline

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

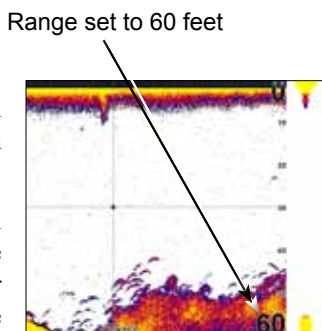
A hard return will be shown as a wide, bright yellow line, whereas a soft return will be a narrow reddish-blue line.



## 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.

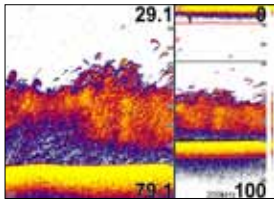


## Frequency

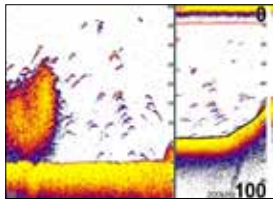
This unit supports three transducer frequencies; two of which are supported by your transducer. 200 kHz has the highest sensitivity and best target discrimination in shallower water; 83 kHz offers a wider cone angle for greater water coverage and 50 kHz provides the best depth penetration. You can view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

## Split

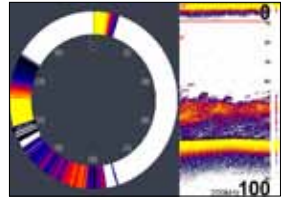
Adjusts the configuration of sonar page display using one of four options: No Split, Zoom, Bottom Lock and Flasher.



Zoom display



Bottom Lock



Flasher Display

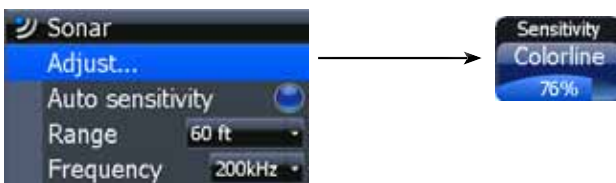
- **No Split** — displays full sonar screen
- **Zoom** — splits display with a zoomed-in panel on the left (press **ZOOM** key to increase zoom) and a normal sonar view on the right
- **Bottom Lock** — splits the display with a 2X zoom on the left; a normal sonar view on the right. Keeps the bottom on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

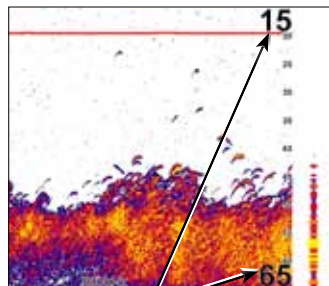


### To Adjust Sensitivity and Colorline:

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

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.



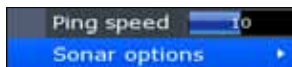
Upper limit is 15' (4.5m); lower limit is 65' (19m).

### 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

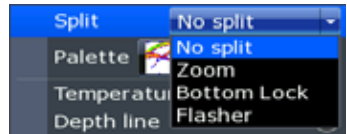
Adjusts display settings and the configuration of the display. The Sonar Options menu allows you to split the screen between two sonar views, change the color of the display, use Fish ID and add graphical elements to screen that will enhance your sonar experience.

To access the Sonar Options menu, select **Sonar Options** from the sonar menu and press **ENTER**.



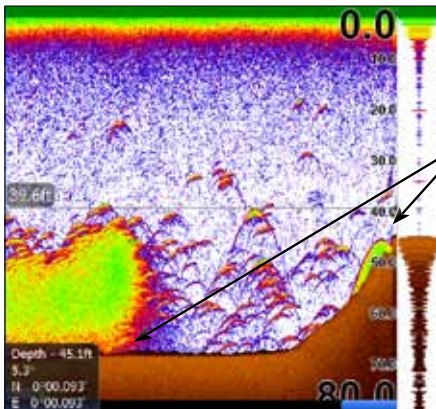
### To select a *Split* option:

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**.

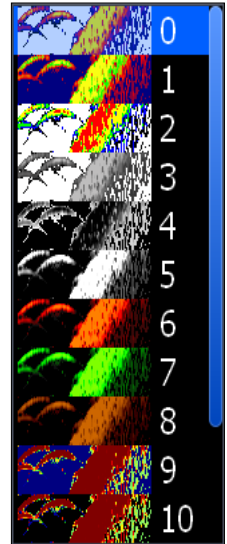


### Palette

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.



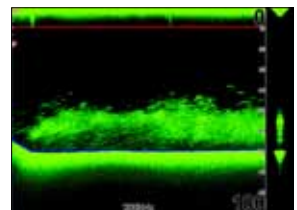
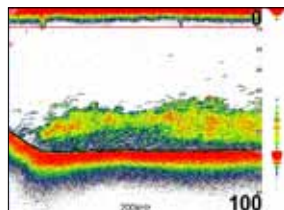
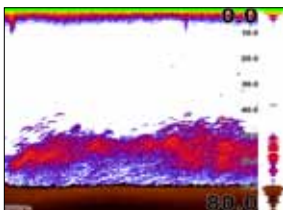
A bottom brown palette clearly separates fish and structure from the bottom



Palette menu

### To select a *Palette*:

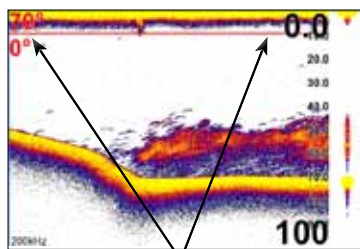
1. From the Sonar Options menu, highlight *Palette* and press **ENTER**.
2. Use the keypad to select the desired palette and press **ENTER**.



## 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**.

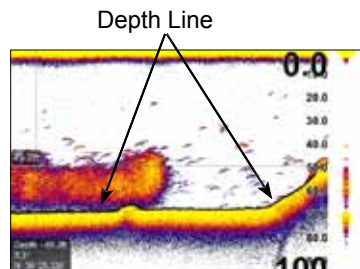


Temperature graph

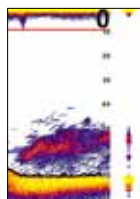
## Depth Line

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**.



Depth Line



## 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.



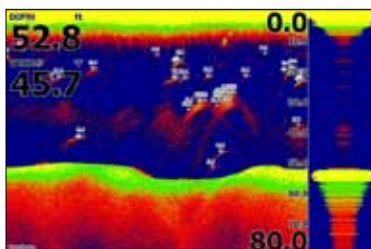
**Fish ID**

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 a Fish ID option:**

1. Highlight **Fish ID** and press **ENTER**.
2. Select **Symbols**, **Depths** or **Both** and press **ENTER**.

**Fish ID Beeps** — sounds a tone when Fish ID detects a fish.

**Measure Distance**

Used to measure the distance from one location to another on the sonar display.

**To Measure distance:**

1. Move the cursor to the starting location.
2. Select **Measure distance** on the Sonar menu and press **ENTER**.
3. Move the cursor to the second location. The Measure distance line will appear with the distance between the two locations shown in the cursor dialog box.
4. To measure another position, press **ENTER** and move the cursor to the desired location.

**Source**

Allows you to select the sonar source for your unit. You can select your unit as the source, or choose another unit on your ethernet network, allowing you to share sonar returns from one unit with other units on the network.

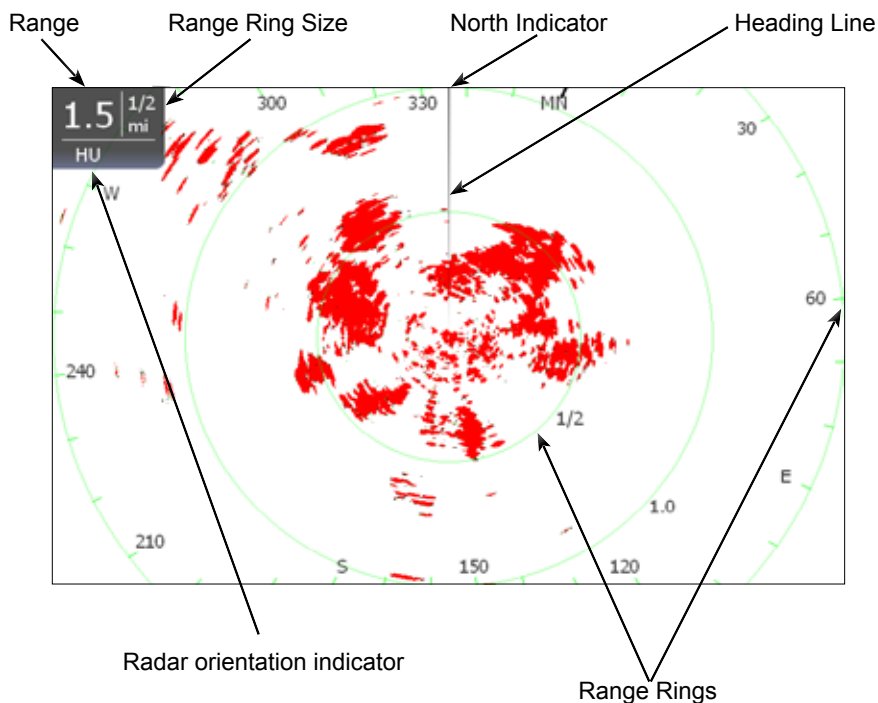
### ***To share/receive sonar data:***

1. Press **MENU** twice, select *Sonar* and press **ENTER**. Make sure the units sharing sonar have network sonar turned on.
2. Press **EXIT** twice.
3. Access the Sonar page, on the unit that will be sharing its sonar (master).
4. Press **MENU**, select *Source* and press **ENTER**.
5. Select *This unit* and press **ENTER**.
6. Press **EXIT**.



***NOTE:*** *To stop receiving shared sonar, turn off network sonar on the desired units.*

## Radar Operation (optional)



### 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.



<b>Adjust menu options</b>	
<b>Gain</b>	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.
<b>Sea Clutter</b>	Reduces or eliminates onscreen clutter caused by wave action near your vessel.
<b>Rain Clutter</b>	Precipitation reflects radar signals, cluttering the screen. Rain Clutter reduces or eliminates returns caused by rain, hail, sleet or snow.
<b>Interference Rejection</b>	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: <b>Off</b> , <b>Low</b> , <b>Medium</b> and <b>High</b> .
<b>Target Boost</b>	This feature increases the size of radar targets, making them easier to see on the display. Target Boost has four options: <b>Off</b> , <b>Low</b> , <b>Medium</b> and <b>High</b> .

## 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.

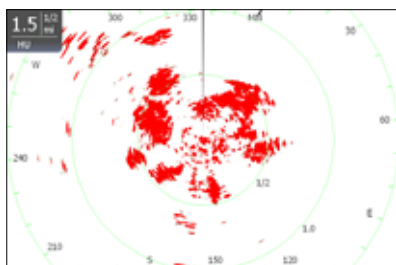
Sea Clutter Options	
<b>Manual</b>	Switches Sea Clutter from Auto to Manual mode
<b>Harbor</b>	Auto setting optimized for harbor-like environment
<b>Offshore</b>	Auto setting designed for offshore conditions

## Acquire Targets

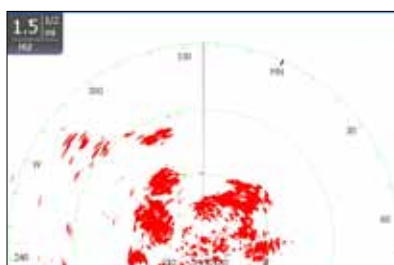
Used to select MARPA (Mini Automatic Radar Plotting Aid) targets. Refer to the Radar Settings segment in the Settings section for information on using MARPA.

## 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*.



**Center:** PPI centered on the display



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

### To change the PPI position:

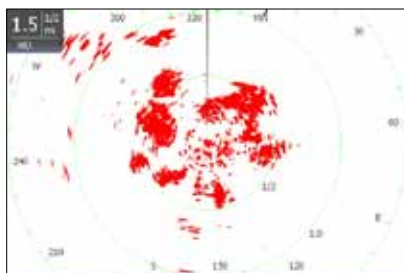
1. Select *Position* from the Radar menu and press **ENTER**.
2. Select the desired position and press **ENTER**.

Position	
<b>Center</b>	Default setting, will position the PPI in the center of the screen
<b>Look Ahead</b>	Shifts the PPI to the bottom of the screen, allowing you to see more of the area in front of your vessel
<b>Offset</b>	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

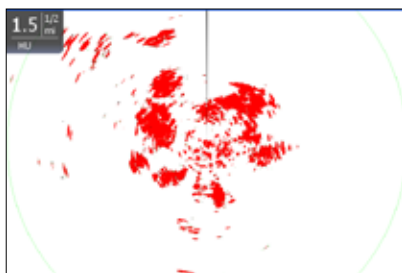
## Symbology

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.



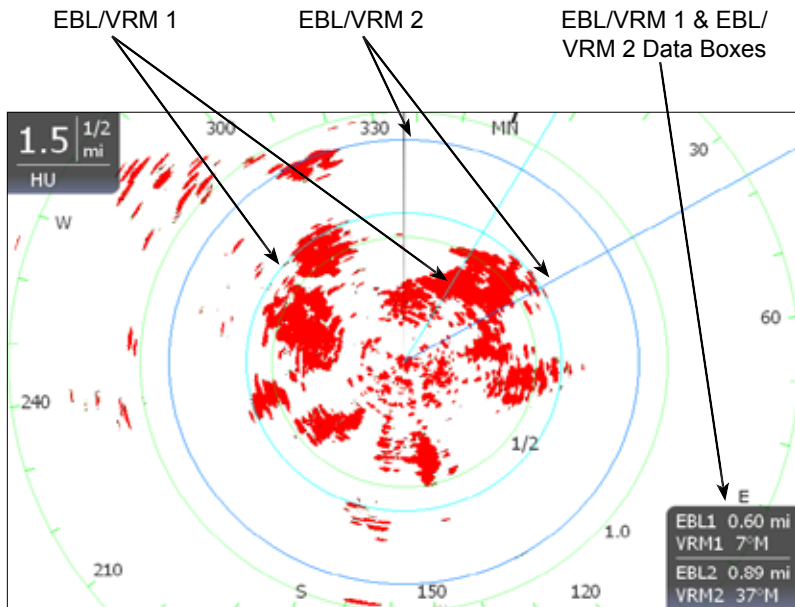
**Symbology on**



**Symbology off**

## EBL/VRM

An Electronic Bearing Line (EBL) is a radial line used to show the bearing 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.

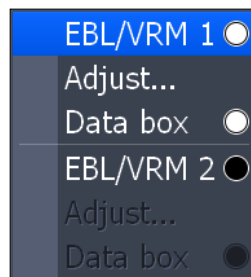


## EBL/VRM menu

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

### 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**.



*EBL/VRM menu*

### Adjust

Adjusts size and location of active *EBL/VRM*.

### To adjust an *EBL/VRM*:

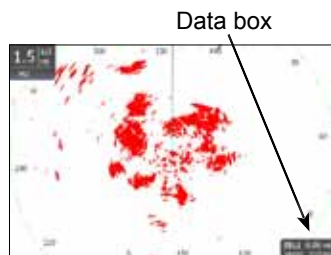
1. From the Radar menu highlight *EBL/VRM* and press **ENTER**.
2. Select *Adjust* and press **ENTER**.
3. Use the keypad to make adjustments to the *EBL/VRM*. Press **EXIT**.



## 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**.

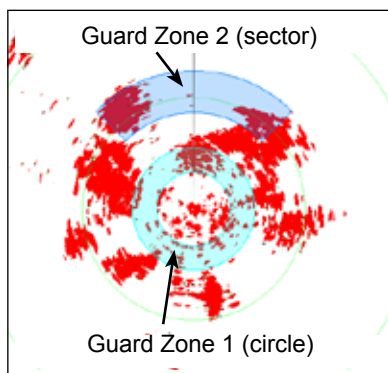


## Guard Zones

A zone or zones near or around your vessel that alert you if a radar target enters or leaves a zone. That makes it easier to be aware of the movement of radar targets around you, which improves collision avoidance.

There are two guard zones: Guard Zone 1 and Guard Zone 2.

You can control the shape, range, depth, bearing, width and sensitivity of guard zones.



**NOTE:** We recommend a 70-75% Guard Zone sensitivity setting for the BR24 to see smaller targets. Adjust as needed for your situation.

### **To turn on a Guard Zone:**

1. Press **MENU**, select *Guard Zones* and press **ENTER**.
2. Highlight Guard Zone 1 or Guard Zone 2 and press **ENTER**.

### **To change the shape of Guard Zones**

1. Select *Shape* and press **ENTER**.
2. Select the desired shape and press **ENTER**.

### **Using the Adjust menu:**

1. Select *Adjust* and press **ENTER**.
2. Press the keypad up/down to select the desired setting.
3. When the desired setting is selected, press the keypad left/right to make adjustments.
4. After adjustments are completed, press **ENTER**.



### **To choose alarm trigger (vessels entering or exiting zones):**

1. Select *Alarm when* and press **ENTER**.
2. Select the desired option and press **ENTER**.

# Settings Menu

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

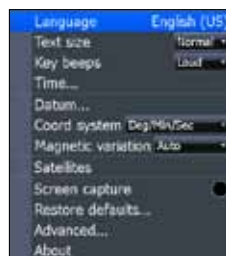
Settings Menu Options		
System	Fuel	Vessels
Page	Alarms	Simulator
Sonar	Units	
Radar (if applicable)	Network	

## 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. US units will be geofenced to English only if operated beyond 30 degrees West or beyond the international date line to the East.

**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.

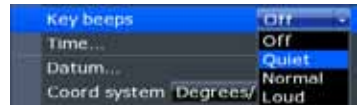


## To change Text Size:

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:

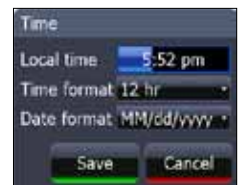
1. Highlight **Key Beeps** on the System menu and press **ENTER**.
2. Select the desired setting and press **ENTER**.

## Time (optional)

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**.

## Screen Capture

Saves images of your unit's screen to your unit. You will only be able to review images on your unit. You can not save them to an MMC/SD card.

### 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.



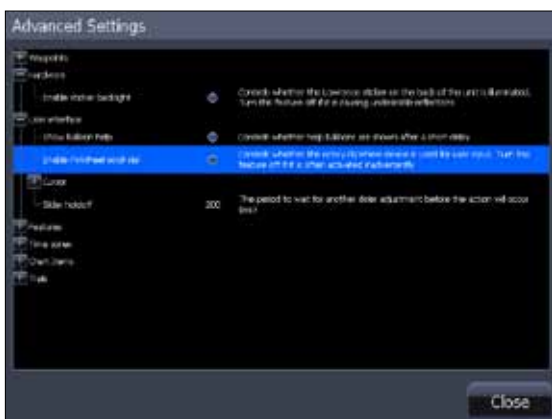
**NOTE:** To view screenshots, go to the Pages menu, access Utilities and select Files.

## Restore Defaults

The Restore Defaults command switches the unit back to the settings it had when you purchased it (default). Instructions on Restoring defaults are covered in the Getting Started section.

## Advanced

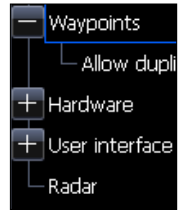
A fine tuning adjustment for advanced users that allows you to turn on/off features and control settings like duplicate waypoint names and slider hold off.



**Advanced Settings menu**

## 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 *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**.

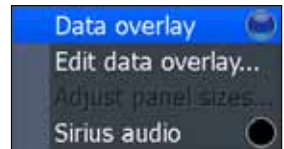


## About

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**.

## Pages

Used to make adjustments to overlay data, combo page panels and to turn on/off SIRIUS radio (if applicable). Overlay data setting adjustments are covered in the Pages section.

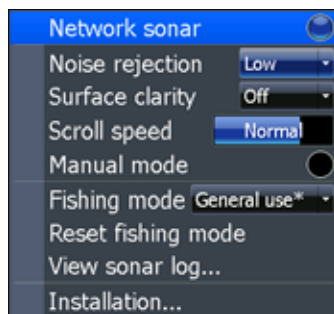


## Sonar Settings

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

### To access the Sonar Settings:

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



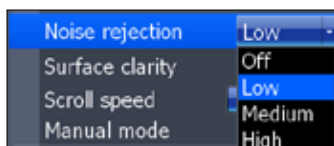
*Sonar Settings Menu*

## Network Sonar

Allows your unit to send/receive sonar 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**. Sonar sharing is covered in the Sonar section.

## Noise Rejection

Interference from bilge pumps, engine vibration, air bubbles, etc, can clutter your unit's display. Noise Rejection uses ASP (Advanced Signal Processing) to automatically clear interference from the display.

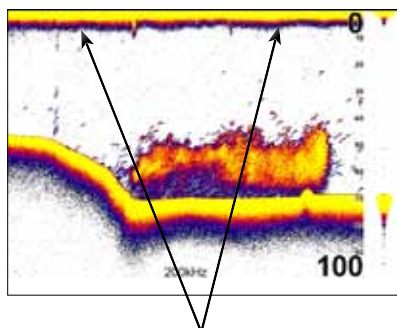


### To adjust Noise Rejection:

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.



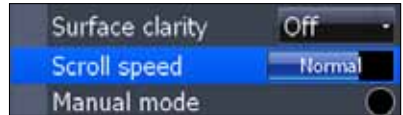
*Surface Clutter*

### **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

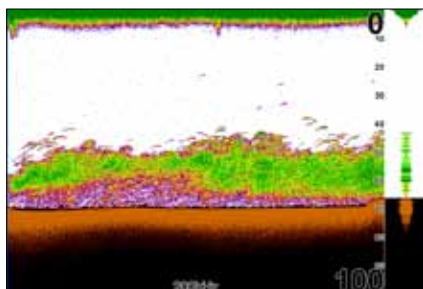
Enhances the performance of your unit by providing preset packages of sonar settings geared to specific fishing conditions.

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.

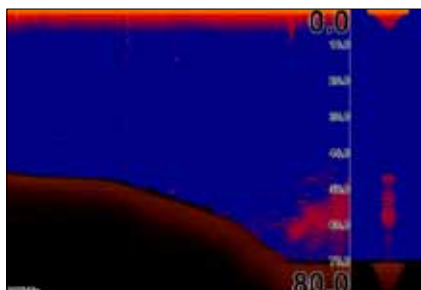
Fishing Mode	Depth	Settings	Palette
General Use	≤1,000 ft	50% Ping speed	Bottom brown/ blue background
Shallow Water	≤ 60 ft	75% Ping speed	bottom brown/white background
Fresh Water	≤ 400 ft	50% Ping speed	bottom brown/white background
Deep Water	≥ 1,000 ft	50% Ping speed	Deep Blue
Slow Trolling	≤ 400 ft	50% Ping speed	Bottom brown/white background
Fast Trolling	≤ 400 ft	Lower chart speed	Bottom brown/white background
Clear Water	≤ 400 ft	50% Ping speed	Bottom brown/white background
Ice Fishing	≤ 400 ft	Settings optimized to reduce interference from other sonar units	



**NOTE:** Use Shallow Water Fishing mode when fishing in less than 60 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**.

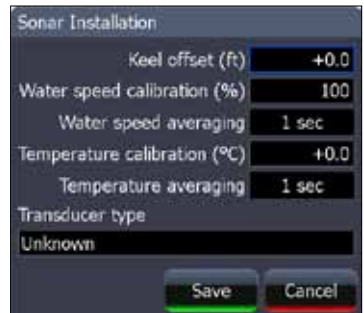
## Reset Fishing Mode

Resets selected fishing mode to default settings. That is useful when you want to clear settings adjustments made while using a fishing mode. To restore fishing mode defaults, select *Reset Fishing Mode* and press **ENTER**

## Installation Menu

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

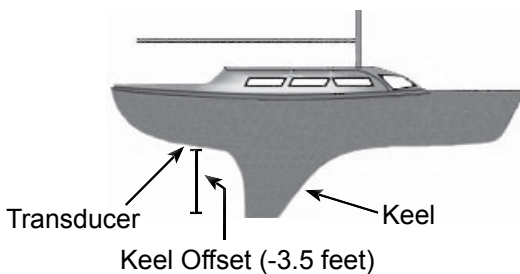
To access the Installation menu, highlight *Installation* on the Sonar Settings menu and press **ENTER**.



*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

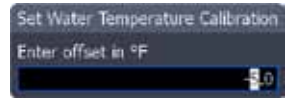
Averages water speed by measuring your speed at a selected interval. Water speed intervals range from one to 30 seconds. If you select five seconds, your water speed will be recorded every five seconds, then averaged.

### 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 data from another temperature source. That ensures the accuracy of temperature data from the selected temperature sensor.



**Water Temp calibration dialog box**

### To calibrate Temperature:

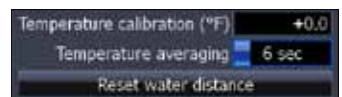
1. Select the **Temperature Calibration** text box from the Installation menu and press **ENTER**. The Water Temperature Calibration dialog box will appear.
2. Use the arrow keys to enter the percentage difference between temperature sources. Select **OK** and press **ENTER**.



**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:**

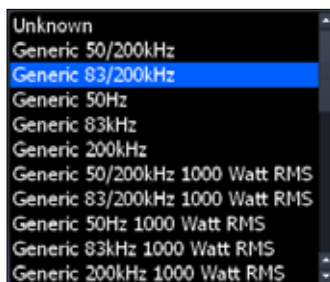
1. Highlight the *Temperature Averaging* box on the Installation menu.
2. Press the keypad left/right to select the desired interval and press **ENTER**.

**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 (optional)***

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

**To access the Radar settings menu:**

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



**Radar Settings**

## **Target Expansion**

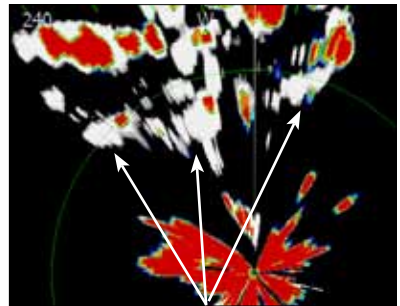
Increases the size of radar targets, making them easier to see on the radar display. To turn on/off Target Expansion, highlight *Target Expansion* and press **ENTER**.

## **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.

**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**.



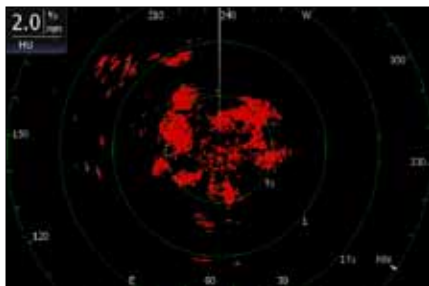
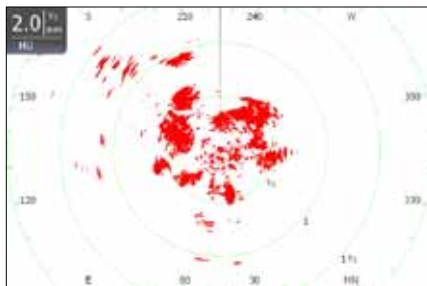
**Target Trails**

## **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**

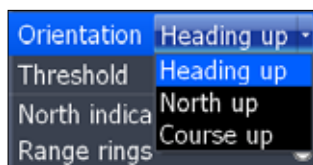
## Orientation

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. To make adjustments, select **Threshold** and press the keypad left/right.

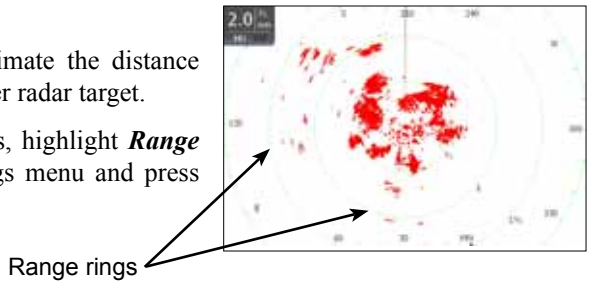
## North Indicator

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 another radar target.

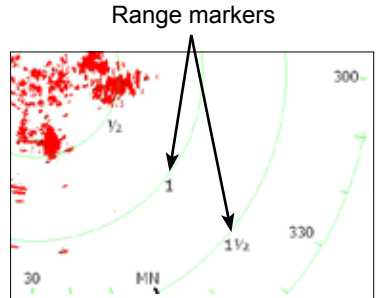
To turn on/off Range Rings, highlight **Range Rings** on the Radar Settings menu and press **ENTER**.



## Range Markers

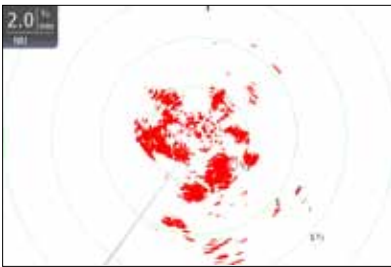
Located below each Range Ring, Range Markers display the distance from your position to each range ring.

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

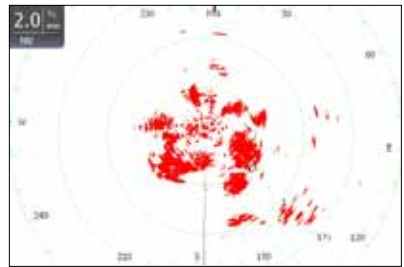


## Compass

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**.

**MARPA**

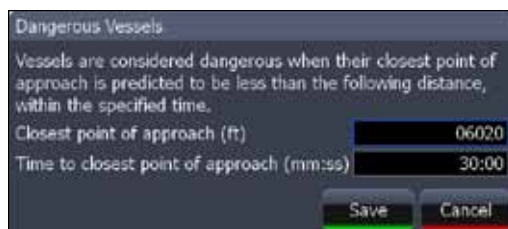
MARPA automatically tracks selected radar targets, making it easier to avoid collisions. You can track up to 10 targets simultaneously. MARPA uses default or selected CPA (closest point of approach) and TCPA settings (Time to closest point of approach) to determine if a selected target is safe, dangerous or lost.



**NOTE:** To use Radar overlay or MARPA, an RC42 heading sensor and a valid GPS fix is required. Your display, radar system and RC42 heading sensor need to be connected to the NMEA2000 network. Please refer to the HDS installation manual.

- **Safe** — not on an approaching path to your vessel
- **Dangerous** — on an approaching path to your vessel; when a target breaches the selected CPA or TCPA thresholds the target will be classified as dangerous
- **Lost** — selected target moves out of MARPA range

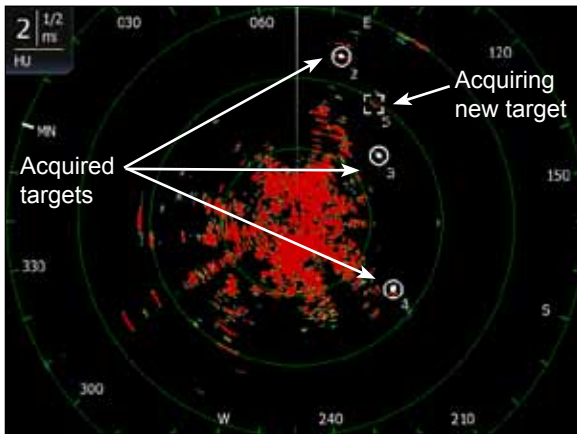
You can change CPA and TCPA values on the Dangerous vessels dialog.



***Dangerous vessels dialog***

## To adjust CPA and TCPA settings:

1. Press **MENU** twice
2. Select *Vessels* and press **ENTER**.
3. Select *Dangerous Vessels* and press **ENTER**.
4. Select the CPA or TCPA text box and press **ENTER**.
5. Follow the onscreen instructions and press **ENTER**.
6. Select *Save* and press **ENTER**.



## Selecting MARPA targets:

1. From the Radar page, press **MENU**.
2. Select *Acquire Targets* and press **ENTER**.
3. Move the cursor over a desired target and press **ENTER**.
4. Repeat Step 3 to select more targets.
5. Press **EXIT** to remove the cursor from the display.



## Canceling MARPA targets

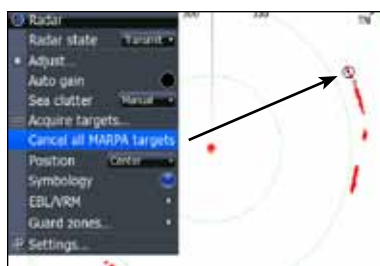
You can cancel MARPA targets individually or all at once.

### To cancel individual targets:

1. Press the keypad to activate the cursor.
2. Move the cursor over a target you are tracking and press **MENU**.
3. Select *Cancel Target* and press **ENTER**.



**Cancel individual targets**



**Cancel all targets**

### To cancel all targets:

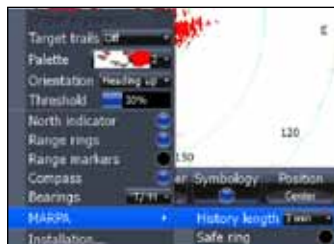
1. From the radar page, press **MENU**.
2. Select *Cancel All MARPA Targets* and press **ENTER**.

## MARPA Settings

There are two settings on the MARPA menu: History Length and Safe Ring.

Similar to the target trails features, history length controls the length of trails on selected targets making it easier to follow target movement.

The Safe Ring provides a graphical representation of CPA settings.



### To select history length:

1. Select *MARPA* and press **ENTER**.
2. Select *History Length* and press **ENTER**.
3. Select the desired settings and press **ENTER**.

## Target Alarms

You can be alerted when a MARPA target breaches CPA or TCPA thresholds by setting an alarm.

### To set MARPA target alarm:

1. Press **MENU** twice.
2. Select *Alarms* and press **ENTER**.
3. Select *Settings* and press **ENTER**.
4. Select *Vessels* and press **ENTER**.
5. Select the desired alarm and press **ENTER**.



## Viewing MARPA targets on Vessels list

You can view a list of MARPA targets by selecting Vessels from Utilities on the Pages menu.

## Installation

Provides access to the Radar Installation menu. Your installation menu will vary depending on the type of radar you have connected to your HDS unit.



**Radar Installation menu**



**BR24 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.

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



**Adjustment Menu**

## Bearing alignment

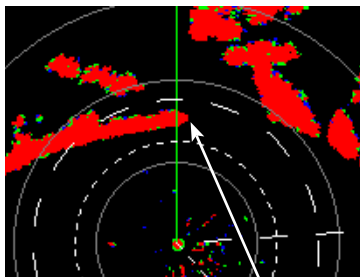
Used to align the bow of your vessel with the heading line (zero point). Bearing alignment is also referred to as zero bearing.

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

### To select Heading up orientation:

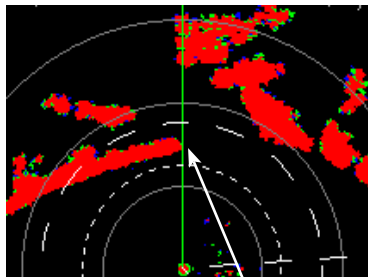
1. From the Radar Page, press **MENU**.
2. Select *Orientation* and press **ENTER**.
3. Use the keypad to select *Heading Up* and press **ENTER**.
4. Press **EXIT**.

### Before Bearing Alignment



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

### After Bearing Alignment



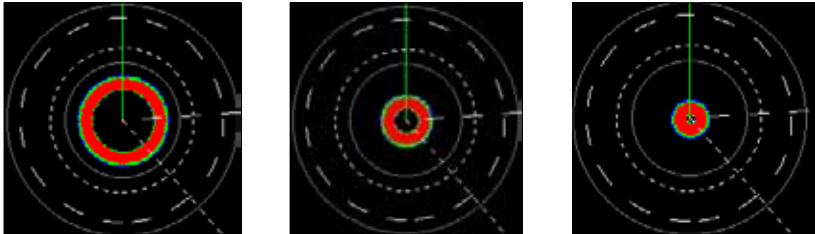
**Bearing line aligned with peninsula, matching the alignment of the bow.**

## 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 the 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**.

## Tune

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

## Fast scan mode (BR24 Radar only)

Increases the speed of the radar scanner when the range is set to 1.5nm or less. That aids in collision avoidance by giving you more updates on the movement of targets in your vicinity.

### To use Fast Scan mode:

1. Press **MENU** twice.
2. Select *Radar* and press **ENTER**.
3. Select *Installation* and press **ENTER**.
4. Highlight *Fast scan mode* and press **ENTER**.
5. Press **EXIT** twice to return to the display.
6. Zoom in the radar display to 1.5nm or less and BR24 scanning speed will increase.



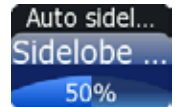
## Sidelobe suppression (BR24 only)

Sidelobes are false returns caused by the reflection of your radar signal. Sidelobe suppression helps reduce the impact of sidelobes on your radar display. The default Auto mode will work well under most conditions.



### **Manually adjusting Sidelobe suppression:**

1. Press **MENU** twice.
2. Select *Radar* and press **ENTER**.
3. Select *Installation* and press **ENTER**.
4. Highlight *Sidelobe suppression* and press **ENTER**.
5. Highlight *Sidelobe suppression* and press the keypad left/right to make manual adjustments.
6. Press **EXIT**.



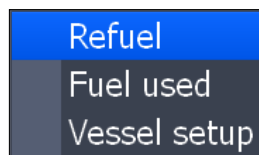
## Reset Radar to Factory Defaults

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.



Set to Full checkbox: check this box when you fill up your tank

Amount Added text box: Input amount of fuel added here

**Refuel menu**

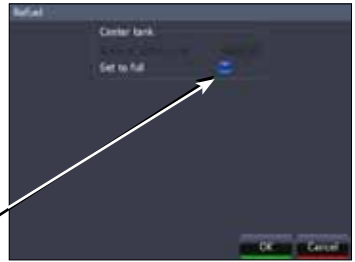
It is important to enter the amount of fuel added to your tank(s) each time fuel is added. That ensures the correct fuel data is used in the unit's fuel performance calculations.

### 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**.

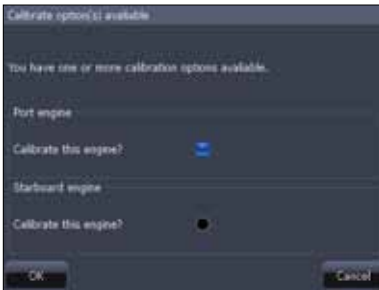
## To set tank to full:

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.



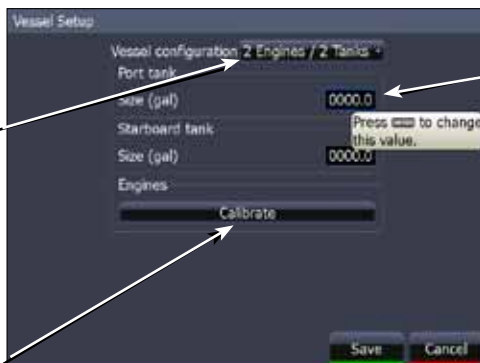
**Fuel used screen**

## 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 configuration menu: select number of engines and fuel tanks here



Tank size text box: input tank size here

Calibration info button: get calibration info here

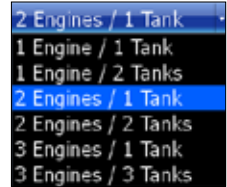
**Vessel Setup**

## 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 text box* and press **ENTER**.
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**.

The screenshot shows the 'Alarms' settings screen with three tabs: 'Active', 'History', and 'Settings'. The 'Settings' tab is selected. Below the tabs is a list of alarms with their respective limits. The 'Off course' alarm is highlighted in blue. Annotations with arrows point to various elements:

- 'Displays list of enabled alarms' points to the 'Active' tab.
- 'Shows history of alarm activity' points to the 'History' tab.
- 'Enable alarms and set limits (thresholds)' points to the 'Settings' tab.
- 'Enabled Alarm' points to the radio button next to 'Off course'.
- 'Alarms List' points to the list of alarm items.
- 'Alarm Limits (Thresholds)' points to the numerical values next to the alarm names.

Alarm	Limit
No GPS fix	-
Shallow water	10 (ft)
Deep water	100 (ft)
Water temp rate	27 (°F/min)
Anchor	66 (ft)
Low boat speed	9 (kph)
<b>Off course</b>	<b>1.00 (nm)</b>
Waypoint radius	-
Arrival	0 (ft)
True wind shift	6 (°)
True wind high	25 (kn)
True wind low	5 (kn)
Missing data	-
Weather	-

## 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.



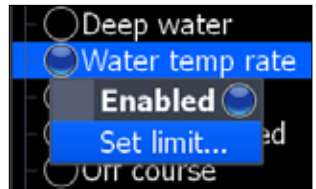
After alarm is silenced its corresponding alarm bell will continue to flash in the bottom left corner of the screen. To remove the bell from the screen, disable the alarm and then enable it again. The bell will not reappear unless the alarm is triggered.

## 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**.



## Siren Enabled

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

## Units

Controls the unit of measure used for unit data. Only Imperial and Nautical units will be shown if the unit is operated outside of a zone defined by 30 degrees west longitude and the International Date Line.

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:**

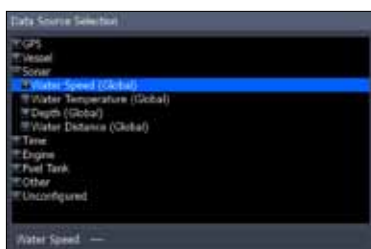
1. Select *Auto Configure* from the Network menu and press **ENTER**.
2. Highlight *Yes* and press **ENTER**.

## 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**.



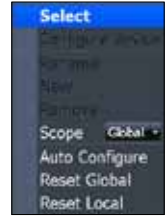
**Data Source Selection Screen**

**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.

### 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 *Reset Global* or *Reset Local* and press **ENTER**. A confirmation message will appear.
2. Select *Yes* and press **ENTER**.

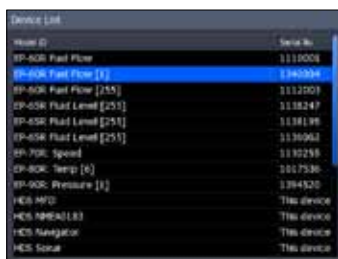
**Device List**

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

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

**From the Device List you can:**

- 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



Node ID	Serial No.
EP-ADR Fuel Flow [1]	1110000
EP-ADR Fuel Flow [2]	1140000
EP-ADR Fuel Flow [255]	1112200
EP-ADR Fuel Level [25]	1118247
EP-ADR Fuel Level [25]	1138199
EP-ADR Fuel Level [25]	1136962
EP-700: Speed	1130259
EP-800: Temp [6]	1017536
EP-800: Pressure [1]	1044520
HES MFD	This device
HES TMRAD103	This device
HES Navigation	This device
HES Social	This device

**Device List****Device Menu**

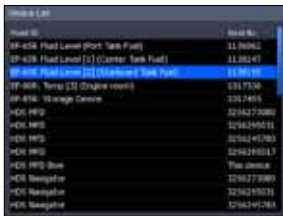
Controls the way data is displayed on the Device list. To access the Device menu, highlight the desired device and press **MENU**.



<b>Device Menu Options</b>	
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

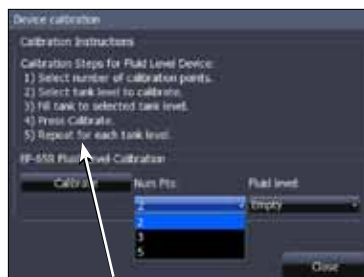
You can change a device instance from the Device Configuration screen. This, however, should only be attempted by a qualified technician.

### 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 controls the unit's ability to receive waypoints over a NMEA 0183 network.

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



**NOTE:** To send waypoints, your must have access to GPS through an NMEA 2000 network.

When your unit has access to GPS, waypoints will be automatically received/sent when the feature is turned on.

### To view waypoints:

1. Access **Utilities** from the Pages menu.
2. Select **Waypoints** and press **ENTER**.

## Serial Ports

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

**To configure serial ports:**

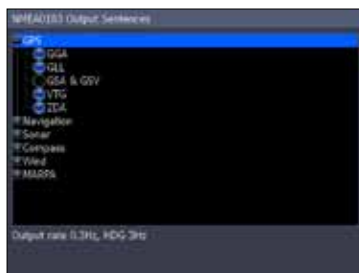
1. Highlight *Serial Ports* on the Network menu and press **ENTER**.
2. Select the desired setting and press **ENTER**.
3. Use the keypad to select the desired option and press **ENTER**.
4. Highlight *OK* and press **ENTER**.

**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.

**To access NMEA 0183 Output screen:**

1. Select *NMEA 0183 Output* from the Network menu and press **ENTER**.
2. Select *NMEA 2000 output sentences* and press **ENTER**.
3. Select the desired category and press **ENTER** to reveal the NMEA 0183 sentences.
4. Highlight the desired sentence and press **EXIT**.



**NMEA 0183 Output sentences screen**



**NOTE:** *There is no graphical display of dangerous vessels on the HDS-5x. You can view the numerical position and bearing of dangerous vessels from the Vessels menu.*

**Vessels (only available if connected to AIS receiver)**

Controls settings used to monitor vessels transmitting AIS information in your area. That makes it easier to navigate safely through high traffic areas.

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

## **Dangerous Vessels**

Allows you to set the dangerous vessel threshold via CPA (Closest point of approach) and TCPA (Time to closest point of approach) settings.

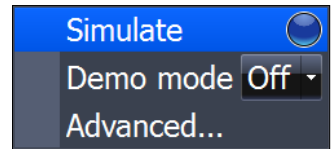
### **To adjust CPA or TCPA settings:**

1. Select **Dangerous Vessels** from the Vessels menu and press **ENTER**.
2. Select the CPA or TCPA text box and press **ENTER**.
3. Follow the onscreen instructions and press **ENTER**.
4. Select **Save** 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 or radar data files (where applicable). To access the Advanced menu, select **Advanced** from the Simulator menu and press **ENTER**.

# Specifications: HDS-5x

## General

### Case Size:

- *HDS-5x*: 5.8" H x 7.3" W x 4" D (14.6 x 18.4 x 10.2 cm), 2.30 lbs

### Display:

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

### Backlighting:

- *HDS-5x*: Florescent (CCFL) backlit screen, LED keypad backlight

### Supply voltage:

10 to 18 volts DC

### Supply current:

- *HDS-5x*: 0.7A at 13VDC with backlight on, 0.4A with backlight off

### Operating temperature:

-15°C to 55°C (5°F to 130°F)

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

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

### Standards compliance:

- Waterproofing: IPX7
- EMC: IC RSS-310; FCC Part 15 Class B; IEC60945

### Compliance:

The Lowrance HDS complies with the following regulations:

- CE compliant under R&TTE directive.
- C - Tick compliant under Radiocommunications act 1992.
- CCS Type approval.

HDS also meets the technical standards in accordance with Part 15.103 of the FCC rules. For more information please refer to our website: [www.lowrance.com](http://www.lowrance.com).

## Sonar

**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

## Unit Care

### ***Cleaning the screen***

Clean the screen with a mixture of distilled water (50%) and white distilled vinegar (50%) or Windex® Vinegar Multi Surface. Do not use any type of abrasive cleaners. They will remove the Anti-Reflection coating from the glass.

### ***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

### ***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.

## **Contact & Service Information**

For spare parts or service information, please contact one of our local sales offices or visit our website:

[www.lowrance.com](http://www.lowrance.com)



# 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 face of the transducer is parallel to the ground. Refer to the installation manual for more information.
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 is 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.

## 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 too small.

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