

**GARMIN**<sup>®</sup>

# GPSMAP<sup>®</sup> 4000/5000 series owner's manual



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# Introduction



## WARNING

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.



This manual includes information for the following products:

- GPSMAP® 4008
- GPSMAP 4010
- GPSMAP 4012
- GPSMAP 5008
- GPSMAP 5012
- GPSMAP 5015

## Tips and Shortcuts

- Select **Home** from any screen to return to the Home screen.
- Select **Menu** from any main screen to access additional settings.
- Select the  **Power** key to adjust the backlight and color mode.
- Hold the  **Power** key to turn the chartplotter on or off.

## Manual Conventions

- When you are instructed to select an item:
  - For the GPSMAP 4000 series, press the soft key along the right side of the screen
  - For the GPSMAP 5000 series, use your finger to touch that item on the screen.
- When you are instructed to select a location on a navigation, weather, radar, or sonar screen:
  - For the GPSMAP 4000 series, use the **Rocker** to select the location using the cursor (.
  - For the GPSMAP 5000 series, touch the chart to select the location using the cursor (.
- When you are instructed to enter text or numeric characters:
  - For the GPSMAP 4000 series, use the **Rocker** or the **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
- Arrows (>) in the text indicate that you should select each item in order. For example, if you see “select **Charts** > **Navigation Chart**,” you should select **Charts**, then select **Navigation Chart**.

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# Getting Started

## Front and Back Panels



GPSMAP 4012



GPSMAP 5008

Item	Description
①	Power key
②	Automatic backlight sensor
③	Range keys
④	Rocker key
⑤	Soft keys
⑥	MARK, SELECT, MENU, and HOME buttons
⑦	Numeric keypad (4012 and 4212 only)
⑧	Data card slot



Item	Description
①	Network connectors
②	NMEA 2000 connector
③	Power connector
④	Video connector
⑤	NMEA 0183 connector

## Turning On the Chartplotter

Select .

## Turning Off the Chartplotter

Hold .



## Initial Chartplotter Settings

The first time you turn on the chartplotter, you must configure a series of initial settings. You must also configure these settings when restoring original factory settings ([page 104](#)). You can update each of these settings later.

### Configuring the Initial Chartplotter Settings

Follow the on-screen directions to configure the initial settings.

## GPS Satellite Signal Acquisition

After you turn on the chartplotter, the GPS receiver must collect satellite data and establish the current location. When the chartplotter acquires satellite signals, the signal strength bars at the top of the Home screen are green . When the chartplotter loses satellite signals, the green bars disappear  and a flashing question mark appears on the vehicle (boat) icon on the chart screen.

For more information about GPS, go to [www.garmin.com/aboutGPS](http://www.garmin.com/aboutGPS).

## Adjusting the Backlight

1. From the Home screen, select **Configure > System > Beeper/Display > Backlight > Backlight**.

**TIP:** Select  from any screen to open the display screen.

2. Adjust the backlight:
  - Select **Auto** to allow the chartplotter to adjust the backlight automatically, based on ambient light.
  - Select **Up** or **Down** to adjust the backlight manually.



## Adjusting the Color Mode

1. From the Home screen, select **Configure > System > Beeper/Display > Backlight**.


**TIP:** Select  from any screen to open the display screen.

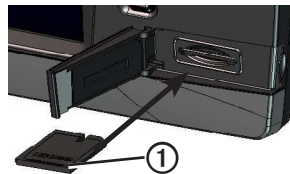
2. Select **Color Mode**.
3. Select **Day Colors**, **Night Colors**, or **Auto**.

The Auto setting automatically changes the color scheme based on sunrise and sunset times.

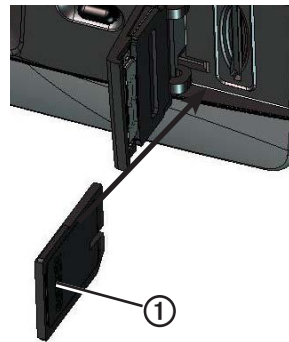
## Inserting and Removing Data and Memory Cards

You can insert optional BlueChart® g2 Vision® data cards to view high-resolution satellite imagery and aerial reference photos of ports, harbors, marinas, and other points of interest. You can insert blank SD memory cards to transfer data such as waypoints, routes, and tracks to another compatible Garmin chartplotter or a computer (page 60). The Data card slot is located on the front of the chartplotter.

- Open the access door, insert the Data card (with the label  facing right for a vertical slot or up for a horizontal slot) into the slot, and press the card until it clicks.
- Press the data card or the memory card into the slot again and release it to eject the card.



Horizontal SD Card Slot



Vertical SD Card Slot

## Viewing System Information

You can view the software version, the basemap version, any supplemental map information (if applicable), and the unit ID number. You may need this information to update the system software or to purchase additional map data information.

From the Home screen, select **Configure > System > System Information**.

## About the Home Screen

You can use the Home screen to access all other screens.

**NOTE:** Options on this screen vary based on the chartplotter type and optional connected devices.



Home Screen GPSMAP 4000 Series



Home Screen GPSMAP 5000 Series

Menu Item	Description
Charts	Allows you to access the Navigation Chart, Perspective 3D, Mariner's Eye 3D, Fish Eye 3D, the Fishing Chart, and the Radar Overlay ( <a href="#">page 5</a> ). <b>NOTE:</b> Mariner's Eye 3D and Fish Eye 3D are available only if you use a BlueChart g2 Vision data card ( <a href="#">page 21</a> ). The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 data card, or if your built-in map supports Fishing Charts.
Sonar	Sets up and provides sonar information (only available if the chartplotter is connected to a Garmin sonar module) ( <a href="#">page 87</a> ).
Combinations	Sets up a split screen displaying chart, sonar, radar, engine and fuel data, and video in a two- or three-field screen ( <a href="#">page 27</a> ).
Information	Shows information including tides, currents, celestial data, user data, information about other boats, gauges, and video ( <a href="#">page 42</a> ).
Mark	Marks, edits, or deletes your current location as a waypoint or a man-overboard location ( <a href="#">page 33</a> ).
Where To?	Provides navigation features ( <a href="#">page 39</a> ).
Radar	Sets up and shows radar (only available if the chartplotter is connected to a Garmin marine radar) ( <a href="#">page 63</a> ).
Weather	(North America only) Sets up and shows various weather parameters, including precipitation, forecast, fishing, sea conditions, and visibility (only available if the chartplotter is connected to a weather module and you have an XM <sup>®</sup> subscription). See the <i>XM WX Satellite Weather<sup>®</sup> and XM Satellite Radio Supplement</i> (North America only).
Configure	Allows you to view and edit the settings for your chartplotter and system ( <a href="#">page 51</a> ).
Man Overboard	Marks your current location as a waypoint, and sets a course back to the marked location ( <a href="#">page 33</a> ).



## Charts and 3D Chart Views

All GPSMAP 4000/5000 series chartplotters have a basic imagery map. The GPSMAP 4208, 4210, 4212, 5208, 5212, and 5215 chartplotters have built-in, detailed, BlueChart g2 offshore cartography for US waters. The charts and 3D chart views listed below are available on the chartplotter.

**NOTE:** Mariner's Eye 3D and Fish Eye 3D Chart views are available only if you use a BlueChart g2 Vision data card (page 21). The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 data card, or if your built-in map supports Fishing Charts.

Heading	Description
Navigation Chart	Shows navigation data available on your pre-loaded maps and from supplemental maps, if available. The data includes buoys, lights, cables, depth soundings, marinas, and tide stations in an overhead view (page 5).
Perspective 3D	Shows a view from above and behind your boat for a visual navigation aid (page 19).
Mariner's Eye 3D	Shows a detailed, three-dimensional view from above and behind the boat for a visual navigation aid (page 22).
Fish Eye 3D	Provides an underwater view that visually represents the sea floor according to the chart information (page 23).
Fishing Chart	Removes navigational data from the chart and enhances bottom contours for depth recognition (page 24).
Radar Overlay	Superimposes radar information on the Navigation Chart or the Fishing Chart (page 73).

### Navigation Chart

Use the Navigation Chart to plan your course, to view map information, and as a navigational aid.


From the Home screen, select **Charts > Navigation Chart**.



**Navigation Chart with BlueChart g2 Vision Data**

①	Marine services	⑤	Your boat
②	Exposed wreck	⑥	Buoy
③	Submerged wreck	⑦	Zoom scale
④	Beacon		







### Zooming In and Out on the Map

The zoom level is indicated by the scale number at the bottom of the Navigation Chart () . The bar under the scale number represents that distance on the map.

- For the GPSMAP 4000 series, press the **Range** (-/+) keys to zoom out and zoom in.
- For the GPSMAP 5000 series, touch the  and  buttons to zoom out and zoom in.

## Chart Symbols

BlueChart g2 and BlueChart g2 Vision Charts use graphic symbols to denote map features, which follow the standards for US and international charts. Some other common symbols you might see include, but are not limited to, those shown below.

Icon	Description
	Current station
	Information
	Marine services
	Tide station
	Overhead photo available
	Perspective photo available

Other features common to most charts include depth contour lines (with deep water represented in white), intertidal zones, spot soundings (as depicted on the original paper chart), navigational aids and symbols, and obstructions and cable areas.

## Navigating to a Point on a Chart

### CAUTION

The Auto Guidance feature of the BlueChart g2 Vision data card is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings and steer to avoid land, shallow water, and other dangerous objects.

**NOTE:** The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, or Radar Overlay**.
3. Select where you want to go.
4. Select **Navigate To**.
5. Select an option:
  - Select **Go To** to navigate directly to the location.
  - Select **Route To** to create a route to the location, including turns ([page 34](#)).
  - Select **Guide To** to use Auto Guidance ([page 26](#)).
6. Review the course indicated by the magenta line.

**NOTE:** When using Auto Guidance, a gray line within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and the minimum safe obstacle height ([page 53](#)).

7. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

## Panning the Navigation or Fishing Chart

You can pan away from your current location to other areas on the Navigation Chart, the Fishing Chart, or the Radar Overlay.

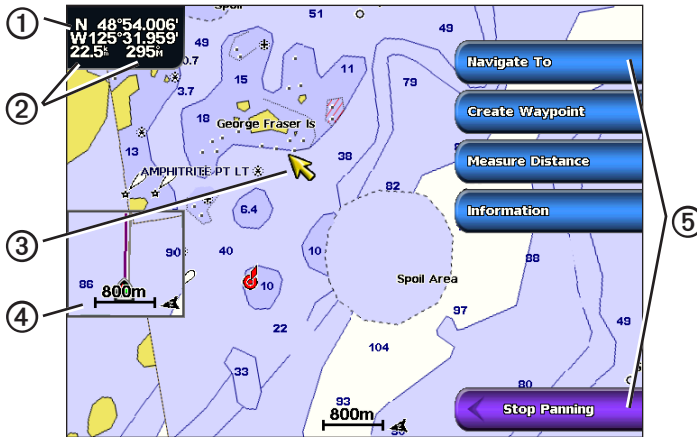
**NOTE:** The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts. The Radar Overlay is available when connected to a compatible radar.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, or Radar Overlay**.

## 3. Complete an action:

- For the GPSMAP 4000 series, use the **Rocker** to pan the map.
- For the GPSMAP 5000 series, touch and drag the Navigation screen to pan the map.

When you pan past the edge of the map, the screen scrolls forward to provide continuous map coverage. The position icon (📍) stays at your present location. If the position icon leaves the map when you pan, a small window (inset map) appears on the left of the screen so you can keep track of your present position. The coordinate location of the cursor appears in the upper-left corner of the map, along with the distance and bearing of the cursor from your present location.



①	Cursor coordinates
②	Cursor distance and bearing from present location
③	Cursor
④	Inset map
⑤	Pan options

4. Select **Stop Panning** to stop panning and return the screen to your present location.**Showing an Inset Map**

You can control whether an inset map appears on the Navigation Chart or the Fishing Chart.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 or BlueChart g2 Vision data card, or by updating to the most current built-in map.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, or Radar Overlay**.
3. Select **Menu > Chart Setup > Inset Map**.
4. Complete an action:
  - Select **On** to show an inset map at all times.
  - Select **Off** to never show an inset map.
  - Select **Auto** to show an inset map while panning, only when the position icon (📍) is no longer visible on the screen.

**Configuring the Appearance of Waypoint Symbols**

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, or Radar Overlay**.
3. Select **Menu > Waypoints & Tracks > Waypoint Display**.
4. Select a waypoint symbol.

5. Complete an action:

- Select **Label** to display the name and symbol.
- Select **Comment** to display any comments you have added.
- Select **Symbol** to display only the symbol.
- Select **Hide** to hide the symbol.

### Setting the Color of the Active Track

See (page 37).

### Showing or Hiding Colored Tracks

You can specify the color of tracks (page 37) and then show or hide all tracks of that color.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart**, **Fishing Chart**, or **Radar Overlay**.
3. Select **Menu > Waypoints & Tracks > Tracks Display**.
4. Select a color to show or hide all tracks of that color.

### Viewing Location and Object Information on a Chart

You can view information about a location or an object on the Navigation Chart or the Fishing Chart.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart**, **Fishing Chart**, or **Radar Overlay**.
3. Select a location or an object.

A list of options appears along the right side of the chart. The options that appear vary based on the location or object you selected.

4. Complete an action:

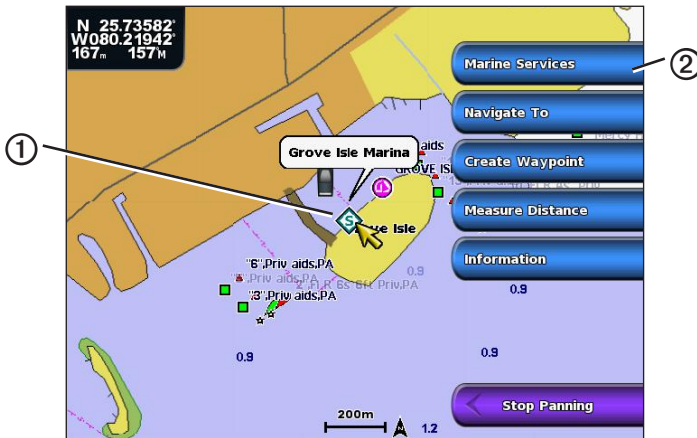
- Select **Review** to view details of objects in the vicinity of the cursor. (**Review** does not appear if the cursor is not near an object. If the cursor is near only one object, the name of the object appears.)
- Select **Navigate To** to navigate to the selected location (page 6).
- Select **Create Waypoint** to mark a waypoint at the cursor location.
- Select **Measure Distance** to view the distance and bearing of the object from your current location. The information appears in the upper-left corner of the screen. Select **Set Reference** to measure from a location other than your current location.
- Select **Information** to view tide (page 42), current (page 43), celestial (page 44), chart notes, or local services information near the cursor.
- Select **Stop Pointing** to remove the pointer from the screen. Select **Stop Panning** to stop panning and return the screen to your present location.

## Viewing Additional Object Information

You can view information about on-screen map items, waypoints, and charts.

**NOTE:** Mariner's Eye 3D and Fish Eye 3D Chart views are available only if you use a BlueChart g2 Vision data card (page 21). The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select an object ①.



4. Select the button with the name of the item to view the information ②.

## Viewing Tide Station Information

Tide-station information appears on the chart with a tide station icon (T). You can view a detailed graph for a tide station to help predict the tide level at different times or on different days (page 42).

**NOTE:** The Fishing Chart and tide station icons are available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart**, **Fishing Chart**, or **Radar Overlay**.
3. Select a tide station icon.

Tide direction ① and tide level information appear ② near the icon.



4. Complete an action:
  - Select the button with the station name ③.
  - Select **Review** if more than one item is in the vicinity, and select the button with the station name.

## Showing and Configuring Tides and Currents

You can show tide and current information on the Navigation Chart or the Fishing Chart.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select **Menu**.
4. Select **Chart Setup**.
5. Select **Tides/Currents**.
6. Complete an action:
  - Select **On** to show current station and tide station indicators on the chart, or select **Off** to hide current station and tide station indicators.
  - Select **Animated** to show animated tide station indicators and animated current direction indicators on the chart ([page 26](#)).

## Viewing Details about Navaids

From the Navigation Chart, the Fishing Chart, Perspective 3D, or Mariner's Eye 3D, you can view details about various types of navigation aids, including beacons, lights, and obstructions. See [page 13](#) to configure the appearance of navaid symbols.

**NOTE:** The Mariner's Eye 3D Chart view is available only if you use a BlueChart g2 Vision data card ([page 21](#)). The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart**, **Fishing Chart**, **Perspective 3D**, or **Mariner's Eye 3D**.
3. Select a navaid with the cursor.
 

An option describing the navaid appears, such as **Beacon** or **Light**.
4. Select the name of the navaid (or select **Review** and then the name of the navaid) to view details about the navaid.

## Navigation Chart Appearance

### Changing the Map Orientation

You can set the perspective of the map in the Navigation Chart or the Fishing Chart.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select **Menu**.
4. Select **Chart Setup**.
5. Select **Chart Appearance**.
6. Select **Orientation**.
7. Complete an action:
  - Select **North Up** to set the top of the map to a north heading.
  - Select **Head Up** to set the top of the map according to the heading data received from a heading sensor (also known as magnetic heading) or to use GPS heading data. The heading line appears vertically on the screen.
  - Select **Course Up** to set the map so the direction of navigation is always up.



### Changing the Map Zoom Detail

You can adjust the amount of detail shown on the map, at different zoom levels, for the Navigation Chart or the Fishing Chart.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select **Menu > Chart Setup > Chart Appearance > Detail**.
7. Select a level of detail.

### Selecting a World Map

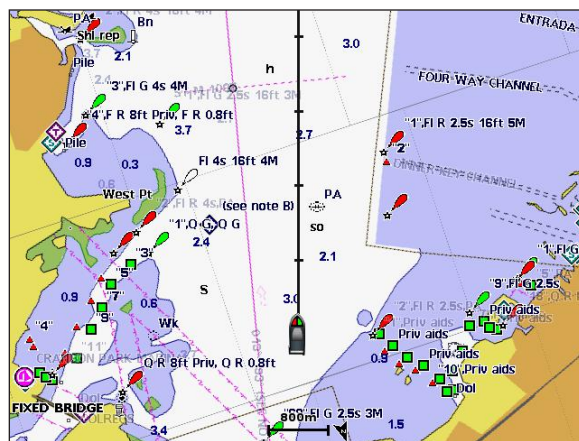
You can use either a basic world map or satellite imagery on the Navigation chart or the Fishing chart.

**NOTE:** The Fishing Chart and satellite imagery are available if you use a BlueChart g2 Vision data card. The basic world map is available on all GPSMAP 4000/5000 series chartplotters.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select **Menu > Chart Setup > Chart Appearance**.
6. Complete an action:
  - Select **World Map > Full** to show satellite imagery on the chart.
  - Select **World Map > Basic** to show basic map data on the chart.

### Showing and Configuring the Heading Line

The heading line is an extension drawn on the map from the bow of the boat in the direction of travel. You can configure the appearance of the heading line for the Navigation Chart, Fishing Chart, or Radar Overlay.



**Heading Line**

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart**, **Fishing Chart**, or **Radar Overlay**.
3. Select **Menu**.
4. Complete an action:
  - Select **Chart Setup > Chart Appearance** on the Navigation Chart or Fishing Chart.
  - Select **Setup > Chart Setup** on the Radar Overlay.
5. Select **Heading Line > Display**.
6. Complete an action:
  - Select **Distance > Change Distance**. Enter the distance to the end of the heading line. Select **Done**.
  - Select **Time > Change Time**. Enter the amount of time until you reach the end of the heading line. Select **Done**.

### Selecting the Heading Line Source

The source for the display of the heading line on the chartplotter is determined by the heading line source setting (**Auto** or **GPS Hdg**) and whether heading information is available from a heading sensor.

- If heading information is available from a heading sensor and the source heading is set to **Auto**, both the heading line and the vehicle icon will be aligned to the heading from the sensor.
- If heading information is available from a heading sensor and the source heading is set to **GPS Hdg**, the heading line will be aligned to the GPS heading, but the vehicle icon will be aligned to the heading from the sensor.
- If heading information is not available from a heading sensor, both the heading line and the vehicle icon will be aligned to the GPS heading.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select **Menu**.
4. Select **Chart Setup**.
5. Select **Chart Appearance > Heading Line > Source**.
6. Complete an action:
  - Select **GPS Hdg**.
  - Select **Auto**.

### Showing and Configuring Spot Depth Soundings

On the Navigation Chart, you can turn on spot soundings and set a dangerous depth.

1. From the Home screen, select **Charts > Navigation Chart > Menu > Chart Setup > Chart Appearance > Spot Depths > On**.
2. Select **Spot Depths > Dangerous**.
3. Enter the dangerous depth.
4. Select **Done**.

### Configuring Depth Shading

You can customize the appearance of depth shading on the Navigation Chart.

**NOTE:** Depth shading is available with a preprogrammed BlueChart g2 or BlueChart g2 Vision data card.

1. From the Home screen, select **Charts > Navigation Chart > Menu > Chart Setup > Chart Appearance > Safety Shading**.
2. Complete an action:
  - Select **Manual** (or **Change Depth**), enter the depth, and select **Done**. Areas on the chart with depths shallower than the specified value are shaded in blue, while areas with depths greater than the specified value are shaded in white. The contour is always drawn at, or deeper than, the selected depth.
  - Select **Auto** to use the depth from the g2 or g2 Vision chart.

### Showing and Configuring Navaid Symbols

You can show and configure the appearance of navaid symbols on the Navigation Chart, Fishing Chart, or Radar Overlay.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Complete an action:
  - Select **Navigation Chart > Menu > Chart Setup > Chart Appearance > Symbols**.
  - Select **Fishing Chart > Menu > Chart Setup > Chart Appearance**.
  - Select **Radar Overlay > Menu > Setup > Chart Setup > Symbols**.
3. Complete an action:
  - Select **Navaid Size** to set the size of the navaid symbols shown on the map. Select a size.
  - Select **Navaid Type > NOAA** to show the NOAA navaid symbol set on the map.
  - Select **Navaid Type > IALA** to show the IALA navaid symbol set on the map.

### Showing Additional Chart Details

You can show land POIs, light sectors, chart borders, and photo points on the Navigation Chart.

1. From the Home screen, select **Charts > Navigation Chart > Menu > Chart Setup > Chart Appearance > Symbols**.
2. Complete an action:
  - Select **Land POIs > On** to show land-based points of interest (POIs).
  - Select **Light Sectors** to show the sector in which a navigational light is visible. Select **On** to show light sectors at all times, or select **Auto** to allow the chartplotter to automatically filter out light sectors depending on the zoom level.
  - Select **Chart Borders > On** to show the area the maps cover when using a BlueChart g2 Vision data card.
  - Select **Photo Points > On** to show camera icons when using a BlueChart g2 Vision data card. This enables you to view aerial photos of landmarks ([page 26](#)).

### Changing the Vehicle Icon

You can select a large, medium, or small boat or triangle as your vehicle icon on the chart.

1. From the Home screen, select **Charts > Navigation Chart > Menu > Chart Setup > Chart Appearance > Symbols > Vehicle Icon**.
2. Select the icon you want to represent your boat on the Navigation Chart and Fishing Chart.

### Showing Marine Service Points

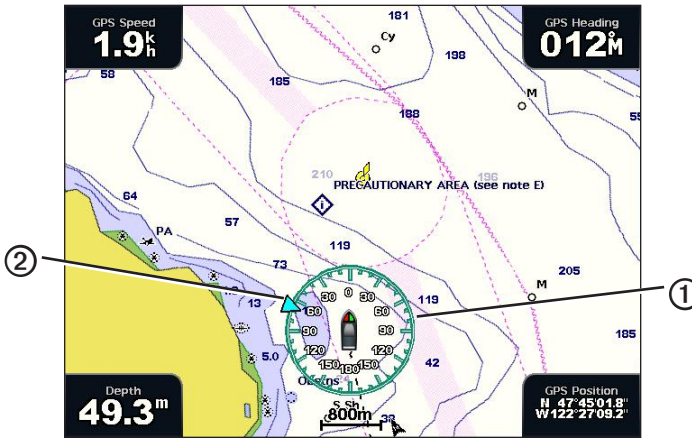
Service points indicate locations where marine maintenance and repair services may be obtained.

From the Home screen, select **Charts > Navigation Chart > Menu > Chart Setup > Service Points > On**.

### Showing and Configuring Roses

On the Navigation Chart or the Fishing Chart, you can show a compass rose ① around your boat, indicating compass direction oriented to the heading of the boat. True wind direction or apparent wind direction appears ② if the chartplotter is connected to a compatible marine wind sensor.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.



1. From the Home screen, select **Charts**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select **Menu > Chart Setup > Roses**.
6. Select a type of rose (**True Wind**, **Apparent Wind**, or **Compass**).

### Showing Other Vessels

See “Configuring the Appearance of Other Vessels” (page 58).

### Showing and Configuring Data Bars

See “Data Bars” (page 56).

### Using Waypoints

See “Waypoints” (page 32).

### Using Tracks

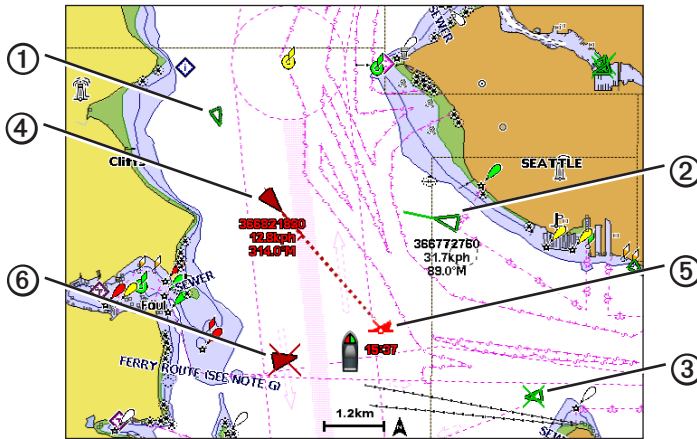
See “Tracks” (page 36).

## Automatic Identification System

The Automatic Identification System (AIS) enables you to identify and track other vessels.

### About AIS

AIS alerts you to area traffic. When connected to an external AIS device, the chartplotter can show some AIS information about other vessels that are within range, that are equipped with a transponder, and that are actively transmitting AIS information. The information reported for each vessel includes the Maritime Mobile Service Identity (MMSI), the location, the GPS speed, the GPS heading, the time that has elapsed since the last position of the vessel was reported, the nearest approach, and the time to the nearest approach.



**AIS Targeting on the Navigation Chart**

### AIS Targeting Symbols

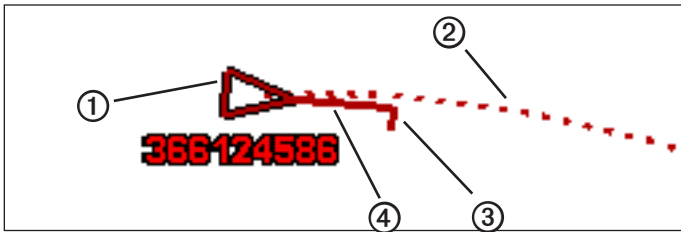
	Symbol	Description
①		AIS vessel. The vessel is reporting AIS information. The direction in which the triangle is pointing indicates the direction in which the AIS vessel is moving.
		AIS target is selected.
②		AIS target is activated. The target appears larger on the chart. A green line attached to the target indicates the heading of the target. The MMSI, speed, and direction of the vessel appear beneath the target if the details setting is set to <b>Show</b> (page 16). If the AIS transmission from the vessel is lost, a message banner appears.
③		AIS target is lost. A green X indicates that the AIS transmission from the vessel is lost, and the chartplotter displays a message banner asking whether the vessel should continue to be tracked. If you discontinue vessel tracking, the lost target symbol disappears from the chart or the 3D chart view.
④		Dangerous AIS target in range. The target flashes while an alarm sounds and a message banner appears. After the alarm has been acknowledged, a solid red triangle with a red line attached to it indicates the location and the heading of the target. If the safe-zone collision alarm is set to <b>Off</b> , the target flashes, but the audible alarm does not sound and the alarm banner does not appear (page 17). If the AIS transmission from the vessel is lost, a message banner appears.
⑤		The location of this symbol indicates the closest point of approach to a dangerous target, and the numbers near the symbol indicate the time to the closest point of approach to that target.
⑥		Dangerous target is lost. A red X indicates that the AIS transmission from the vessel is lost, and the chartplotter displays a message banner asking whether the vessel should continue to be tracked. If you discontinue vessel tracking, the lost dangerous target symbol disappears from the chart or the 3D chart view.

**Heading and Projected Course of Activated AIS Targets**

When heading and course over ground information are provided by an activated AIS target, the heading of the target appears on a chart as a solid line attached to the AIS target symbol. A heading line does not appear on a 3D chart view.

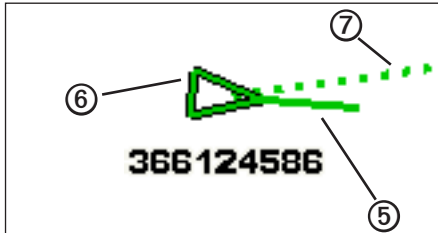
The projected course of an activated AIS target appears as a dashed line on a chart or a 3D chart view. The length of the projected course line is based on the value of the projected heading setting (page 16). If an activated AIS target is not transmitting speed information, or if the vessel is not moving, a projected course line does not appear. Changes in the speed, the course over ground, or the rate-of-turn information transmitted by the vessel can impact the calculation of the projected course line.

When course over ground, heading, and rate of turn information are provided by an activated AIS target ①, the projected course ② of the target is calculated based on the course over ground and the rate of turn information. The direction in which the target is turning, which is also based on the rate of turn information, is indicated by the direction of the barb ③ at the end of the heading line ④. The length of the barb does not change.



**Target with Projected Course, Heading, and Direction of Turn**

When course over ground and heading ⑤ information are provided by an activated AIS target ⑥, but rate of turn information is not provided, the projected course ⑦ of the target is calculated based on the course over ground information.



**Target with Projected Course and Heading**

**Turning Off AIS Reception**

AIS signal reception is turned on by default.

From the Home screen, select **Configure > Other Vessels > AIS > Off**.

All AIS functionality on all charts and on all 3D chart views is disabled. This includes AIS vessel targeting and tracking, collision alarms that result from AIS vessel targeting and tracking, and the display of information about AIS vessels.

**Showing AIS and MARPA Vessels on a Chart or on a 3D Chart View**

AIS requires the use of an external AIS device and active transponder signals from other vessels. Mini Automatic Radar Plotting Aid (MARPA) functionality works with radar (page 68).

You can configure how other vessels appear on a chart or on a 3D chart view. The display range and MARPA settings configured for one chart or one 3D chart view are applied only to that chart or to that 3D chart view. The details, projected heading, and trails settings configured for one chart or one 3D chart view are applied to all charts and to all 3D chart views.

**NOTE:** The Mariner’s Eye 3D chart view is available if you use a BlueChart g2 Vision data card. The Fishing chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.



1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, Mariner's Eye 3D, or Radar Overlay**.
3. Select **Menu > Other Vessels > Display Setup**.
4. Complete an action:
  - Select **Display Range** to indicate the distance from your location within which AIS vessels appear. Select a distance.
  - Select **MARPA > Show** to show MARPA-tagged vessels.  
**NOTE:** This option is not available for Radar Overlay because you cannot hide MARPA tags on the Radar Overlay screen (page 68).
  - Select **Details > Show** to show details about AIS-activated and MARPA-tagged vessels.
  - Select **Proj. Heading**, enter the projected heading time for AIS-activated and MARPA-tagged vessels, and select **Done**.
  - Select **Trails** to show the tracks of AIS vessels and select the length of the track that appears using a trail.

#### Activating a Target for an AIS Vessel

**NOTE:** The Fishing Chart and Mariner's Eye 3D are available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, Mariner's Eye 3D, or Radar Overlay**.
3. Select an AIS vessel.
4. Select **AIS Vessel > Activate Target**.

#### Viewing Information about a Targeted AIS Vessel

You can view the AIS signal status, MMSI, GPS speed, GPS heading, and other information that is reported about a targeted AIS vessel.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, Mariner's Eye 3D, or Radar Overlay**.
3. Select an AIS vessel.
4. Select **AIS Vessel**.

#### Deactivating a Target for an AIS Vessel

**NOTE:** The Fishing Chart and Mariner's Eye 3D chart view are available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, Mariner's Eye 3D, or Radar Overlay**.
3. Select the AIS vessel.
4. Select **AIS Vessel > Deactivate**.

#### Setting the Safe-zone Collision Alarm

The safe-zone collision alarm is used only with AIS and MARPA. MARPA functionality works with radar (page 68). The safe zone is used for collision avoidance, and can be customized. All safe-zone collision alarm settings are applied to all charts, to all 3D chart views, to all radar modes, and to the Radar Overlay.

**NOTE:** The safe-zone collision alarm is automatically set to **On** every time you turn your chartplotter on.

1. From the Home screen, select **Configure > Other Vessels > Collision Alarm > On**.  
A message banner appears and an alarm sounds when a MARPA-tagged object or an AIS-activated vessel enters the safe-zone ring around your boat. The object is also labeled as dangerous on the screen. The **Off** setting disables the message banner and the audible alarm, but the object is still labeled as dangerous on the screen.
2. Select **Range** to set the measured radius of the safe-zone ring to a specified distance from 500 ft. to 2.0 nm (or from 150 m to 3.0 km, or from 500 ft. to 2.0 mi.).
3. Select a distance.

4. Select **Time To** to sound an alarm if AIS or MARPA determines that a target will intersect the safe zone within the defined time interval (ranging from 1 to 24 minutes).
5. Select a time.

**Viewing a List of AIS and MARPA Threats**

**NOTE:** The Mariner’s Eye 3D chart view is available if you use a BlueChart g2 Vision data card. The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, Mariner’s Eye 3D, or Radar Overlay**.
3. Select **Menu > Other Vessels > List > Show**.
4. Select the type of threats to include in the list (**All Threats, AIS threats only, or MARPA threats only**).

**Making a Call to an AIS Target**

See “Making an Individual Routine Call to an AIS Target (page 100).

**About AIS Search and Rescue Transmitters**





AIS Search and Rescue Transmitters (AIS-SART, or SART) are self-contained devices that transmit emergency position reports when activated. SART transmissions are different than standard AIS transmissions, so they appear differently on the chartplotter. Instead of tracking a SART transmission for collision avoidance, you track a SART transmission to locate and assist a vessel.

**Navigating to a SART Transmission**

When you receive a SART transmission, a distress signal alarm appears.

Select **Review > Go To** to begin navigation to the SART transmission.

**AIS-SART Targeting Symbols**

Symbol	Description
	AIS-SART transmission. You can select this symbol to see more information about the SART transmission and begin navigation.
	AIS-SART transmission lost.
	AIS-SART transmission test. This symbol appears when a vessel initiates a test of their SART device, and does not represent a true emergency. You can disable these test symbols and alerts.
	AIS-SART transmission test lost.

**Enabling AIS-SART Transmission Test Alerts**

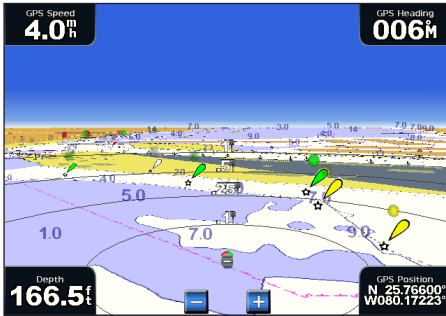
In order to avoid a large number of test alerts and symbols in crowded areas such as marinas, AIS-SART test alerts ignored by default. To test an AIS SART device, you must enable the chartplotter to receive test alerts.

From the Home screen, select **Configure > Other Vessels > AIS SART Test**.

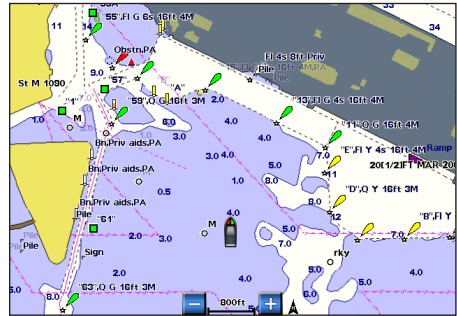
## Perspective 3D

Perspective 3D provides a view from above and behind the boat (according to your course) and provides a visual navigation aid. This view is helpful when navigating tricky shoals, reefs, bridges, or channels, and is beneficial when trying to identify entry and exit routes in unfamiliar harbors or anchorages.

From the Home screen, select **Charts > Perspective 3D**.



Perspective 3D



Navigation Chart

### Adjusting the View

- Move the view closer to your boat and lower to the water:
  - For the GPSMAP 4000 series, press the **Range (+)** key.
  - For the GPSMAP 5000 series, touch the **+** button.
- Move the view away from the boat:
  - For the GPSMAP 4000 series, press the **Range (-)** key.
  - For the GPSMAP 5000 series, touch the **-** button.

The scale (**39%**) is momentarily indicated at the bottom of the screen.

### Rotating the Perspective 3D, Mariner's Eye 3D, or Fish Eye 3D Views

You can rotate around your present location on the Perspective 3D, Mariner's Eye 3D, or Fish Eye 3D chart views.

**NOTE:** Mariner's Eye 3D and Fish Eye 3D Chart views are available only if you use a BlueChart g2 Vision data card (page 21).

1. From the Home screen, select **Charts**.
2. Select **Mariner's Eye 3D**, **Perspective 3D**, or **Fish Eye 3D**.
3. Complete an action:
  - For the GPSMAP 4000 Series, press the **Rocker** left or right to rotate the 3D view.
  - For the GPSMAP 5000 Series, touch and drag the Navigation screen to the left or right to rotate the 3D view.
4. Select **Stop Panning** to stop rotating and return the screen to your present location.

### Perspective 3D Chart Appearance

#### Showing Range Rings

The range rings help you to visualize distances on Perspective 3D or Mariner's Eye 3D.

**NOTE:** Mariner's Eye 3D is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Charts**.
2. Select **Perspective 3D** or **Mariner's Eye 3D**.
3. Select **Menu > Chart Appearance > Range Rings > On**.

### Selecting a Lane Width

You can indicate the width of the navigation lane appearing in Perspective 3D or Mariner's Eye 3D.

**NOTE:** Mariner's Eye 3D is available with a preprogrammed BlueChart g2 Vision data card.

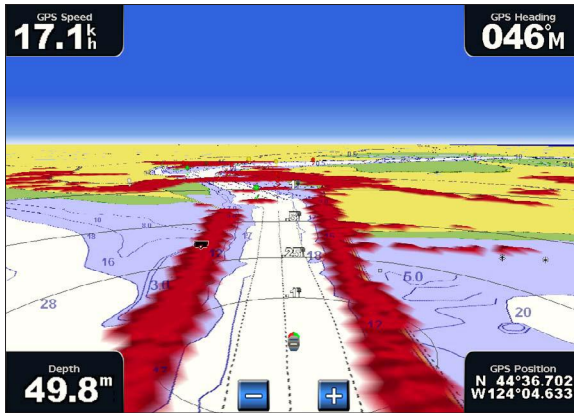
1. From the Home screen, select **Charts**.
2. Select **Perspective 3D** or **Mariner's Eye 3D**.
3. Select **Menu > Chart Appearance > Lane Width**.
4. Enter the width.
5. Select **Done**.

### Showing Surface Radar

The chartplotter must be connected to a marine radar to show surface radar.

You can show radar returns from the surface of the water in Perspective 3D or Mariner's Eye 3D.

**NOTE:** Mariner's Eye 3D is available with a preprogrammed BlueChart g2 Vision data card.



**Perspective 3D with Surface Radar Information**

1. From the Home screen, select **Charts**.
2. Select **Perspective 3D** or **Mariner's Eye 3D**.
3. Select **Menu > Surface Radar > On**.

### Showing Other Vessels

See “Configuring the Appearance of Other Vessels” ([page 58](#)).

### Showing and Configuring Data Bars

See “Data Bars” ([page 56](#)).

### Using Waypoints and Tracks

See “Waypoints” ([page 32](#)) or “Tracks” ([page 36](#)).

## Radar Overlay

When you connect your chartplotter to an optional Garmin marine radar, you can use Radar Overlay to overlay radar information on the Navigation Chart or on the Fishing Chart ([page 73](#)).

## BlueChart g2 Vision

An optional, preprogrammed BlueChart g2 Vision data card allows you to get the most out of your chartplotter. In addition to detailed marine charting, BlueChart g2 Vision has the following features:

Heading	Description
Mariner's Eye 3D	Provides a view from above and behind the boat for a three-dimensional navigation aid. The BlueChart g2 Vision Mariner's Eye 3D is more detailed than the pre-loaded data ( <a href="#">page 22</a> ).
Fish Eye 3D	Provides an underwater, three-dimensional view that visually represents the sea floor according to the information on the chart ( <a href="#">page 23</a> ).
Fishing Charts	Shows the chart with enhanced bottom contours and without navigational data. This chart works well for offshore deep-sea fishing ( <a href="#">page 24</a> ).
High Resolution Satellite Imagery	Provides high-resolution satellite images for a realistic view of the land and water on the Navigation chart ( <a href="#">page 25</a> ).
Aerial Photos	Shows marinas and other navigationally significant aerial photos to help you visualize your surroundings ( <a href="#">page 26</a> ).
Detailed Roads and POI data	Shows roads, restaurants, and other points of interest (POIs) along the shore ( <a href="#">page 26</a> ).
Auto Guidance	Uses specified safe depth, safe height, and chart data to determine the best course to your destination ( <a href="#">page 26</a> ).

## BlueChart g2 Vision data cards

### NOTICE

BlueChart g2 Vision data cards are not waterproof. When you are not using the card, keep it in the original packaging for safekeeping and store it away from exposure to sun and rain to prevent damage to the card.

BlueChart g2 Vision data cards are susceptible to damage from static electricity. In low-humidity environments, you should ground yourself on a large metal object before handling the card to prevent damage to the card.

You can share BlueChart g2 Vision cartography data from an Data card inserted in one GPSMAP 4000 or GPSMAP 5000 series chartplotter with every GPSMAP 4000 series, 5000 series, 4000 series, and 5000 series chartplotter connected to the Garmin Marine Network ([page 104](#)). BlueChart g2 Vision cartography is compatible only with GPSMAP 4000 series and later chartplotters. Previous Garmin Marine Network-compatible chartplotter models (such as the GPSMAP 3000 Series) can be connected to your network, but they cannot share BlueChart g2 Vision data.

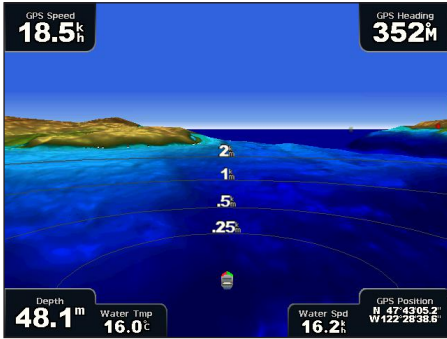
You cannot transfer BlueChart g2 Vision data from the Data card to your computer for backup or viewing purposes. You can use the Data card only on BlueChart g2 Vision-compatible Garmin GPS units or Garmin HomePort™.

You can insert or remove a BlueChart g2 Vision data card while your chartplotter is on or off ([page 3](#)).

## Mariner's Eye 3D

A BlueChart g2 Vision data card offers Mariner's Eye 3D, which provides a detailed, three-dimensional view from above and behind the boat (according to your course) and provides a visual navigation aid. This view is helpful when navigating tricky shoals, reefs, bridges, or channels, and when trying to identify entry and exit routes in unfamiliar harbors or anchorages.

From the Home screen, select **Charts > Mariner's Eye 3D**.



Mariner's Eye 3D with Range Rings



Navigation Chart

### Adjusting the View

See “Adjusting the View” (page 19).

### Viewing Details about Nav aids

See “Viewing Details about Nav aids” (page 10).

### Mariner's Eye 3D Chart Appearance

#### Customizing the Appearance of 3D Terrain

You can select how chart data appears over 3D terrain.

1. From the Home screen, select **Charts > Mariner's Eye 3D > Menu > Chart Appearance > Style**.
2. Complete an action:
  - Select **Classic** to use color schemes to indicate 3D terrain.
  - Select **Charts** to provide chart information in a 3D view.
  - Select **Photos** to provide satellite imagery and chart information in a 3D view.

#### Showing or Hiding Hazard Colors

1. From the Home screen, select **Charts > Mariner's Eye 3D > Menu > Chart Appearance > Hazard Colors**.
2. Complete an action:
  - Select **On** to view shallow water and land with a color scale. Blue indicates deep water, yellow is shallow water, and red is very shallow water.
  - Select **Off** to view the land as seen from the water.



Mariner's Eye 3D, Hazard Colors Off



Mariner's Eye 3D, Hazard Colors On



### Showing Range Rings

See “Showing Range Rings” (page 19).

### Selecting a Safe Depth Appearance

You can set the appearance of a safe depth for Mariner’s Eye 3D.

**NOTE:** This setting affects only the appearance of hazard colors in Mariner’s Eye 3D. It does not effect the safe water depth Auto Guidance setting (page 53) or the sonar shallow water alarm setting (page 94).

1. From the Home screen, select **Charts > Mariner’s Eye 3D > Menu > Chart Appearance > Safe Depth**.
2. Enter the depth.
3. Select **Done**.

### Selecting a Lane Width

See “Selecting a Lane Width” (page 20).

### Showing Other Vessels

See “Configuring the Appearance of Other Vessels” (page 58).

### Showing Surface Radar

See “Showing Surface Radar” (page 20).

### Showing and Configuring Data Bars

See “Data Bars” (page 56).

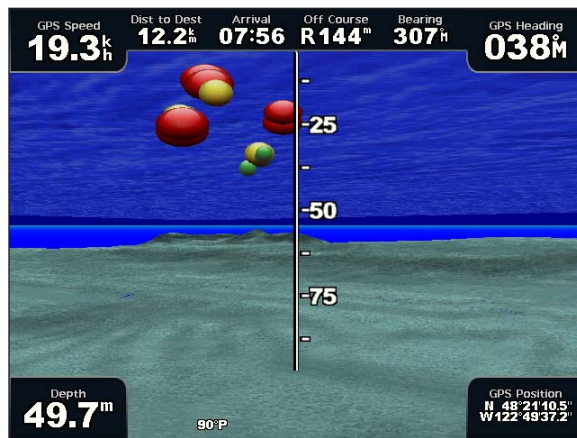
### Using Waypoints and Tracks

See “Waypoints” (page 32) or “Tracks” (page 36).

## Fish Eye 3D

Using the depth contour lines of the BlueChart g2 Vision cartography, Fish Eye 3D provides an underwater view of the sea floor or lake bottom.

Suspended targets (such as fish) are indicated by red, green, and yellow spheres. Red indicates the largest targets and green indicates the smallest.



Fish Eye 3D

### Adjusting the View

See “Adjusting the View” (page 19).

## Fish Eye 3D Chart Appearance

### Indicating the Direction of the Fish Eye 3D Chart View

1. From the Home screen, select **Charts > Fish Eye 3D > Menu > View**.
2. Select **Fore, Aft, Port, or Starboard**.

### Showing a Sonar Cone on the Chart

You can show a cone that indicates the area covered by your transducer.

From the Home screen, select **Charts > Fish Eye 3D > Menu > Sonar Cone > On**.

### Showing Suspended Targets

From the Home screen, select **Charts > Fish Eye 3D > Menu > Fish Symbols > On**.

### Showing Tracks

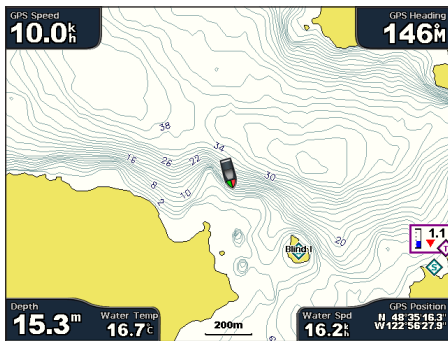
From the Home screen, select **Charts > Fish Eye 3D > Menu > Tracks > On**.

### Showing Data Bars

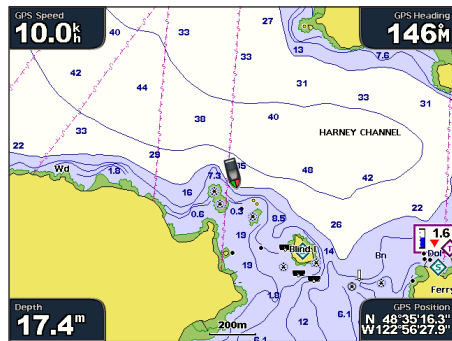
See “Data Bars” (page 56).

## Fishing Chart

Use the Fishing Chart for a detailed view of the bottom contours and depth soundings on the chart.



**Fishing Chart**



**Navigation Chart**

The Fishing Chart uses detailed bathymetric data on a preprogrammed BlueChart g2 Vision data card, and is best for offshore deep-sea fishing.

## Fishing Chart Appearance

### Using Waypoints

See “Waypoints” (page 32).

### Using Tracks

See “Tracks” (page 36).

### Showing Other Vessels

See “Configuring the Appearance of Other Vessels” (page 58).

### Showing Nav aids

From the Home screen, select **Charts > Fishing Chart > Menu > Nav aids > On**.

### Showing Data Bars

See “Data Bars” (page 56).

## Showing Satellite Imagery on the Navigation Chart

You can overlay high-resolution satellite images on the land, on the sea, or on both portions of the Navigation Chart when using a preprogrammed BlueChart g2 Vision data card.

**NOTE:** When enabled, high-resolution satellite images are present only at lower zoom levels. If you cannot see the high-resolution images in your BlueChart g2 Vision region, you can zoom in further by selecting the **Range (+)** key (GPSMAP 4000 series) or the **+** button (GPSMAP 5000 series). You also can set the detail level higher by changing the map zoom detail ([page 11](#)).

1. From the Home screen, select **Navigation Chart > Menu > Chart Setup > Photos**.
2. Complete an action:
  - Select **Land Only** to show standard chart information on the water, with photos overlaying the land.
  - Select **Photo Map** to show photos on both the water and the land at a specified opacity. Select and hold **Up** or **Down** to adjust the photo opacity. The higher you set the percentage, the more the satellite photos cover both land and water.

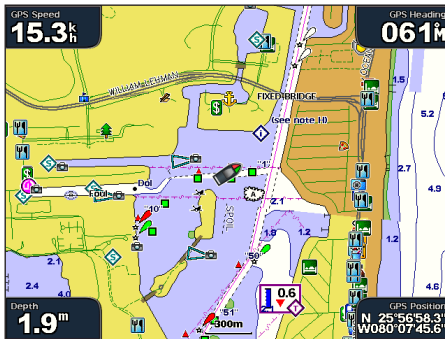
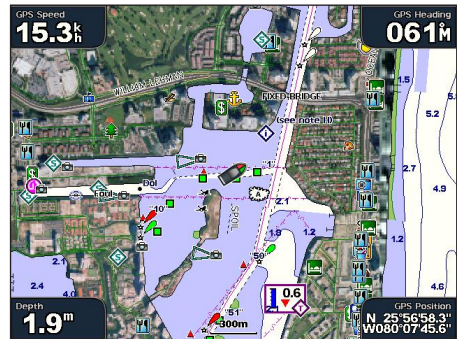


Photo Overlay Off



Land Only Photo Overlay

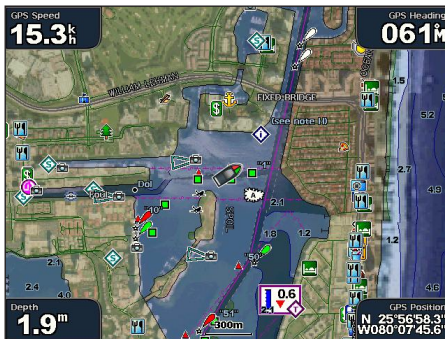


Photo Map at 50%

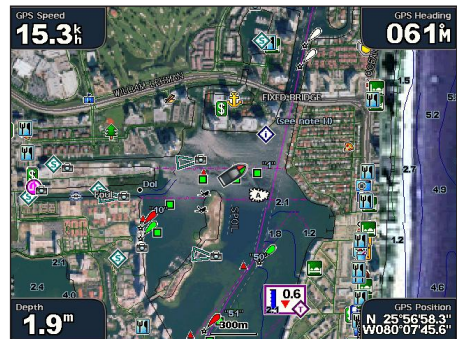






Photo Map at 100%

## Viewing Aerial Photos of Landmarks

Before you can view aerial photos on the Navigation Chart, you must turn on the Photo Points setting ([page 13](#)).

Preprogrammed BlueChart g2 Vision data cards contain aerial photographs of many landmarks, marinas, and harbors. Use these photos to help orient yourself to your surroundings or to acquaint yourself with a marina or a harbor prior to arrival.

1. From the Home screen, select **Charts > Navigation Chart**.
2. Select a camera icon.
  - A standard camera icon () indicates an overhead photo.
  - A camera icon with a cone () indicates a perspective photo. The photo was taken from the location of the camera, pointed in the direction of the cone.
3. Select **Review > Aerial Photo**.

**NOTE:** Press the **Range (-/+)** keys (GPSMAP 4000 series) or touch  or  (GPSMAP 5000 series), to zoom out and in while viewing the aerial photo on the full screen.

## Animated Tide and Current Indicators




You can view indicators for animated tide station and current direction on the Navigation Chart or the Fishing Chart. To do so, tide station and current direction information must be available in your preloaded map or BlueChart g2 Vision region. You must also select the Animated value for the Tides/Currents setting ([page 10](#)).

An indicator for a tide station appears on the chart as a vertical bar graph with an arrow. A red arrow pointing downward indicates a falling tide, and a blue arrow pointing upward indicates a rising tide. When you move the cursor over the tide station indicator, the height of the tide at the station appears above the station indicator.



**Tide Station with Falling Tide**

Current direction indicators appear as arrows on the chart. The direction of each arrow indicates the direction of the current at a specific location on the chart. The color of the current arrow indicates the range of speed of the current at that location. When you move the cursor over the current direction indicator, the specific speed of the current at the location appears above the direction indicator.

Direction Indicator	Color	Current Speed Range
	Yellow	0 to 1 knot
	Orange	1 to 2 knots
	Red	2 or more knots

## Viewing Current Station Information

See “Current Information” ([page 43](#)).

## Detailed Road and Point of Interest Data

BlueChart g2 Vision contains detailed road and point of interest (POI) data, which includes highly detailed coastal roads and points of interest (POIs) such as restaurants, lodging, local attractions, and more.

## Searching for, and Navigating to, POIs

See “Where To?” ([page 39](#)).

## Auto Guidance

Auto Guidance automatically creates and suggests the best path to a destination, based on available BlueChart g2 Vision chart information. Auto Guidance is available when you navigate to a destination using Guide To ([page 32](#)).

## Configuring Auto Guidance Settings

See “Auto Guidance Line Configurations” ([page 53](#)).

# Combinations

## About the Combinations Screen

The Combinations screen shows a combination of different screens at the same time. The number of options available on the Combinations screen depends on the optional network devices you have connected to your chartplotter, and whether you are using an optional BlueChart g2 Vision data card. You can combine up to three screens in the GPSMAP 4000 series and up to four screens in the GPSMAP 5000 series.

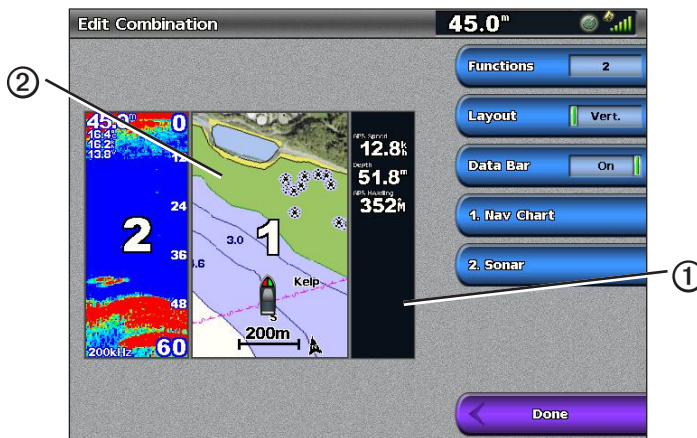
## Combinations Screen Configuration

### Selecting a Combination

1. From the Home screen, select **Combinations**.
2. Select a combination.


### Customizing the Combinations Screen

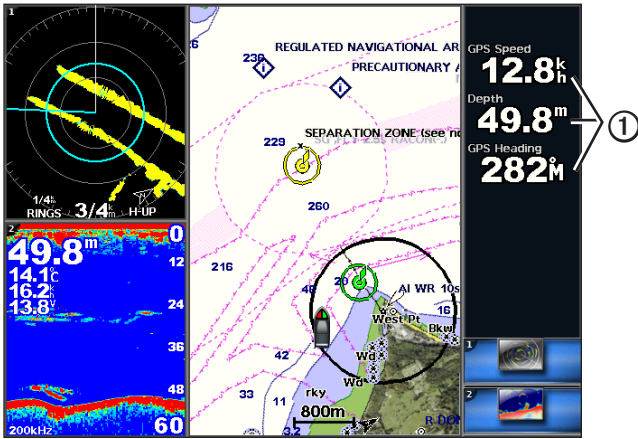
1. From the Home screen, select **Combinations**.
2. Select a combination.
3. Select **Menu > Change Combination**.
4. Complete an action:
  - Select **Functions** to select the number of combination screens. Select a number.
  - Select **Layout > Vert.** to arrange the screens in a vertical layout.
  - Select **Layout > Horiz.** to arrange the screens in a horizontal layout.
  - Select **Data Bar > On** to show the vertical bar ① that contains the data fields.
  - Select a numbered option, such as **1. Nav Chart** or **2. Sonar** in the image below, to change the type of information shown in the corresponding screen ②.
5. Select **Done**.



### Combination Screen Data Fields


Data fields can appear on combination screens, and they provide real-time, at-a-glance information. The data field overlay for each combination can be configured separately.

Several combination screen data overlays are available. You can select the data fields  to be shown within each data overlay.

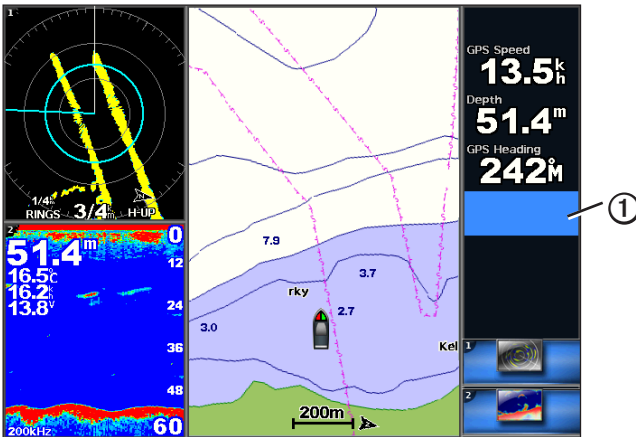


### Adding a Data Field

The Combinations screen can display up to six data fields in the GPSMAP 4000 series, and up to eight data fields in the GPSMAP 5000 series.

1. From the Home screen, select **Combinations**.
2. Select a combination.
3. Select an unused data field .
4. Select the type of data shown in the field.

Available data options vary, based on the chartplotter and network configuration.



### Removing a Data Field

1. From the Home screen, select **Combinations**.
2. Select a combination.
3. Select a data field that contains data.
4. Select **None**.



## Editing a Data Field

1. From the Home screen, select **Combinations**.
2. Select a combination.
3. Select a data field.
4. Select the type of data shown in the field.

Available data options vary based on the chartplotter and network configuration.

## Viewing Instrumentation Data

You can view engine gauges or fuel gauges in a combinations screen.

1. From the Home screen, select **Combinations**.
2. Select a combination.
3. Select **Menu > Change Combination**.
4. Select a numbered option.
5. Complete an action to show gauges in a combinations screen:
  - Select **Instrumentation > Engine > Done** to show engine gauges.
  - Select **Instrumentation > Fuel > Done** to show fuel gauges.

## Cycling Through Instrumentation Screens

1. From the Home screen, select **Combinations**.
2. Select a combination that contains a screen with instrumentation data.
3. Complete an action:
  - For the GPSMAP 4000 series, select the icon in the lower-right corner that represents the gauge screen you want to cycle through.
  - For the GPSMAP 5000 series, select the left and right arrows beneath the gauge.

The chartplotter displays the next fuel gauge screen or engine gauge screen.

4. Repeat step 3 to cycle through all the gauge screens.

## Customizing Instrumentation Data

See “Engine Gauges” (page 47) or “Fuel Gauges” (page 49).

## Focusing on a Screen

The largest screen in a combinations screen is called the focus screen. In the GPSMAP 4000 series, you can switch the content that appears in the focus screen.

1. From the Home screen, select **Combinations**.
2. Select a combination.
3. Select the icon ① in the lower-right corner that represents the screen you want to view in the focus screen.





## Using Full-screen View

You can view the content of any combination screen on the full chartplotter screen.

1. From the Home screen, select **Combinations**.
2. Select a combination.
3. For the GPSMAP 4000 series, ensure that the combination screen you want to view on the full chartplotter screen is in the focus screen. If it is not, select the icon in the lower-right corner that represents the screen you want to view on the full chartplotter screen.
4. Complete an action to view the full chartplotter screen:
  - For the GPSMAP 4000 series, use the **Rocker** to pan the focus screen.
  - For the GPSMAP 5000 series, touch a combination screen.
5. Complete an action to return to the Combinations screen:
  - From a Radar screen, select **Stop Pointing**.
  - From a chart screen, select **Stop Panning**.
  - From a sonar or video screen, select **Back**.
  - From a gauges screen, perform one of the following:
    - For the GPSMAP 4000 series, select **Back**.
    - For the GPSMAP 5000 series, touch the instrument screen.

# Navigation

## Basic Navigation Questions

Question	Answer
How do I make the chartplotter point me in the direction in which I want to go (bearing)?	Navigate using Go To. See “Setting and following a Direct Course Using Go To” (page 32).
How do I make the chartplotter guide me along a straight line (minimizing cross track) to a location using the shortest distance from the present location?	Build a single-leg route and navigate it using Route To (page 34).
How do I make the chartplotter guide me to a location while avoiding obstacles?	Build a multi-leg route and navigate it using Route To. See “Creating and Navigating a Route from Your Present Location” (page 34).
How do I make the chartplotter steer my automatic pilot?	Navigate using Route To (page 34). Note: To navigate a route created by the Auto Guidance feature with an automatic pilot, your chartplotter must be connected to a Garmin GHP series automatic pilot over a NMEA 2000 network.
Can the chartplotter create a path for me?	If you have a BlueChart g2 Vision data card, navigate using Auto Guidance. See “Setting and Following a Course Using Auto Guidance” (page 32).
How do I change the Auto Guidance settings for my boat?	See “Auto Guidance Line Configurations” (page 53)

## Navigation with a Chartplotter

To navigate using a GPSMAP 4000 or 5000 series chartplotter, you must first choose a destination, set a course or create a route, and follow the course or route. You can follow the course or the route on the Navigation Chart, the Fishing Chart, Perspective 3D, or Mariner’s Eye 3D.

**NOTE:** The Mariner’s Eye 3D chart view is available if you use a BlueChart g2 Vision data card. The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

### Destinations

You can select destinations using the Navigation Chart or the Fishing Chart, or you can select a destination using the Where To? feature.

#### Selecting a Destination Using the Navigation Chart

1. From the Home screen, select **Charts > Navigation Chart**.
2. Select the destination to which you want to navigate.

#### Selecting a Destination Using Where To?

1. From the Home screen, select **Where To?**
2. Complete an action:
  - Select **Waypoints** to view a list of preloaded locations and locations you marked previously (page 32).
  - Select **Routes** to view a list of routes you saved previously (page 33).
  - Select **Tracks** to view a list of recorded tracks (page 36).
  - Select **Offshore Services** to view a list of marinas and other offshore points of interest, listed by name (page 39).
  - Select **Search by Name** to search waypoints, routes, tracks, and offshore points of interest by name (page 40).
3. Select a destination.

### Courses

You can set and follow a course to a destination using one of three methods: Go To, Route To, or Guide To.

- **Go To**—takes you directly to the destination.
- **Route To**—creates a route from your location to a destination, allowing you to add turns along the way.

- **Guide To**—uses BlueChart g2 Vision Chart data to suggest the best path to your destination using Auto Guidance. You must be using a BlueChart g2 Vision data card for this option to appear.

### Setting and Following a Direct Course Using Go To

#### CAUTION

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings and steer to avoid land, shallow water, and other dangerous objects.

You can set and follow a direct course from your current location to a selected destination.

1. Select a destination using a chart or Where To? (page 31).
2. Select **Navigate To > Go To**.

A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your current location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.

3. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

**NOTE:** If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

### Creating and Following a New Route Using Route To

See “Creating and Navigating a Route from Your Present Location” (page 34).

### Following a Saved Route Using Route To

See “Browsing for and Navigating a Saved Route” (page 40).

### Setting and Following a Course Using Auto Guidance

#### CAUTION

The Auto Guidance feature of the BlueChart g2 Vision data card is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings and avoid any land, shallow water, or other obstacles that may be in your path.

1. Select a destination using a chart or Where To? (page 31).
2. Select **Navigate To > Guide To**.
3. Review the course indicated by the magenta Auto Guidance line.

**NOTE:** A gray line within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the minimum safe water depth and the minimum safe obstacle height settings (page 53).

4. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

## Waypoints

You can store up to 5000 waypoints with a user-defined name, symbol, depth, water temperature, and comment for each waypoint.

### Marking Your Present Location as a Waypoint

Complete an action:

- For the GPSMAP 4000 series, select **Mark** on any screen.
- For the GPSMAP 5000 series, touch **Mark** at the top of the screen.

### Creating a Waypoint at a Different Location

1. From the Home screen, select **Information > User Data > Waypoints > New Waypoint**.
2. Indicate the location of the waypoint:
  - Select **Use Chart** to move the waypoint while viewing a chart. Select **Select**.
  - Select **Enter Position** to move the waypoint using coordinates. Select **Done**.
3. If necessary, you can name the waypoint and provide other information about it. Select the waypoint on the right side of the screen and select Edit Waypoint.
  - Select **Name**. Select **Done**.
  - Select **Symbol**. Select a new symbol.

- Select **Depth**. Select **Done**.
- Select **Water Temp**. Select **Done**.
- Select **Comment**. Select **Done**.

### Marking and Navigating to an MOB Location

When you mark a waypoint, you can designate it as a man-overboard (MOB) location.

From any screen, select **Mark > Man Overboard**.

An international MOB symbol marks the active MOB point and the chartplotter sets a course back to the marked location using the Go To feature.

### Viewing a List of all Waypoints

From the Home screen, select **Information > User Data > Waypoints**.

### Editing a Saved Waypoint

1. From the Home screen, select **Information > User Data > Waypoints**.
2. Select a waypoint.
3. Select **Review > Edit**.
4. Select an option:
  - Select **Name**. Select **Done**.
  - Select **Symbol**. Select a new symbol.
  - Select **Depth**. Select **Done**.
  - Select **Water Temp**. Select **Done**.
  - Select **Comment**. Select **Done**.

### Creating a New Waypoint from the Waypoints List

1. From the Home screen, select **Information > User Data > Waypoints List > New Waypoint**.
2. Complete an action:
  - Select **Enter Coordinates** to create a new waypoint by entering grid coordinates.
  - Select **Use Chart** to select a new waypoint on the chart.
  - Select **Use Current Position** to create a new waypoint at your present location.

### Moving a Saved Waypoint

1. From the Home screen, select **Information > User Data > Waypoints**.
2. Select a waypoint.
3. Select **Review > Move**.
4. Indicate a new location for the waypoint:
  - Select **Use Chart** to move the waypoint while viewing a chart. Select **Move Waypoint**.
  - Select **Enter Position** to move the waypoint using coordinates. Select **Done**.

### Deleting a Waypoint or an MOB

You can delete a waypoint or an MOB that has been saved.

1. From the Home screen, select **Information > User Data > Waypoints**.
2. Select a waypoint or an MOB.
3. Select **Review > Delete**.

### Deleting All Waypoints

From the Home screen, select **Information > User Data > Clear User Data > Waypoints > All**.

### Copying Waypoints

See “Chartplotter Data Management” (page 60).

## Routes

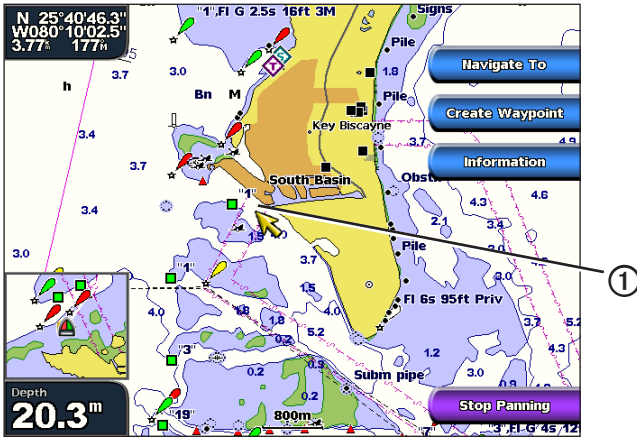
You can create and save up to 20 routes. Each route can contain up to 250 waypoints.

### Creating and Navigating a Route from Your Present Location

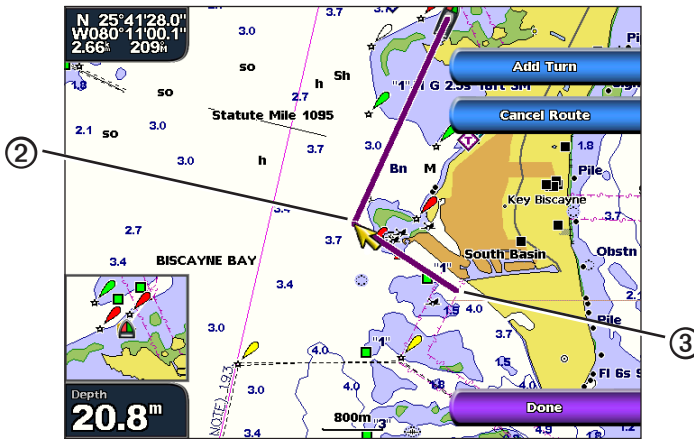
You can create and immediately navigate a route on the Navigation Chart or the Fishing Chart. This procedure does not save the route or the waypoint data.

**NOTE:** The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Chart**.
2. Select **Navigation Chart** or **Fishing Chart**.
3. Select a destination **①** using the cursor.



4. Select **Navigate To > Route To**.
5. Select the location **②** where you want to make the last turn toward your destination **③**.
6. Select **Add Turn**.



7. If necessary, repeat steps 5 and 6 to add additional turns, working backward from the destination to the present location of your boat.

The last turn you add should be where you want to make the first turn from your present location. It should be the turn that is closest to your boat.

8. Select **Done** when the route is complete.

**NOTE:** If you move the cursor after selecting the last turn but before selecting **Done**, an additional turn will be added to the route.

9. Review the course indicated by the magenta line.
10. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

When you have reached the destination, you are prompted to save the route.

11. Complete an action:

- Select **No**.
- Select **Yes > Edit Route > Name**. Enter the name of the route. Select **Done**.

### Creating and Saving a Route

This procedure saves the route and all the waypoints in it. The starting point can be your present location or another location.

1. From the Home screen, select **Information > User Data > Routes > New Route**.
2. Select the starting point ① of the route:
  - Select **Use Chart**. Select a location on the chart.
  - Select **Use Waypoint List** and select a saved waypoint.



3. Select **Add Turn** to mark the starting point of the route.
4. Select the location where you want to make the next turn ②:
  - Select **Use Chart**. Select a location on the chart.
  - Select **Use Waypoint List** and select a saved waypoint.
5. Select **Add Turn**.  
The chartplotter marks the position of the turn with a waypoint.
6. If necessary, repeat steps 4 and 5 to add additional turns.
7. Select the final destination ③:
  - Select **Use Chart**. Select a location on the chart.
  - Select **Use Waypoint List** and select a saved waypoint.



8. Select **Done**.

## Viewing a List of Saved Routes

From the Home screen, select **Information > User Data > Routes**.

## Editing a Saved Route

You can change the name of a route, or change the turns the route contains.

1. From the Home screen, select **Information > User Data > Routes**.
2. Select the route to edit.
3. Select **Review > Edit Route**.
4. Complete an action:
  - Select **Name**. Enter the name. Select **Done**.
  - Select **Edit Turns > Use Chart**. Select the turn on the chart. Select **Edit Turn > Move Turn**. Select a new turn location on the chart. Select **Add Turn > Done**.
  - Select **Edit Turns > Use Turn List**. Select a waypoint from the list. Select **Review > Move > Enter Position**. Enter a new turn location. Select **Done**.

## Deleting a Saved Route

1. From the Home screen, select **Information > User Data > Routes**.
2. Select a route.
3. Select **Review > Delete**.

## Deleting All Saved Routes

From the Home screen, select **Information > User Data > Clear User Data > Routes**.

## Bypassing a Waypoint on a Saved Route

You can begin navigating a saved route from any waypoint in the route.

1. From the Home screen, select **Where To? > Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Complete an action:
  - Select **Forward** to navigate the route near the starting point that was used when the route was created.
  - Select **Backward** to navigate the route near the destination point that was used when the route was created.
  - Select **Offset** to navigate parallel to the route, offset from it by a specific distance ([page 41](#)).
5. Select the waypoint that you want to be the next turn in your route.
6. Select **Route To**.
7. Review the course indicated by the magenta line.
8. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.


## Copying Routes

See “Chartplotter Data Management” ([page 60](#)).

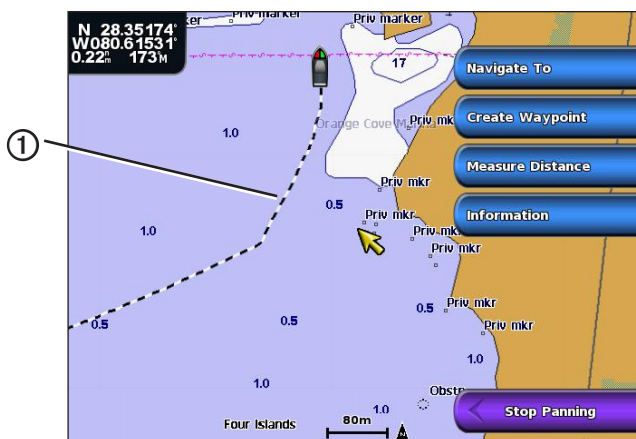
## Tracks

A track is a recording of the path of your boat. The track currently being recorded is called the active track, and it can be saved. You can show tracks in each chart or 3D chart view.

## Showing Tracks

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Waypoints & Tracks > Tracks > On**.  
A trailing line  on the chart indicates your track.





### Setting the Color of the Active Track

You can select the color of your present track.

1. From the Home screen, select **Information** > **User Data** > **Tracks** > **Active Track Options** > **Track Color**.
2. Select a track color.

### Saving the Active Track

The track currently being recorded is called the active track.

1. From the Home screen, select **Information** > **User Data** > **Tracks** > **Save Active Track**.
2. Complete an action:
  - Select the time the current track began or **Midnight**, if shown.
  - Select **Entire Log**.
3. Select **Save**.

### Viewing a List of Saved Tracks

From the Home screen, select **Information** > **User Data** > **Tracks** > **Saved Tracks**.

### Editing a Saved Track

1. From the Home screen, select **Information** > **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Select** > **Edit Track**.
4. Complete an action.
  - Select **Name**. Change the name. Select **Done**.
  - Select **Color** and select a color for the track.

### Saving a Track as a Route

1. From the Home screen, select **Information** > **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Select** > **Edit Track** > **Save Route**.

### Deleting a Saved Track

1. From the Home screen, select **Information** > **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Select** > **Delete**.

### Deleting All Saved Tracks

From the Home screen, select **Information** > **User Data** > **Clear User Data** > **Saved Tracks**.

### Retracing the Active Track

1. From the Home screen, select **Information** > **User Data** > **Tracks** > **Follow Active Track**.
2. Complete an action:

- Select the time the current track began or **Midnight**, if shown.
  - Select **Entire Log**.
3. Select **Follow Track**.
  4. Review the course indicated by the colored line.
  5. Follow the colored line, steering to avoid land, shallow water, and other obstacles.

### Clearing the Active Track

From the Home screen, select **Information > User Data > Tracks > Clear Active Track**.

The track memory is cleared, and the current track continues to be recorded.

### Managing the Track Log Memory During Recording

1. From the Home screen, select **Information > User Data > Tracks > Active Track Options > Record Mode**.
2. Complete an action:
  - Select **Fill** to record a track log until the track memory is full.
  - Select **Wrap** to continuously record a track log, replacing the oldest track data with new data.

### Configuring the Recording Interval of the Track Log

You can indicate the frequency at which the track plot is recorded. Recording more-frequent plots is more accurate but fills the track log faster.

1. From the Home screen, select **Information > User Data > Tracks > Active Track Options > Interval > Interval**.
2. Complete an action:
  - Select **Distance** to record the track based on a distance between points. Select **Change**. Set the distance. Select **Done**.
  - Select **Time** to record the track based on a time interval. Select **Change**. Set the time. Select **Done**.
  - Select **Resolution** to record the track plot based on a variance from your course. Select **Change**. Enter the maximum error allowed from the true course before recording a track point. Select **Done**.
3. Select **Done**.

### Copying Tracks

See “Chartplotter Data Management” (page 60).

### Deleting All Saved Waypoints, Routes, and Tracks

From the Home screen, select **Information > User Data > Clear User Data > All**.

### Navigating with a Garmin Autopilot

When you start navigation (Go To, Route To, or Guide To), if you are connected through a National Marine Electronics Association (NMEA) 2000 network to a compatible Garmin autopilot (such as the GHP™ 10), you are prompted to engage the autopilot.

## Where To?

Use the **Where To?** option on the Home screen to search for and navigate to nearby fuel, repairs, and other services, as well as waypoints and routes that you have created.

### Marine Services Destinations

**NOTE:** This feature may not be available in all areas.

The chartplotter contains information about thousands of destinations offering marine services.

### Navigating to a Marine Services Destination

#### ⚠ CAUTION

The Auto Guidance feature of the BlueChart g2 Vision data card is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings and steer to avoid land, shallow water, and other dangerous objects.

**NOTE:** Auto Guidance is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Where To?** > **Offshore Services**.
2. Select the marine service category to which you want to navigate.

The chartplotter shows a list of the 50 nearest locations and the distance and bearing to each.

3. Select a destination.

**TIP:** Select **Next Page** to view additional information or to show the location on a chart.

4. Select **Navigate To**.

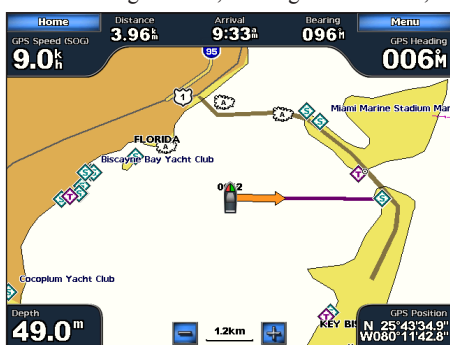
5. Complete an action:

- Select **Go To**.
- Select **Route To**.
- Select **Guide To** to use Auto Guidance.

6. Review the course indicated by the magenta line.

**NOTE:** When using Auto Guidance, a gray line within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the minimum safe water depth and the minimum safe obstacle height settings ([page 53](#)).

7. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.



Go To Screen



Guide To Screen (BlueChart g2 Vision)

### Stopping Navigation

From Home screen, select **Where To?** > **Stop Navigation**.

## Searching for, and Navigating to, a Destination

### CAUTION

The Auto Guidance feature of the BlueChart g2 Vision data card is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings and avoid any land, shallow water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings and steer to avoid land, shallow water, and other dangerous objects.

You can search for saved waypoints, saved routes, saved tracks, and marine services destinations by name.

1. From the Home screen, select **Where To?** > **Search by Name**.
2. Spell at least a portion of the name of your destination.
3. Select **Done**.

The 50 nearest destinations that contain your search criteria appear.

4. Select the location.
5. Select **Navigate To**.
6. Complete an action:
  - Select **Go To**.
  - Select **Route To**.
  - Select **Guide To** to use Auto Guidance.
7. Review the course indicated by the magenta line.

**NOTE:** When using Auto Guidance, a gray line within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the minimum safe water depth and the minimum safe obstacle height settings ([page 53](#)).

8. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

## Browsing for and Navigating to a Saved Waypoint

### CAUTION

The Auto Guidance feature of the BlueChart g2 Vision data card is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings and avoid any land, water, or other obstacles that may be in your path.

When using Go To, a direct course and a corrected course may pass over land or shallow water. Use visual sightings and steer to avoid land, shallow water, and other dangerous objects.

Before you can browse a list of waypoints and navigate to them, you must create and save at least one waypoint ([page 32](#)).

1. From the Home screen, select **Where To?** > **Waypoints**.
2. Select a waypoint.
3. Select **Navigate To**.
4. Complete an action:
  - Select **Go To**.
  - Select **Route To**.
  - Select **Guide To** to use Auto Guidance.
5. Review the course indicated by the magenta line.

**NOTE:** When using Auto Guidance, a gray line within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line due to the minimum safe water depth and the minimum safe obstacle height settings ([page 53](#)).

6. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

## Browsing for and Navigating a Saved Route

Before you can browse a list of routes and navigate to one of them, you must create and save at least one route ([page 35](#)).

1. From the Home screen, select **Where To? > Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Complete an action:
  - Select **Forward** to navigate the route from the starting point used when the route was created.
  - Select **Backward** to navigate the route from the destination point used when the route was created.

A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your current location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
5. Review the course indicated by the magenta line.
6. Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.
 

**NOTE:** If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

### Browsing for and Navigating Parallel to a Saved Route

Before you can browse a list of routes and navigate to one of them, you must create and save at least one route ([page 35](#)).

1. From the Home screen, select **Where To? > Routes**.
2. Select a route.
3. Select **Review > Navigate To**.
4. Select **Offset** to navigate parallel to the route, offset from it by a specific distance.
5. Select **Offset**.
6. Enter the offset distance:
7. Select **Done**.
8. Indicate how to navigate the route:
  - Select **Forward - Port** to navigate the route from the starting point used when the route was created, to the left of original route.
  - Select **Forward - Starboard** to navigate the route from the starting point used when the route was created, to the right of the original route.
  - Select **Backward - Port** to navigate the route from the destination point used when the route was created, to the left of original route.
  - Select **Backward - Starboard** to navigate the route from the destination point used when the route was created, to the right of original route.

A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your current location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
9. Review the course indicated by the magenta line.
10. Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.
 

**NOTE:** If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

### Browsing for and Navigating a Recorded Track

Before you can browse a list of tracks and navigate to them, you must record and save at least one track ([page 37](#)).

1. From the Home screen, select **Where To? > Tracks**.
2. Select a track.
3. Select **Follow Track**.
4. Complete an action:
  - Select **Forward** to navigate the track from the starting point used when the track was created.
  - Select **Backward** to navigate the track from the destination point used when the track was created.
5. Review the course indicated by the colored line.
6. Follow the colored line, steering to avoid land, shallow water, and other obstacles.

# Almanac, Environmental, and On-boat Data

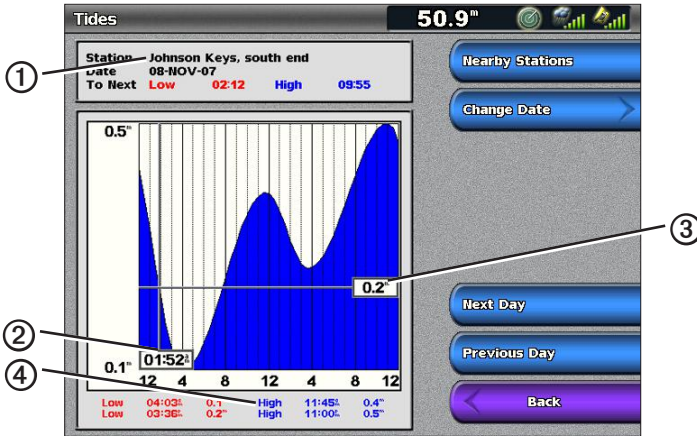
The Information screen displays information about tides, currents, celestial data, gauges, and video.

## Almanac Data

### Tide Station Information

The Tides screen shows information about a tide station ① for a specific date and time ②, including the tide height ③, and when the next high and low tides will occur ④. By default, the chartplotter shows tide information for the most-recently viewed tide station and for the present date and time.

From the Home screen, select **Information > Tides/Currents > Tides**.



Tide Station Information

### Viewing Information about a Nearby Tide Station

1. From the Home screen, select **Information > Tides/Currents > Tides > Nearby Stations**.
2. Select a station.

### Viewing Tide Station Information for a Different Date

You can indicate the date of the tide station information to be viewed.

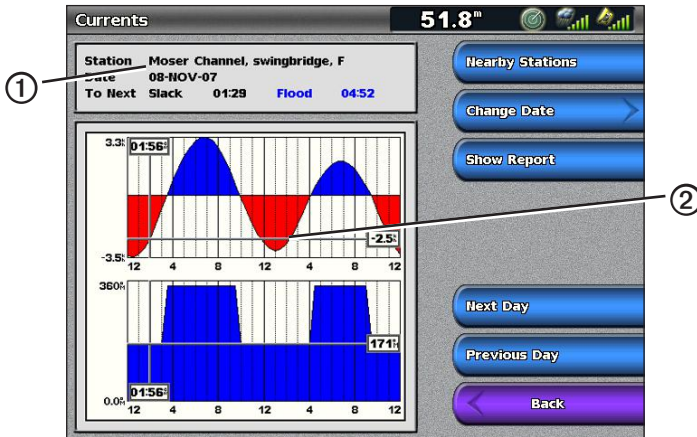
1. From the Home screen, select **Information > Tides/Currents > Tides > Nearby Stations**.
2. Select a station.
3. Complete an action:
  - Select **Change Date** to view tide information for a different date. Enter the date. Select **Done**.
  - Select **Current Date/Time** to view tide information for the current day and time.
  - Select **Next Day** to view tide information for the day after the date shown.
  - Select **Previous Day** to view tide information for the day before the date shown.

## Current Information

**NOTE:** Current station information is available with a BlueChart g2 Vision data card.

The Currents screen shows information about a current station ① for a specific date and time, including the current speed and level ②. By default, the chartplotter shows current information for the most-recently viewed current station and for the present date and time.

From the Home screen, select **Information > Tides/Currents > Currents**.



**Current Station Information**

### Viewing Information about a Nearby Current Station

**NOTE:** Current station information is available with a BlueChart g2 Vision card.

1. From the Home screen, select **Information > Tides/Currents > Currents > Nearby Stations**.
2. Select a station.

### Configuring Current Station Information

You can indicate the date of current station information to be viewed, and you can view the information in a chart or a report format.

**NOTE:** Current station information is available with a BlueChart g2 Vision data card.

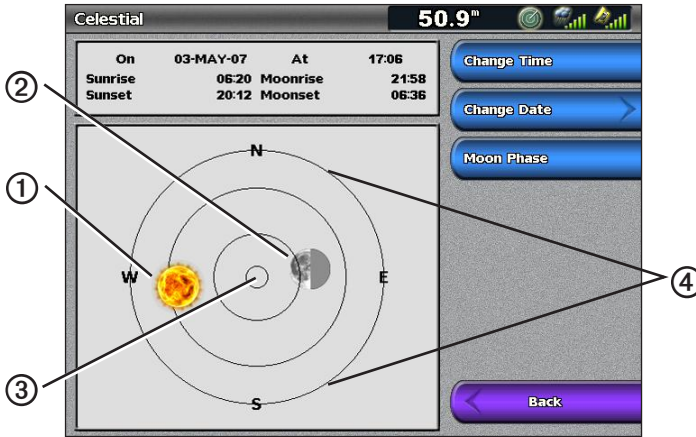
1. From the Home screen, select **Information > Tides/Currents > Currents > Nearby Stations**.
2. Select a station.
3. Complete an action:
  - Select **Change Date > Manual** to view tide information for a different date. Enter the date. Select **Done**.
  - Select **Change Date > Current Date/Time** to view tide information for the current date.
  - Select **Show Report** to view the Current Report for the selected station. The report includes slack water, flood, and ebb levels.
  - Select **Next Day** to view current information for the day after the date shown.
  - Select **Previous Day** to view current information for the day before the date shown.
  - Select **-** or **+** to change the time in 4- to 5-minute intervals.



## Celestial Information

The Celestial screen shows information about sunrise, sunset, moonrise, moonset, moon phase, and the approximate sky view location of the sun ① and moon ②. By default, the chartplotter shows celestial information for the present date and time. The center of the screen ③ represents the sky overhead, and the outermost rings represent the horizon ④.

From the Home screen, select **Information > Tides/Currents > Celestial**.



**Celestial Information**

### Viewing Celestial Information for a Different Date

You can select a date and time for which to view celestial information, and you can view the moon phase for the selected date and time.

1. From the Home screen, select **Information > Tides/Currents > Celestial**.
2. Complete an action:
  - Select **Change Time** to view information for a specified time on that date. Select **Up** or **Down** to enter a new time.
  - Select **Change Date > Manual** to view information for a different date. Enter the date. Select **Done**.
  - Select **Change Date > Current Date/Time** to view information for the current date.
  - Select **Moon Phase** to view the moon phase at the specified date and time. Select **Skyview** to return to the Skyview when viewing the Moon Phase.

## Environmental Data

### Graphs of Environmental Data

You can view and configure graphs of various types of environmental data, including wind speed, wind angle, air temperature, water temperature, atmospheric pressure, and depth. The graphs show data trends over a length of time. You can include one or more graphs in a Combinations screen (page 27).

Various sensors, transducers, or antennas are required to capture the data displayed on the graphs. For information about connecting the chartplotter to peripheral devices using a NMEA 2000 network, refer to *Technical Reference for Garmin NMEA 2000 Products*, on the included CD.

## Configuring a Graph

You can set the scale and duration of the Atmospheric Pressure and Depth graphs. The duration represents the time interval that appears on the graph, and the scale represents the range of the measured data that appears on the graph, including specific maximum and minimum values.

1. From the Home screen, select **Information > Graphs**.
2. Select **Atmo. Pressure** or **Depth**.
3. Select **Graph Setup**.
4. Complete an action:
  - Select **Duration**, and select **Up** or **Down** to set the duration.
  - Select **Scale**. Select **Up**, **Down**, or **Auto**. When you select **Auto**, the chartplotter sets the optimal minimum and maximum values for the range, based on environmental conditions. When the chartplotter receives new data about environmental conditions, it adjusts the scale automatically.
  - Select **Reset Scale** to allow the chartplotter to set the optimal minimum and maximum values for the range, based on environmental conditions. **Reset Scale** is only displayed when **Auto** is already selected for **Scale**.
  - For Atmospheric Pressure only, select **Press. Ref.**, and select the reference time used to calculate the barometer trend displayed in the top left corner of the graph.

## Wind Speed Data

### Selecting Apparent, True, or Ground Wind for the Wind Graph

The chartplotter must be connected to the peripheral devices listed below to capture the data shown on the wind speed graph.

Wind Speed	Description	Required Sensors
Apparent Wind	Shows wind speed data based on the flow of air experienced while on a boat in motion.	A wind sensor.
True Wind	Shows wind speed data based on the flow of air experienced while on a stationary boat. For the most-accurate data, the Wind Speed Source setting should be set to <b>Auto</b> ( <a href="#">page 52</a> ).	A wind sensor and a water speed sensor; or a wind sensor and a GPS antenna.
Ground Wind	Shows wind speed data based on the flow of air experienced while on shore.	A wind sensor, a water speed sensor, a heading sensor, and a GPS antenna; or a wind sensor and a GPS antenna; or a wind sensor, a water-speed sensor, and a heading sensor.

1. From the Home screen, select **Information > Graphs > Wind Speed**.
2. Select the type of wind speed data included on the graph (**Apparent Wind**, **True Wind**, or **Ground Wind**).

### Configuring the Wind Speed Sources

You can specify whether the vessel speed data displayed on the compass is based on water speed or GPS speed. Water speed is the speed reading from a water-speed sensor, and GPS speed is calculated from your GPS position.

1. From the Home screen, select **Configure > Preferences > Navigation > Speed Sources**.
2. Select **Wind**.
3. Complete an action:
  - Select **Water Speed** to indicate that the calculated wind speed is based on data from a Water Speed sensor.
  - Select **GPS Speed** to indicate that the calculated wind speed is based on data from a GPS antenna.
  - Select **Auto** to allow the chartplotter to select a speed data source automatically.

## Wind Angle Data

### Viewing the Wind Angle Data Graph

The chartplotter must be connected to the peripheral devices listed below to capture the data shown on the wind speed graph.

Wind Angle	Description	Required Sensors
Apparent Wind	Shows wind direction data based on the flow of air experienced while on a boat in motion. This is the Apparent Wind Angle, which is calculated in reference to the bow of the boat, and is represented in degrees port or degrees starboard.	A wind sensor.
True Wind	Shows wind direction data based on the flow of air experienced while on a stationary boat. This is the True Wind Angle, which is calculated in reference to the bow of the boat, and is represented in degrees port or degrees starboard. For the most-accurate data, the Wind Speed Source setting should be set to Auto (page 52).	A wind sensor and a speed sensor; or a wind sensor and a GPS antenna.
Ground Wind	Shows wind direction data based on the flow of air experienced while on shore. This is the Ground Wind Angle, which is calculated in reference to north, and is represented in degrees clockwise. North can be true north, magnetic north, or grid north, depending upon the configuration of the Heading reference setting (page 54).	A wind sensor, a water-speed sensor, a heading sensor, and a GPS antenna; or a wind sensor and a GPS antenna; or a wind sensor, a water-speed sensor, and a heading sensor.

1. From the Home screen, select **Information > Graphs > Wind Angle**.
2. Select the type of wind direction data included on the graph (**Apparent Wind**, **True Wind**, or **Ground Wind**).

## Air and Water Temperature Data

### Viewing the Air and Water Temperature Graph

The chartplotter must be connected to a water-temperature sensor or a temperature-capable transducer to capture the data shown on the water temperature graph. The chartplotter must be connected to an air-temperature sensor to capture the data shown on the air temperature graph.

If you have turned on and configured the water temperature alarm (page 94), the graph shows in red any water temperature data that is 2°F (1.1°C) above or below the temperature specified for the alarm.

1. From the Home screen, select **Information > Graphs > Temperature**.
2. Select the type of temperature information included on the graph (**Air Temp** or **Water Temp**).

## Atmospheric Pressure Data

### Viewing the Atmospheric Pressure Graph

The chartplotter must be connected to a barometric-pressure sensor to capture the data shown on the atmospheric pressure graph.

From the Home screen, select **Information > Graphs > Atmo. Pressure**.

## Depth Data

### Viewing the Depth Graph

The chartplotter must be connected to a depth-capable transducer to capture the data shown on the depth graph.

From the Home screen, select **Information > Graphs > Depth**.

If you have turned on and configured the shallow water and deep water alarms (page 94), the graph shows in red any water depth data that is less than the depth specified for the shallow water alarm, and it shows in red any water depth data that is greater than the depth specified for the deep water alarm.

## On-boat Data

### Engine and Fuel Gauges

#### Viewing Engine Gauges

You must be connected to a NMEA 2000 network capable of sensing engine data to view engine gauges. See the *GPSMAP 4000/5000 Series Installation Instructions* for details.

From the Home screen, select **Information > Engines**.

#### Cycling Through Engine and Fuel Gauge Screens

1. From the Home screen, select **Information > Engines**.
2. Move from one gauge screen to the next:
  - For the GPSMAP 4000 series, use the **Rocker**.
  - For the GPSMAP 5000 series, select the left and right arrows at the top of the page.

The chartplotter shows the next engine gauge or fuel gauge screen.

3. Repeat step 2 to cycle through all the engine gauge and fuel gauge screens.

#### Customizing Engine and Fuel Gauge Limits

You can configure up to four values for each engine gauge or fuel gauge, to establish the upper and lower limits of the gauge and the range of desired standard operation. When a value exceeds the range of standard operation, the gauge face or bar becomes red.

Setting	Description
Scale minimum	This value is less than the rated minimum, and it represents the lower limit of the gauge. This setting is not available on all gauges.
Scale maximum	This value is greater than the rated maximum, and it represents the upper limit of the gauge. This setting is not available on all gauges.
Rated minimum	Represents the minimum value of the standard operating range.
Rated maximum	Represents the maximum value of the standard operating range.

1. From the Home screen, select **Information > Engines > Menu > Gauge Setup > Set Gauge Limits**.
2. Select a gauge.
3. Select **Mode > Custom**.
4. Select the gauge limit you want to set (**Scale Min**, **Scale Max**, **Rated Min**, or **Rated Max**).
5. Select **On**.
6. Select the desired limit from the list.
7. Repeat steps 4 through 6 to set additional gauge limits.

#### Activating Status Alarms for Engine Gauges and Fuel Gauges

If you have activated gauge status alarms, when the engine sends a warning state message over the NMEA 2000 network, a gauge status alarm message appears. The gauge face or bar may become red depending on the alarm type.

From the Home screen, select **Information > Engines > Menu > Gauge Setup > Status Alarms > On**.

#### Customizing Engine and Fuel Gauge Status Alarms

1. From the Home screen, select **Information > Engines > Menu > Gauge Setup > Status Alarms > Custom**.
2. Select one or more engine gauge or fuel gauge alarms that you want to turn on or off.
3. Select **Back**.

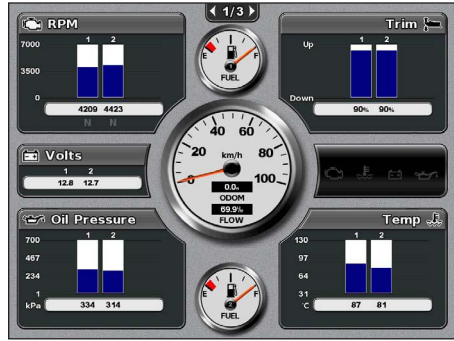
### Selecting the Engine Gauge Type

You can set the type of gauges that appear on the first engine gauge page. If you have one or two engines, you can view either analog or digital gauges. If you have three or more engines, you can view only digital gauges.

From the Home screen, select **Information > Engines > Menu > Gauge Setup > Style**.



**Analog Gauges**



**Digital Gauges**

### Selecting the Number of Engines Shown in Gauges

The digital engine gauges can show information for up to four engines. The analog engine gauges can show information for up to two engines.

1. From the Home screen, select **Information > Engines > Menu > Gauge Setup > Engine Selection > Num. Engines**.
2. Select the number of engines.
3. Complete an action:
  - Select **Back**.
  - Complete steps 2 and 3 of “Selecting the Engines Shown in Gauges” ([page 48](#)) to select the engines for which information appears in the gauges.

### Selecting the Engines Shown in Gauges

You must manually select the number of engines shown in the engine gauges ([page 48](#)) before you can select the engines for which information appears in the gauges.

1. From the Home screen, select **Information > Engines > Menu > Gauge Setup > Engine Selection**.
2. Select **First Engine**.
3. Select the engine for which you want to view information in the first gauge or bar.
 

For example, if you select “Engine 2,” the first engine gauge or bar shows information for the engine identified as “Engine 2” on the NMEA 2000 network.
4. Repeat steps 2 and 3 for the second, third, and fourth engine gauge or bar, as needed.
5. Select **Back**.

## Fuel Gauges

A maximum of two fuel gauges, an upper gauge and a lower gauge, appear above and below the speedometer in the center of the Fuel Gauges page. You must have fuel level sensors in your fuel tanks or a fuel flow sensor to capture the data shown in the fuel gauges.

If you use only a fuel flow sensor, the amount of fuel onboard is the estimated fuel level, and it is based on the total tank size, the recorded amount of fuel in the tanks, and the fuel flow rate.

The number and configuration of fuel gauges that appear is based on the number and type of onboard fuel data sensors, as shown below.

	0 Fuel Level Sensors	1 Fuel Level Sensor	2 or More Fuel Level Sensors
0 Fuel Flow Sensors	No fuel gauges appear.	1 fuel gauge appears.	2 fuel gauges appear.
1 or More Fuel Flow Sensors	1 fuel gauge appears with estimated fuel level.	1 fuel gauge appears.	2 fuel gauges appear.

## Viewing Fuel Gauges

To view fuel information, your chartplotter must be connected to an external fuel sensor, such as the Garmin GFS™ 10.

1. From the Home screen, select **Information > Engines**.
2. Move from the engine gauge screens to the fuel gauge screen:
  - For the GPSMAP 4000 series, use the **Rocker**.
  - For the GPSMAP 5000 series, select the left and right arrows at the top of the page.

## Customizing Gauge Limits

See “Customizing Engine and Fuel Gauge Limits” (page 47).

## Activating and Customizing Gauge Alarms

See “Activating Engine and Fuel Gauge Status Alarms” (page 47) and “Customizing Engine and Fuel Gauge Status Alarms” (page 47).

## Synchronizing Fuel Gauge Readings with Fuel Levels

1. From the Home screen, select **Information > Engines > Menu**.
2. Complete an action:
  - Select **Fill Up All Tanks** when your tanks are full. The fuel level is reset to maximum capacity. Adjust if necessary.
  - Select **Add Fuel To Boat** when you have added less than a full tank. Enter the amount of fuel added. Select **Done**. An estimate of the fuel added appears. Adjust if necessary.
  - Select **Set Total Fuel Onboard** to specify the total fuel in your tanks. Enter the fuel amount. Select **Done**.

## Selecting a Fuel Economy Data Source

1. From the Home screen, select **Information > Engines > Menu > Gauge Setup**.
2. Indicate the source of the speed data that is used to calculate the fuel economy:
  - Select **Fuel Economy > GPS Speed**.
  - Select **Fuel Economy > Water** to use data from a speed wheel.

## Trip Gauges

### Viewing Trip Gauges

Trip gauges show information for odometer, speed, time, and fuel for your present trip.

From the Home screen, select **Information > Trip**.

### Resetting Trip Gauges

1. From the Home screen, select **Information > Trip**.
2. Complete an action:
  - Select **Reset Trip** to set all the readings for the current trip to 0.0.
  - Select **Reset Maximum Speed** to set the maximum speed reading to 0.0.
  - Select **Reset Odometer** to set the odometer reading to 0.0.
  - Select **Reset All** to set all the readings to 0.0.

### Viewing Video

The chartplotter can show video if you are connected to one or more video sources using the supplied video cable. See the *GPSMAP 4000/5000 Series Installation Instructions* for details.

From the Home screen, select **Information > Video**.

### Selecting a Video Source

1. From the Home screen, select **Information > Video > Menu**.
2. Select **Source**.
3. Select **Video 1** or **Video 2** to indicate the source of the video feed and display video input.

### Configuring the Video Appearance

Before you can configure the video appearance, you must set the video Source setting to Video 1 or Video 2 ([page 50](#)).

1. From the Home screen, select **Information > Video > Menu**.
2. Complete an action:
  - Select **Aspect > Stretch** to show the video using a stretched aspect ratio. The video cannot be stretched beyond the dimensions provided by the connected video device, and it may not fill the entire screen.
  - Select **Aspect > Standard** to show the video using a standard aspect ratio.
  - Select **Brightness**. Select **Up**, **Down**, or **Auto**.
  - Select **Saturation** to adjust the color saturation. Select **Up**, **Down**, or **Auto**.
  - Select **Contrast**. Select **Up**, **Down**, or **Auto**.
  - Select **Standard**. Select the source format of the video (**PAL** or **NTSC**). Select **Auto** to allow the chartplotter to select the source format automatically.

### Alternating Among Multiple Video Sources

If you have two or more video sources, you can alternate between them using a specific time interval.

1. From the Home screen, select **Information > Video > Menu > Source > Alternate**.
2. Select the amount of time each video appears.



# Device Configuration

## Basic Device Configuration Questions

Question	Answer
How do I adjust the amount of detail shown on the map?	See “Changing the Map Zoom Detail” (page 11).
How do I change the time zone setting?	See “Configuring the Time” (page 54).
How do I change the language setting?	See “Setting the Language” (page 52).
How do I adjust the brightness of the backlight?	See “Adjusting the Backlight” (page 2).
How do I show a compass tape at the top of the chart?	See “Showing the Compass Tape Data Bar” (page 58).
How do I change the color of the active track?	See “Setting the Color of the Active Track” (page 37).
How do I delete the track log on the map?	See “Clearing the Active Track” (page 38).
How do I transfer waypoints to a memory card?	See “Chartplotter Data Management” (page 60).
How do I erase all waypoints, routes, and tracks?	See “Deleting All Saved Waypoints, Routes, and Tracks” (page 38).
How do I check the software version and the map version on the chartplotter?	See “Viewing System Information” (page 3).

## Simulator Mode

### WARNING

Do not try to navigate using simulator mode because the GPS receiver is turned off. Any satellite signal strength bars shown are simulations and do not represent the strength of actual satellite signals.

Simulator mode turns the GPS receiver off for use indoors or for practice using the chartplotter. The chartplotter does not track satellites in simulator mode.

### Turning Simulator Mode On

From the Home screen, select **Configure** > **System** > **Simulator** > **On**.

### Configuring Simulator Mode

- From the Home screen, select **Configure** > **System** > **Simulator** > **Setup**.
- Complete an action:
  - Select **Speed**. Enter the speed of your boat in simulator mode. Select **Done**.
  - Select **Track Control**. Select **Auto Track** to allow the chartplotter to set the heading automatically, or select **User Track** to set the heading manually.
  - Select **Set Position**. Select the simulated position of your boat. Select **Select**.
  - Select **Set Time**. Enter the simulated time. Select **Done**.
  - Select **Set Date**. Enter the simulated date. Select **Done**.

## Display Configuration

### Setting the Sound

You can set when the chartplotter makes audible sounds.

1. From the Home screen, select **Configure > System > Beeper/Display > Beeper**.
2. Complete an action:
  - Select **Alarms Only** to have the chartplotter beep only when alarms are triggered (default).
  - Select **Key and Alarm** to have the chartplotter beep when keys are pressed and when alarms are triggered.

### Setting the Language

You can select the language that appears on the chartplotter.

1. From the Home screen, select **Configure > Preferences > Language**.
2. Select a language.

## Navigation Preferences

### Route Settings

#### Selecting a Route Label Type

You can select the type of labels shown with route turns on the map.

1. From the Home screen, select **Configure > Preferences > Navigation > Route Labels**.
2. Complete an action:
  - Select **Show Name** to identify route turns using waypoint names.
  - Select **Show Number** to identify route turns using numbers, such as Turn 1 and Turn 2.

#### Configuring Route Turn Transitions

You can set how much time or how far before a turn in a route that you transition to the next leg. Raising this value can help improve the accuracy of the autopilot when navigating a route or an Auto Guidance line with many frequent turns, or at higher speeds. For straighter routes or slower speeds, lowering this value can improve autopilot accuracy.

1. From the Home screen, select **Configure > Preferences > Navigation > Turn Transition > Activation**.
2. Complete an action:
  - Select **Time**. Select **Change Time**. Enter the time.
  - Select **Distance**. Select **Change Distance**. Enter the distance.
3. Select **Done**.

#### Configuring Speed Data Sources

You can specify the source of the speed data that is used to calculate true wind speed or fuel economy. Water speed is the speed reading from a water-speed sensor, and GPS speed is calculated from your GPS position.

1. From the Home screen, select **Configure > Preferences > Navigation > Speed Sources**.
2. Complete an action:
  - Select **Wind**, and indicate whether the calculated wind speed data comes from a **Water Speed** sensor, is based on the **GPS Speed**, or whether the chartplotter selects a speed data source automatically.
  - Select **Fuel Economy**, and indicate whether the speed data that is used to calculate fuel economy comes from a **Water Speed** sensor or is based on the **GPS Speed**.

## Auto Guidance Line Configurations

You can set the data the chartplotter uses when calculating an Auto Guidance line.

**NOTE:** Auto Guidance is available with a preprogrammed BlueChart g2 Vision data card.

### Safe Water Depth and Safe Obstacle Height

#### CAUTION

The **Safe Depth** and **Safe Height** settings influence how the chartplotter calculates an Auto Guidance line. If an area has an unknown water depth or an unknown obstacle height, the Auto Guidance line is not calculated in that area. If an area at the beginning or the end of an Auto Guidance line is shallower than the safe water depth or lower than the safe obstacle height, the Auto Guidance line is not calculated in that area. On the chart, the course through those areas appears as a gray line. When your boat enters one of those areas, a warning message appears.

### Setting the Safe Water Depth and the Safe Obstacle Height

1. From the Home screen, select **Configure > Preferences > Navigation > Auto Guidance**.
2. Select **Safe Depth** to set the minimum depth (chart depth datum) the chartplotter uses when calculating an Auto Guidance line.
3. Enter the minimum safe depth.
4. Select **Done**.
5. Select **Safe Height** to set the minimum height (chart height datum) of a bridge that your boat can safely travel under.
6. Enter the minimum safe height.
7. Select **Done**.

### Shoreline Distance Auto Guidance Setting

The Shoreline Distance setting indicates how close to the shore you want the Auto Guidance line to be placed. The Auto Guidance line may move if you change this setting while navigating.

### Setting the Distance from Shore

The available values for the Shoreline Distance setting (Nearest, Near, Normal, Far, or Farthest) are relative, not absolute. To ensure that the Auto Guidance line is placed an appropriate distance from shore, you can assess the placement of the Auto Guidance line using one or more familiar destinations that require navigation through a narrow waterway.

1. Dock your boat or drop anchor.
2. From the Home screen, select **Configure > Preferences > Navigation > Auto Guidance > Shoreline Distance > Normal**.
3. From the Home screen, select **Charts > Navigation Chart**.
4. Use the cursor to select a destination to which you have navigated previously.
5. Select **Navigate To > Guide To**.
6. Review the placement of the Auto Guidance line. Determine whether the line safely avoids known obstacles, and whether the turns enable efficient travel.
7. Complete an action:
  - If the placement of the Auto Guidance line is satisfactory, select **Menu > Stop Navigation**. Proceed to step 11.
  - If the Auto Guidance line is too close to known obstacles, from the Home screen, select **Configure > Preferences > Navigation > Auto Guidance > Shoreline Distance > Far**.
  - If the turns in the Auto Guidance line are too wide, from the Home screen, select **Configure > Preferences > Navigation > Auto Guidance > Shoreline Distance > Near**.
8. If you selected **Near** or **Far** in step 7, review the placement of the Auto Guidance line. Determine whether the line safely avoids known obstacles, and whether the turns enable efficient travel.

Auto Guidance maintains a wide clearance from obstacles in open water, even if you set the Shoreline Distance setting to **Near** or **Nearest**. As a result, the chartplotter may not reposition the Auto Guidance line unless the destination selected in step 4 requires navigation through a narrow waterway.

## 9. Complete an action:

- If the placement of the Auto Guidance line is satisfactory, select **Menu > Navigation Options > Stop Navigation**. Proceed to step 11.
- If the Auto Guidance line is too close to known obstacles, from the Home screen, select **Configure > Preferences > Navigation > Auto Guidance > Shoreline Distance > Farthest**.
- If the turns in the Auto Guidance line are too wide, from the Home screen, select **Configure > Preferences > Navigation > Auto Guidance > Shoreline Distance > Nearest**.

10. If you selected **Farthest** or **Nearest** in step 9, review the placement of the Auto Guidance line. Determine whether the line safely avoids known obstacles, and whether the turns enable efficient travel.

Auto Guidance maintains a wide clearance from obstacles in open water, even if you set the Shoreline Distance setting to **Near** or **Nearest**. As a result, the chartplotter may not reposition the Auto Guidance line unless the destination selected in step 4 requires navigation through a narrow waterway.

## 11. Repeat steps 1–10 at least once more, using a different destination each time, until you are familiar with the functionality of the Shoreline Distance setting.

## Setting the Heading Reference

You can set the directional reference used in calculating heading information.

1. From the Home screen, select **Configure > Preferences > Units > Heading**.

## 2. Complete an action:

- Select **Auto Mag Var** (automatic magnetic variation) to set the magnetic declination for your location automatically.
- Select **True** to set true north as the heading reference.
- Select **Grid** to set grid north as the heading reference (000°).
- Select **User Mag Var** to set the magnetic variation value manually. Enter the magnetic variation value. Select **Done**.

## Coordinate Systems

### Setting the Position Format or the Map Datum Coordinate Systems

You can set the position format in which a given location reading appears, and the coordinate system on which the map is structured. The default coordinate system is WGS 84.

**NOTE:** Do not change the position format or the map datum coordinate system unless you are using a map or chart that specifies a different position format.

1. From the Home screen, select **Configure > Preferences > Units**.

## 2. Complete an action:

- Select **Position Format** to set the position format in which a given location reading appears, and select a position format.
- Select **Map Datum** to set the coordinate system on which the map is structured, and select a coordinate system.

## Configuring the Time

1. From the Home screen, select **Configure > Preferences > Units > Time**.

## 2. Complete an action:

- Select **Time Format** to set a time-keeping standard. Select **12 Hour**, **24 Hour**, or **UTC** (universal time coordinate).
- Select **Time Zone** to select the time zone.
- Select **Daylight Saving Time**. Select **On**, **Off**, or **Auto**.

## Units of Measure

You can set the units of measure the chartplotter shows, using a standardized system of measurements or creating a customized system of measurements.

### Selecting a Standardized System of Measurement

1. From the Home screen, select **Configure > Preferences > Units > System Units**.
2. Select **Statute** (mph, ft, °F), **Metric** (kh, m, °C), or **Nautical** (kt, ft, °F).

### Creating a Customized System of Measurement

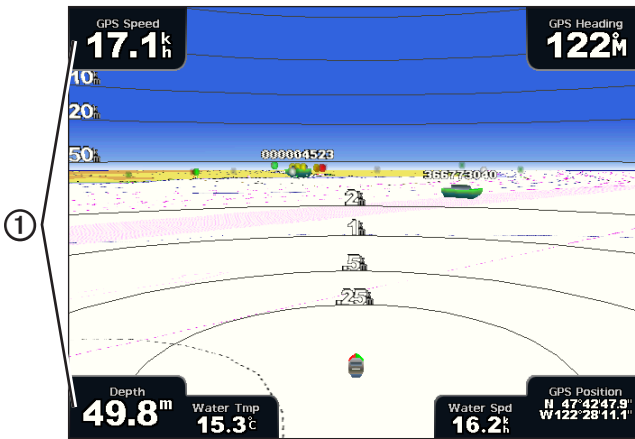
You must be receiving NMEA Sonar depth data or using a Garmin sounder module in order to view depth and temperature information.

You can select individual units of measure to create a customized system of measurement for your chartplotter display.

1. From the Home screen, select **Configure > Preferences > Units > System Units > Custom**.
2. Complete an action:
  - Select **Depth**, and select **Feet**, **Fathoms**, or **Meters**.
  - Select **Temperature**, and select **Fahrenheit** or **Celsius**.
  - Select **Distance**, and select **Miles**, **Kilometers**, **Nautical (nm, ft)** or **Nautical (nm, m)**.
  - Select **Speed > Vessel Speed**, and select **Miles per Hour**, **Kilometers per Hour**, or **Knots**.
  - Select **Speed > Wind Speed**, and select **Miles per Hour**, **Meters per Sec**, or **Knots**.
  - Select **Elevation**, and select **Feet** or **Meters**.
  - Select **Volume**, and select **Litres**, **US Gallons**, or **UK Gallons**.
  - Select **Pressure > Gauge Pressure**, and select **kPa** or **psi**.
  - Select **Pressure > Atmo Pressure**, and select **Millibars** or **Inches of Mercury**.

## Data Bars

Data bars ① appear on specific charts and 3D chart views, radar views, and combination screens. The data bar for each chart or one 3D chart view must be configured separately.



**Perspective 3D with Data Bars**

Several data bars are available. You can select the data fields to be shown within each data bar. When data bars numbers are displayed on the chart, the navigation inset is shown during navigation.

### Showing the Cruising Data Bar

The cruising data bar appears while you are navigating to a destination. It shows GPS speed, GPS heading, depth, and GPS position data.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Data Bars > Cruising > On**.

### Configuring the Cruising Data Bar

You should show the cruising data bar before you configure it ([page 56](#)).

The cruising data bar is divided into four sections, and each section appears in a different corner of the chart. You can select the type of data that appears in each section of the data bar.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Data Bars > Cruising > Data Bar Setup**.
4. Select **Top Left**.
5. Select the type of data to appear in the top left section of the data bar.
6. Repeat steps 4 and 5 for the **Top Right**, **Bottom Left**, and **Bottom Right** sections of the data bar.

### Showing the Navigation Data Bar

The navigation data bar appears in a row across the top of the chart. The navigation data bar can show distance to destination, arrival, off-course, bearing, and next turn data.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Data Bars > Navigation**.
4. Select **On** or **Auto**.

### Configuring the Navigation Data Bar

You should show the navigation data bar before you configure it ([page 56](#)).

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Data Bars > Navigation > Data Bar Setup**.
4. Complete an action:
  - Select **Route Leg**. Select **On** to show waypoint velocity made good (VMG) when navigating a route or an Auto Guidance line ([page 58](#)).
  - Select **Next Turn > Distance** to show next turn data based on distance.
  - Select **Next Turn > Time** to show next turn data based on time.
  - Select **Destination**, and select **Distance**, **Time to Destination**, or **Arrival** to indicate how the destination data appears.

### Fishing, Fuel, and Sailing Data Bars

Data Bar	Data Shown
Fishing	Depth, water temperature, and water speed
Fuel	Fuel rate, remaining fuel, range, and fuel economy
Sailing	Water speed, wind speed, wind angle, and wind velocity made good

#### Showing the Fishing, Fuel, or Sailing Data Bars

The fishing, fuel, and sailing data bars appear in a row across the bottom of the chart. Only one of these three data bars can appear at a time.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Complete an action:
  - Select **Menu > Data Bars > Fishing > On**.
  - Select **Menu > Data Bars > Fuel > On**.
  - Select **Menu > Data Bars > Sailing > On**.

**NOTE:** When you show any one of these three data bars, the other two data bars are hidden automatically.

#### Setting True or Apparent Wind for the Sailing Data Bar

You should show the sailing data bar before you configure it ([page 57](#)).

You can select the type of wind data that appears in the sailing data bar.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Data Bars > Sailing**.
4. Complete an action:
  - Select **Wind > Apparent** to show the flow of air experienced while on a boat in motion.
  - Select **Wind > True** to show the flow of air experienced while on a stationary boat.



### Wind VMG and Waypoint VMG in the Data Bars

The chartplotter automatically switches between showing wind VMG and waypoint VMG in the data bars.

Waypoint VMG appears under the following conditions:

- The route leg section of the navigation data bar shows waypoint VMG when you are navigating a route or an Auto Guidance line.
- The sailing data bar shows waypoint VMG when you are navigating a route or an Auto Guidance line, and you turn the route leg section of the navigation data bar off.

Wind VMG appears under the following conditions:

- The sailing data bar shows wind VMG when you are not navigating a route or an Auto Guidance line.
- The sailing data bar shows wind VMG when the route leg section of the navigation data bar is on and you are navigating a route.

### Showing the Compass Tape on a Chart

The compass tape appears in a row across the top of a chart or a 3D chart view. It shows the present heading, and an indicator that shows the bearing to the desired course appears while navigating.

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Select **Menu > Data Bars > Compass Tape > On**.

### Other Vessels

You can show and configure information about other vessels for the Navigation Chart, the Fishing Chart, Perspective 3D, or Mariner's Eye 3D.

**NOTE:** To configure Automatic Identification System (AIS) information for other vessels, your chartplotter must be connected to an external AIS device. MARPA requires the use of a heading sensor. The heading sensor must output the NMEA 0183 sentence HDM or HDG. See "About MARPA" (page 68).

### Viewing a List of AIS and MARPA Threats

See "Viewing a List of AIS and MARPA Threats" (page 18).

### Configuring the Appearance of Other Vessels

**NOTE:** The Mariner's Eye 3D chart view is available if you use a BlueChart g2 Vision data card. The Fishing chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, or Mariner's Eye 3D**.
3. Select **Menu > Other Vessels > Display Setup**.
4. Complete an action:
  - Select **Display Range** to indicate the distance from your location within which AIS vessels appear. Select a distance.
  - Select **MARPA > Show** to show information about MARPA-tagged vessels.
  - Select **Details > Show** to show details about other vessels.
  - Select **Proj. Heading** to set the projected heading time for MARPA-tagged vessels. Enter the heading. Select **Done**.
  - Select **Trails** to show the tracks of AIS vessels. Select the length of the track that appears using a trail.

## Information about Your Boat

### Calibrating a Water Speed Device

If you have a speed-sensing transducer, you can calibrate that speed-sensing device.

1. From the Home screen, select **Configure** > **My Boat** > **Calibrate Water Speed**.
2. Follow the on-screen instructions.

**NOTE:** If the boat is not moving fast enough or the speed sensor is not registering a speed, a “Speed too low” message appears. Select **OK**, and safely increase the boat speed. If the message appears again, stop the boat and ensure that the speed-sensor wheel is not stuck. If the wheel turns freely, check the cable connections. If you continue to get the message, contact Garmin Product Support.

### Setting the Fuel Capacity of Your Boat

1. From the Home screen, select **Configure** > **My Boat** > **Fuel Capacity**.
2. Enter the combined fuel capacity of all the tanks on your boat:
3. Select **Done**.

## Alarms

By default, all alarms are turned off except the destination and weather alarms. The chartplotter must be on for the alarms to work.

### Navigation Alarms

#### Setting an Arrival Alarm

You can set an alarm to sound when you are within a specified distance or time from a turn or destination waypoint.

1. From the Home screen, select **Configure** > **Alarms** > **Navigation** > **Arrival**.
2. Complete an action:
  - Select **Type**. Indicate whether you want arrival alarms to sound only when nearing **Destinations**, or when nearing **Destinations and Turns**.
  - Select **Activation**. Indicate whether the arrival alarm triggers based on **Time** to arrival or based on **Distance** to arrival.
3. Complete an action:
  - Select **Change Time** (if activation is set to **Time**) to indicate how long before arrival (in minutes) the alarm should sound. Enter the time. Select **Done**.
  - Select **Change Distance** (if activation is set to **Distance**) to indicate how far before arrival (in units of distance) the alarm should sound. Enter the distance. Select **Done**.

#### Setting the Anchor Drag Alarm

You can set an alarm to sound when you exceed a specified drift distance while anchored.

1. From the Home screen, select **Configure** > **Alarms** > **Navigation** > **Anchor Drag** > **On**.
2. Enter the drift distance that triggers the alarm.
3. Select **Done**.

### Setting the Off Course Alarm

You can set an alarm to sound when you are off course by a specified distance.

1. From the Home screen, select **Configure > Alarms > Navigation > Off Course > On**.
2. Enter the off-course distance that triggers the alarm.
3. Select **Done**.

### System Alarms

#### Setting the Clock Alarm

You can set an alarm using the system (GPS) clock.

1. From the Home screen, select **Configure > Alarms > System > Clock > On**.
2. Enter the time that triggers the alarm.
3. Select **Done**.

#### Setting the Unit Voltage Alarm

You can set an alarm to sound when the battery reaches a specified low voltage.

1. From the Home screen, select **Configure > Alarms > System > Unit Voltage > On**.
2. Enter the voltage that triggers the alarm.
3. Select **Done**.

#### Setting the GPS Accuracy Error Alarm

You can set an alarm to sound when the GPS location accuracy falls outside the user-defined value.

1. From the Home screen, select **Configure > Alarms > System > GPS Accuracy > On**.
2. Enter the GPS location accuracy that triggers the alarm.
3. Select **Done**.

#### Setting the Total Fuel Onboard Alarm

The chartplotter must be connected to an external fuel sensor to capture fuel economy data.

You can set an alarm to sound when the total amount of remaining onboard fuel reaches the level you specify.

1. From the Home screen, select **Configure > Alarms > Fuel > Total Fuel Onboard > On**.
2. Enter the amount of fuel that triggers the alarm.
3. Select **Done**.

#### Collision Alarm

See “Setting the Safe-zone Collision Alarm” ([page 17](#)).

#### Setting Sonar Alarms

See “Sonar Alarms” ([page 94](#)).

#### Setting Weather Alarms

See the *XM WX Satellite Weather®* and *XM Satellite Radio Supplement* (North America only).

## Chartplotter Data Management

### Copying Waypoints, Routes, and Tracks to a Chartplotter

Before you copy MapSource® or HomePort™ data to a chartplotter, you must complete the following actions:

- The first time that you use a memory card to copy HomePort or MapSource data to a chartplotter, you must prepare the memory card by inserting it into the chartplotter and allowing the chartplotter to place a file on it. This file provides information to HomePort or to MapSource to format the data.
- Check the MapSource version on your computer by clicking **Help > About MapSource**. If the software version is older than 6.12.2, update to the current version by clicking **Help > Check for Software Updates**, or go to [www.garmin.com](http://www.garmin.com).

1. Complete an action:
  - Copy the data from HomePort to the prepared memory card (using an Data card reader attached to the computer) according to the process described in the HomePort help system.
  - Copy the data from MapSource to the prepared memory card (using an Data card reader attached to the computer) according to the process described in the MapSource help system.
2. Copy the data from the data card to the chartplotter. See “Copying Data from a Data Card” (page 61).

### Copying Data from a Data Card

1. Insert a data card into the Data card slot on the chartplotter.
2. From the Home screen, select **Information > User Data > Data Transfer > Card**.
3. Complete an action:
  - Select **Merge From Card** to transfer data from the data card to the chartplotter and combine it with existing user data.
  - Select **Replace From Card** to transfer data from the data card to the chartplotter and overwrite existing user data on the chartplotter.
4. Select the file name from the list if multiple files are listed.

### Copying Waypoints, Routes, and Tracks to a Memory Card

1. Insert a memory card into the Data card slot on the chartplotter.
2. From the Home screen, select **Information > User Data > Data Transfer > Card > Save To Card**.
3. Indicate the name of the new file:
  - Select a file name from the list.
  - Select **Add New File** to create a new file. Enter the file name. Select **Done**.
4. Select **Save To Card**.

The file name is saved with a .ADM extension.

### Copying Built-in Maps to a Memory Card

You can copy maps from the chartplotter to a memory card for use with HomePort.

1. Insert a memory card into the Data card slot on the chartplotter.
2. From the Home screen, select **Information > User Data > Data Transfer > Card**.
3. Select **Copy Built-In Map > Begin Copy** to copy the maps loaded onto your chartplotter to the memory card.

## Copying Waypoints, Routes, and Tracks to or from all Chartplotters on a Network

You can transfer waypoint, route, and track information from one chartplotter connected to the Garmin Marine Network to every other chartplotter connected to the network.

1. Connect the chartplotter to a Garmin Marine Network using the network port on the back of the chartplotter and a Garmin network cable.
2. From the Home screen, select **Information > User Data > Data Transfer > Network**.
3. Complete an action:
  - Select **Clone User Data** to transfer data from the chartplotter to the other chartplotters connected to the network. Existing data is overwritten on those chartplotters.
  - Select **Merge User Data** to transfer data between all the chartplotters connected to the network. Unique data is combined with existing data on every chartplotter.

## Backing Up Data to a Computer

1. Insert a memory card into the Data card slot on the chartplotter.
2. From the Home screen, select **Information > User Data > Data Transfer > Card > Save to Card**.
3. Complete one of the following actions to indicate the name of the file to be backed up:
  - Select a file name from the list.
  - Select **Add New File** to create a new file. Enter the file name. Select **Done**.
4. Select **Save To Card**.

The file name is saved with a .ADM extension.
5. Remove the memory card from the chartplotter and insert it into an Data card reader attached to a computer.
6. Complete an action:
  - In Windows®, click **Start > My Computer > Secure Digital storage device > Garmin > UserData**.
  - In Apple OS X, open the memory card icon on the desktop, then open **Garmin > UserData**.
7. Copy the backup file on the card and paste it to any location on the computer.

## Restoring Backup Data to a Chartplotter

1. Insert a memory card into an Data card reader that is attached to the computer.
2. Copy a backup file from the computer to the memory card, into a folder named Garmin\UserData.
3. Insert the memory card into the Data card slot on the chartplotter.
4. From the Home screen, select **Information > User Data > Data Transfer > Card > Replace From Card**.

## Networked Device Configuration

### Viewing Connected Garmin Marine Network Devices

From the Home screen, select **Configure > Communications > Marine Network**.

Each connected device is listed along the left side of the screen.

### Assigning a Name to a Garmin Marine Network Device

1. From the Home screen, select **Configure > Communications > Marine Network**.
2. Select a device.
3. Select **Review**.
4. Enter a name for the device.
5. Select **Done**.

## Radar

### WARNING

The marine radar transmits microwave energy that has the potential to be harmful to humans and animals. Before beginning radar transmission, verify that the area around the radar is clear. The radar transmits a beam approximately 12° above and below a line extending horizontally from the center of the radar. Avoid looking directly at the radar, because the eyes are the most-susceptible parts of the body.

When you connect your chartplotter to an optional Garmin marine radar such as a GMR™ 404/406 or a GMR 18/24, you can view more information about your surroundings. The radar connects through the Garmin Marine Network and shares radar data with all networked chartplotters.

The GMR transmits a narrow beam of microwave energy as it rotates in a 360° pattern. When the transmitted energy contacts a target, some of that energy is reflected back to the radar.

### Transmitting Radar Signals

1. With the chartplotter off, connect your radar as described in the radar installation instructions.
2. Turn on the network.

The radar warms up and a countdown is provided to alert you when the radar is ready.

**NOTE:** As a safety feature, the radar enters standby mode after it warms up. This gives you an opportunity to verify that the area around the radar is clear before beginning radar transmission.



3. From the Home screen, select **Radar**.
4. Select **Harbor, Offshore, Dual Range, Sentry, or Radar Overlay**.  
A countdown message appears while the radar is starting up, and the “Ready to Transmit” message appears.
5. Select **Menu > Transmit Radar**.  
A “Spinning Up” message appears for a few moments, and the radar begins painting an image.

### Stopping the Transmission of Radar Signals

From the Radar screen, select **Menu > Radar to Standby**.

### Adjusting the Zoom Scale on the Radar Screen

The zoom scale, also called the radar range, represents the distance from your position (the center) to the outermost ring. Each ring represents an even division of the zoom scale. For example, if the zoom scale is set at three miles, each ring represents one mile from the center out.

- For the GPSMAP 5000 series, touch  and .
- For the GPSMAP 4000 series, press the **Range** keys (-/+).

## Radar Display Modes

The Radar screen has five standard operating modes. Each mode is available for use only with a compatible radar (page 64).

- **Cruising mode**—shows a full-screen image of the gathered radar information.
- **Harbor mode**—intended for use in inland waters, this mode works best with short-range radar signals (2 nm or less).
- **Offshore mode**—intended for use in open waters, this mode works best with long-range radar signals.
- **Dual Range mode**—provides a side-by-side view of both short-range and long-range radar data.
- **Sentry mode**—allows you to put the radar into timed-transmit mode, in which you can configure a radar transmit and standby cycle to conserve power. You can also enable a guard zone in Sentry mode, which identifies a safe zone around your boat.

Radar Mode	Compatible Radar			
	GMR 20, 21, 40, 41	GMR 18, 18 HD, 24, 24 HD	GMR 404, 406	GMR 404 xHD, 406 xHD, 604 xHD, 606 xHD, 1204 xHD, 1206 xHD
Cruising	X	X	X	
Harbor				X
Offshore				X
Dual Range				X
Sentry	X	X	X	X

### Cruising Mode

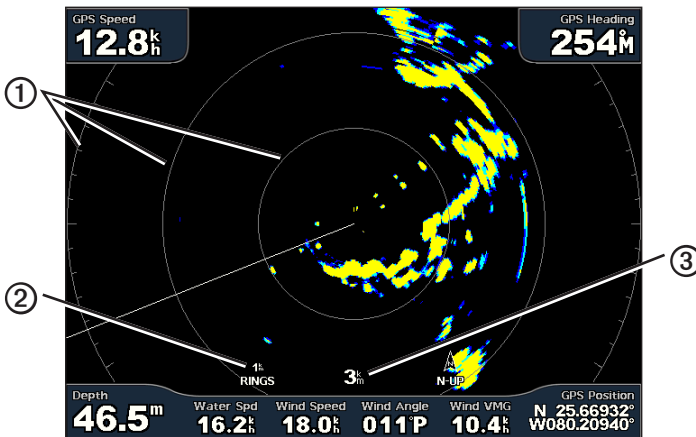
Cruising mode is the standard radar operation for the GMR non-xHD radar.

**NOTE:** If you switch from Sentry mode to Cruising mode, the radar switches to full-time transmission and disables any guard zones.

### Showing Cruising Mode

From the Home screen, select **Radar > Cruising**.

A full-screen image of the gathered radar information appears. Your position is in the center of the screen, and the range rings ① provide distance measurements. The distance between rings ② and the radar range ③ is at the bottom of the screen.



Cruising Mode



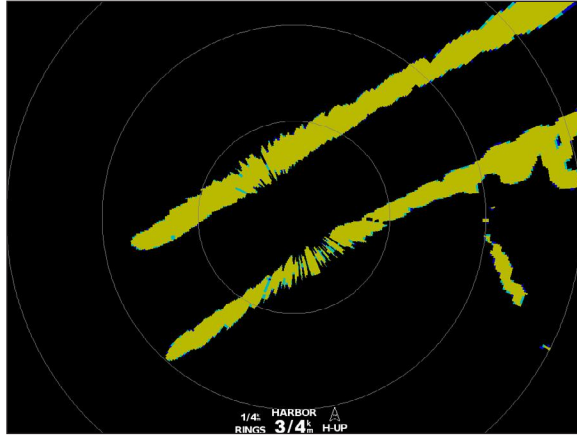
### Harbor Mode

Harbor mode is the standard radar operation for use in inland waters with a GMR xHD radar. Harbor mode works best with short-range radar signals (2 nm or less).

**NOTE:** If you switch from Sentry mode to Harbor mode, the radar switches to full-time transmission and disables any guard zones.

#### Showing Harbor Mode

From the Home screen, select **Radar > Harbor**.



**Harbor Mode**

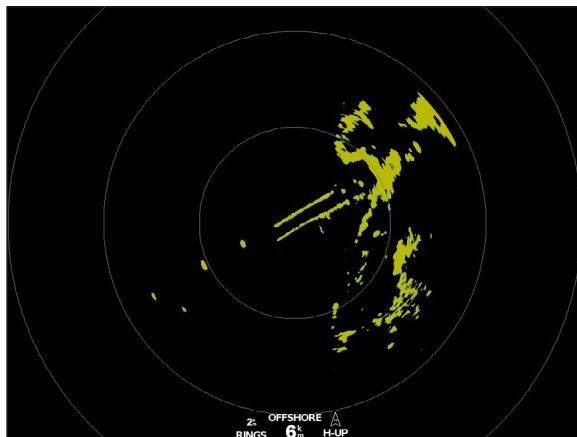
### Offshore Mode

Offshore mode is the standard radar operation for use in open waters with a GMR xHD radar.

**NOTE:** If you switch from Sentry mode to Offshore mode, the radar switches to full-time transmission and disables any guard zones.

#### Showing Offshore Mode

From the Home screen, select **Radar > Offshore**.

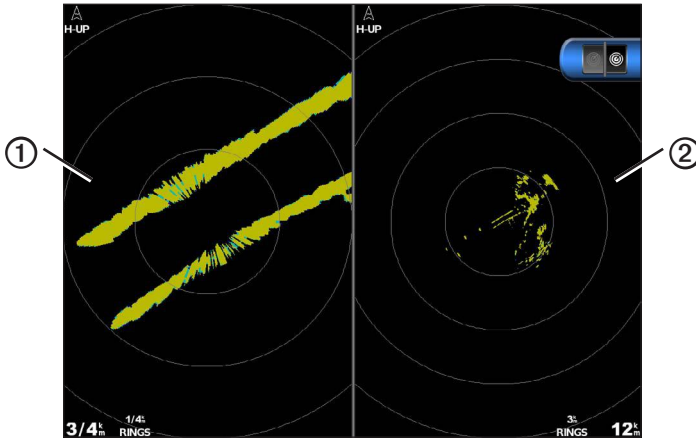


**Offshore Mode**

## Dual Range Mode

Dual Range mode provides a side-by-side view of both short-range and long-range radar data with a GMR xHD radar. The two radar views provided in this mode can be especially useful at night or in inclement weather.

Short-range radar data appears on the left side ① of the dual-range screen, and the signal range cannot exceed 3 nm (4 km). Long-range radar data appears on the right side ② of the dual-range screen, and the signal range must be greater than the signal range shown on the short-range screen. The short-range screen is comparable to Harbor mode, and the long-range screen is comparable to Offshore mode.



**Dual Range Mode**

**NOTE:** If you switch from Sentry mode to Dual Range mode, the radar switches to full-time transmission and disables any guard zones. If you switch from Harbor mode or Offshore mode to Dual Range mode, all MARPA targets are cancelled, and you cannot acquire MARPA targets until you exit Dual Range mode.

### Showing Dual Range Mode

From the Home screen, select **Radar > Dual Range**.

### Sentry Mode

Sentry mode allows you to put the radar into timed-transmit mode, in which you can configure a radar transmit and standby cycle to conserve power. You can also enable a guard zone in this mode, which identifies a safe zone around your boat and sounds an alarm when a radar object enters this zone. Sentry mode works with all Garmin GMR model radars.

### Showing Sentry Mode

**NOTE:** If you switch to Sentry mode and MARPA is disabled in Sentry mode, all MARPA targets are cancelled, and you cannot acquire MARPA targets until you exit Sentry mode. If MARPA is enabled in Sentry mode, MARPA targets are not cancelled.

From the Home screen, select **Radar > Sentry**.

### Enabling MARPA in Sentry Mode

From the Home screen, select **Radar > Sentry > Menu > Sentry Setup > MARPA > On**.

### Enabling Timed Transmit

From the Home screen, select **Radar > Sentry > Menu > Sentry Setup > Timed Xmit > On**.

## Setting the Standby and Transmit Times

You must enable timed transmit before you can set the standby and transmit times (page 66).

To help conserve power, you can indicate the radar standby time and the transmit time to implement periodic radar signal transmissions at set intervals.

1. From the Home screen, select **Radar > Sentry > Menu > Sentry Setup**.
2. Select **Stdby Time**.
3. Enter the time interval between radar signal transmissions.
4. Select **Done**.
5. Select **Xmit Time**.
6. Enter the duration of each radar signal transmission.
7. Select **Done**.



## Enabling a Guard Zone

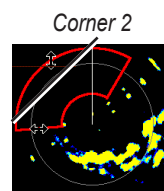
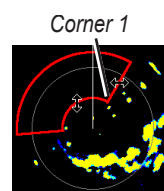
From the Home screen, select **Radar > Sentry > Menu > Sentry Setup > Enable Guard Zone**.

## Defining a Partial Guard Zone

You must enable a guard zone before you can define the boundaries of the zone (page 67).

You can define the boundaries of a guard zone that does not completely encompass your boat.



1. From the Home screen, select **Radar > Sentry > Menu > Sentry Setup > Adjust Guard Zone > Move Guard Zone > Corner 1**.
2. Adjust the location of the guard-zone corner:
  - For the GPSMAP 4000 series, use the **Rocker** and the on-screen arrows  and .
  - For the GPSMAP 5000 series, touch the guard-zone corner and drag.
3. Select **Corner 2** and repeat step 2 to adjust the location of the second corner of the guard zone.
4. Select **Done**.

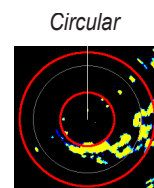


## Defining a Circular Guard Zone

You must enable a guard zone before you can define the boundaries of the zone (page 67).

You can define a circular guard zone that completely encompasses your boat.

1. From the Home screen, select **Radar > Sentry > Menu > Sentry Setup > Adjust Guard Zone > Move Guard Zone**.
2. Adjust the inner ring of the guard zone:
  - For the GPSMAP 4000 series, use the **Rocker** and the on-screen arrows  and .
  - For the GPSMAP 5000 series, touch the guard-zone corner and drag.
3. Select **Corner 2** and repeat step 2 to adjust the location of the outer ring of the guard zone.
4. Select **Circle > Done**.



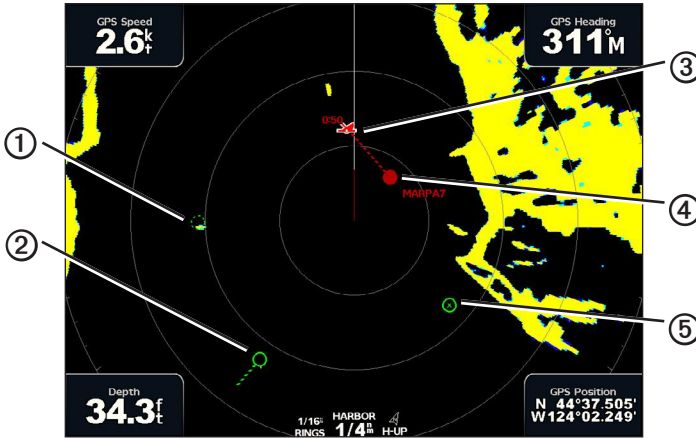
## Radar Targeting

Radar targeting enables you to identify and track objects.






### About MARPA

MARPA is primarily used for collision avoidance, through object targeting and tracking.

To use MARPA, you must assign a MARPA tag to a target. The radar system automatically monitors the tagged object and provides you with information about the object, including the range, bearing, speed, GPS heading, nearest approach, and time to nearest approach. MARPA indicates the status of each tagged object (acquiring, lost, tracking, or dangerous), and the chartplotter can sound a collision alarm if the object enters your safe zone.



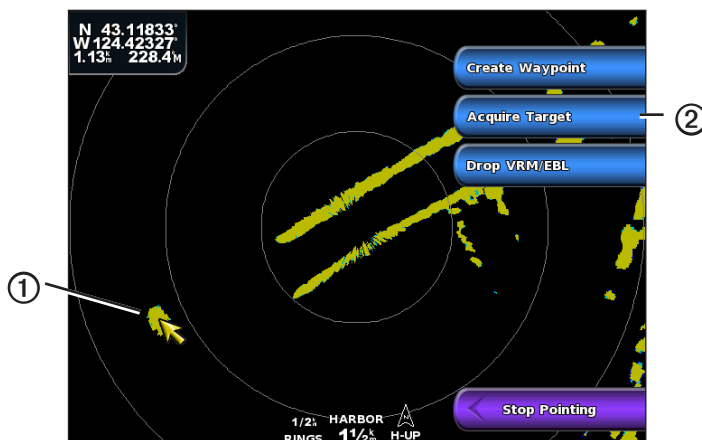
**MARPA Targeting Symbols**

Symbol	Description
① 	Acquiring a target. Concentric, dashed green rings radiate from the target while the radar is locking onto it.
② 	Target has been acquired. A solid green ring indicates the location of a target that the radar has locked onto. A dashed green line attached to the circle indicates the projected course over ground or the GPS heading of the target.
③ 	Closest point of approach and time to closest point of approach to a dangerous target.
④ 	Dangerous target is in range. A red ring flashes from the target while an alarm sounds and a message banner appears. After the alarm has been acknowledged, a solid red dot with a dashed red line attached to it indicates the location and the projected course over ground or the GPS heading of the target. If the safe-zone collision alarm has been set to Off, the target flashes, but the audible alarm does not sound and the alarm banner does not appear ( <a href="#">page 17</a> ).
⑤ 	Target has been lost. A solid green ring with an X through it indicates that the radar could not lock onto the target.

### Assigning a MARPA Tag to an Object

**NOTE:** MARPA requires the use of a heading sensor and an active GPS signal. The heading sensor must provide the NMEA 2000 parameter group number (PGN) 127250, or the NMEA 0183 HDM or HDG output sentence.

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore**.
3. select an object or location ①.
4. Select **Acquire Target** ②.



### Removing a MARPA Tag from a Target Object

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore**.
3. Select a targeted object.
4. Select **MARPA Target > Remove**.

### Viewing Information about a MARPA-tagged Object

You can view the range, bearing, speed, and other information about a MARPA-tagged object.

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore**.
3. Select a targeted object.
4. Select **MARPA Target**.

### Stop Radar Targeting

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore**.
3. Select a targeted object.
4. Select **Stop Pointing**.

### Setting the Safe-zone Collision Alarm

See “Setting the Safe-zone Collision Alarm” (page 17).

### Viewing a List of AIS and MARPA Threats

From any radar view or the Radar Overlay, you can view and customize the appearance of a list of AIS and MARPA threats.

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, **Offshore**, **Dual Range**, **Sentry**, or **Radar Overlay**.
3. Complete an action:
  - Select **Menu > Other Vessels > List > Show** to open the list in **Cruising**, **Harbor**, **Offshore**, **Dual Range**, or **Sentry** mode, or in the **Radar Overlay**.

- Open the list in Dual Range mode. Select  > **Menu** > **Other Vessels** > **List** > **Show** for the GPSMAP 4000 series. Select **Left** > **Other Vessels** > **List** > **Show** for the GPSMAP 5000 series.
4. Select the type of threats to include in the list (**All Threats**, **MARPA** threats only, or **AIS** threats only).

### Showing AIS Vessels on the Radar Screen

AIS requires the use of an external AIS device and active transponder signals from other vessels.

You can configure how other vessels appear on the Radar screen. If any setting (except the AIS display range) is configured for one radar mode, the setting is applied to every other radar mode, except Radar Overlay. The details and projected heading settings configured for one radar mode are applied to every other radar mode, including Radar Overlay.



1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, **Offshore**, or **Sentry**.
3. Select **Menu** > **Other Vessels** > **Display Setup**.
4. Complete an action:
  - Select **Display Range** to indicate the distance from your location within which AIS vessels appear. Select a distance.
  - Select **Details** > **Show** to show details about AIS-activated and MARPA-tagged vessels.
  - Select **Proj. Heading** to set the projected heading time for AIS-activated and MARPA-tagged vessels. Enter the time. Select **Done**.

### VRM and EBL

The variable range marker (VRM) and the electronic bearing line (EBL) measure the distance and bearing from your boat to a target object. On the Radar screen, the VRM appears as a circle that is centered on the present location of your boat, and the EBL appears as a line that begins at the present location of your boat and intersects the VRM. The point of intersection is the target of the VRM and the EBL.

### Showing the VRM and the EBL



The VRM and the EBL configured for one mode are applied to all other radar modes.

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, **Offshore**, or **Dual Range**.
3. Complete an action:
  - Select **Menu** > **Show VRM/EBL** for Cruising, Harbor, or Offshore mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu** > **Show VRM/EBL** for the GPSMAP 4000 series. Select **Left** > **Show VRM/EBL** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu** > **Show VRM/EBL** for the GPSMAP 4000 series. Select **Right** > **Show VRM/EBL** for the GPSMAP 5000 series.

### Adjusting the VRM and the EBL

You must show the VRM and the EBL before you can adjust them (page 70).



You can adjust the diameter of the VRM and the angle of the EBL, which moves the intersection point of the VRM and the EBL. The VRM and the EBL configured for one mode are applied to all other radar modes.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, or Dual Range**.
3. Complete an action:
  - Select **Menu > Adjust VRM/EBL > Move VRM/EBL** for Cruising, Harbor, or Offshore Mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 4000 series. Select **Left > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 4000 series. Select **Right > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 5000 series.
4. Select a new location for the intersection point of the VRM and the EBL.
5. Select **Done**.

### Measuring the Range and Bearing to a Target Object

You must show the VRM and the EBL before you can adjust them (page 70).

The VRM and the EBL configured for one mode are applied to all other radar modes.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, or Dual Range**.
3. Complete an action:
  - Select **Menu > Adjust VRM/EBL > Move VRM/EBL** for Cruising, Harbor, or Offshore Mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 4000 series. Select **Left > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 4000 series. Select **Right > Adjust VRM/EBL > Move VRM/EBL** for the GPSMAP 5000 series.
4. Complete an action:
  - For the GPSMAP 4000 series, use the **Rocker** to adjust the diameter of the VRM and the angle of the EBL, so that the intersection point of the VRM and EBL is at the target location
  - For the GPSMAP 5000 series, touch the target location.

The range and the bearing to the target location appear in the upper-left corner of the screen.

5. Select **Done**.

### Displaying the Distance to a Point on the Radar Screen

You can select a point on the radar screen to display the distance and bearing of that location from your present location in the upper-left corner of the screen.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, or Dual Range**.
3. Select the desired location on the radar screen.
 

The distance and bearing to the selected location is displayed in the upper-left corner of the screen.
4. Select **Stop Pointing**.



## Waypoints and Routes on the Radar Screen

### Marking a Waypoint on the Radar Screen

1. From the Home screen, select **Radar**.
2. Select a radar mode.
3. Select a location
4. Select **Create Waypoint**.

### Showing or Hiding Waypoints on the Radar Screen

You can show waypoints that are within the range shown on the Radar screen. This setting does not apply to the Radar Overlay.

1. From the Home screen, select **Radar > Radar Setup > Appearance > Waypoints**.
2. Complete an action:
  - Select **Show** to show all waypoints.
  - Select **Navigation Only** to show only waypoints associated with the currently active route.
  - Select **Hide** to hide all waypoints.

### Navigating a Saved Route on the Radar Screen

Before you can browse a list of routes and navigate to one of them, you must record and save at least one route ([page 33](#)). Navigation lines must be showing in order to view a route on the Radar screen ([page 82](#)).

1. From the Home screen, select **Where To? > Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Complete an action:
  - Select **Forward** to navigate the route from the starting point used when the route was created.
  - Select **Backward** to navigate the route from the destination point used when the route was created.
5. From the Home screen, select **Radar**.
6. Select **Cruising, Harbor, Offshore, Dual Range, or Sentry**.  
The route appears as a magenta line, with the starting point, destination, and turns indicated.
7. Review the course indicated by the magenta line.
8. Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.

### Navigating Parallel to a Saved Route on the Radar Screen

Before you can browse a list of routes and navigate to one of them, you must record and save at least one route ([page 33](#)). Navigation lines must be showing in order to view a route on the Radar screen ([page 82](#)).

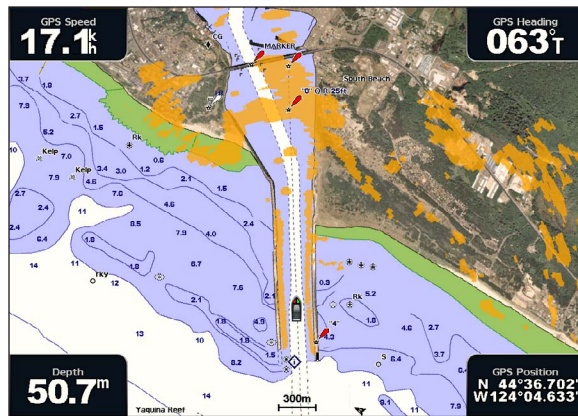
1. From the Home screen, select **Where To? > Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Select **Offset** to navigate parallel to the route, offset from it by a specific distance.
5. Select **Offset**.
6. Enter the offset distance.
7. Select **Done**.
8. Complete an action:
  - Select **Forward - Port** to navigate the route from the starting point used when the route was created, to the left of the original route.
  - Select **Forward - Starboard** to navigate the route from the starting point used when the route was created, to the right of the original route.
  - Select **Backward - Port** to navigate the route from the destination point used when the route was created, to the left of the original route.

- Select **Backward - Starboard** to navigate the route from the destination point used when the route was created, to the right of the original route.
- From the Home screen, select **Radar**.
  - Select **Cruising, Harbor, Offshore, Dual Range, or Sentry**.  
The route appears as a magenta line, with the starting point, destination, and turns indicated.
  - Review the course indicated by the magenta line.
  - Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.

## About the Radar Overlay

The Radar Overlay superimposes radar information on the Navigation Chart or the Fishing Chart. Data appears on the Radar Overlay based on the most-recently used radar mode (Cruising, Harbor, Offshore, or Sentry), and all settings configurations applied to the Radar Overlay are also applied to the last-used radar mode. For example, if you use Harbor mode and then you switch to the Radar Overlay, the Radar Overlay would show Harbor mode radar data. If you changed the gain setting using the Radar Overlay menu, the gain setting for Harbor mode would change automatically.

The Radar Overlay does not show data based on the Dual Range radar mode, and settings configurations applied to the overlay are not applied to the Dual Range mode.



**Radar Overlay on the Navigation Chart**

### Radar Overlay and Chart Data Alignment

When using the Radar Overlay, the chartplotter aligns radar data with chart data based on the boat heading, which is based by default on data from a magnetic heading sensor connected using a NMEA 0183 or NMEA 2000 network. If a heading sensor is not available, the boat heading is based on GPS tracking data.

GPS tracking data indicates the direction in which the boat is moving, not the direction in which the boat is pointing. If the boat is drifting backward or sideways due to a current or wind, the Radar Overlay may not perfectly align with the chart data. This situation should be avoided by using boat-heading data from an electronic compass.

If the boat heading is based on data from a magnetic heading sensor or an automatic pilot, the heading data could be compromised due to incorrect setup, mechanical malfunction, magnetic interference, or other factors. If the heading data is compromised, the Radar Overlay may not align perfectly with the chart data.

### Showing the Radar Overlay

The Radar Overlay displays data based on the most-recently used radar mode.

From the Home screen, select **Radar > Radar Overlay**.

The radar picture appears in orange and overlays the Navigation Chart.

### Zooming In and Out on the Radar Overlay

Zooming while panning the map only affects the zoom scale of the map. The radar range remains the same. Zooming while the map is locked on the boat (not panning) affects the zoom scale of the map and the radar range.

Complete an action:

- For the GPSMAP 4000 series, press the **Range** (-/+) keys to zoom out and zoom in.
- For the GPSMAP 5000 series, touch  and  to zoom out and zoom in.

### Selecting a Chart Type for the Radar Overlay

You can indicate whether the Navigation Chart or the Fishing Chart appears under the Radar Overlay.

**NOTE:** The Fishing Chart is available with a preprogrammed BlueChart g2 Vision data card.

1. From the Home screen, select **Radar > Radar Overlay > Menu > Setup > Chart Setup**.
2. Complete an action:
  - Select **Chart Type > Navigation**.
  - Select **Chart Type > Fishing**.

### Optimizing the Radar Display

You can optimize the radar display for Cruising mode, Harbor mode, Offshore mode, or Sentry mode individually, and for each screen in Dual Range mode.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range, or Sentry**.
3. Select a radar range ([page 75](#)).
4. Restore the default value of the gain setting ([page 76](#)).
5. Restore the default value of the sea clutter setting ([page 77](#)).
6. Restore the default value of the rain clutter setting ([page 78](#)).
7. Restore the default value of the FTC setting ([page 78](#)).
8. Restore the default value of the crosstalk setting ([page 80](#)).
9. Adjust the gain setting manually ([page 76](#)).
10. Adjust the sea clutter setting manually ([page 77](#)).
11. Adjust the rain clutter and FTC settings manually ([page 79](#)).

## About the Range of Radar Signals

The range of the radar signal indicates the length of the pulsed signal transmitted and received by the radar. As the range increases, the radar transmits longer pulses in order to reach distant targets. Closer targets, especially rain and waves, also reflect the longer pulses, which can add noise to the Radar screen. Viewing information about longer-range targets can also decrease the amount of space available on the Radar screen for viewing information about shorter-range targets, unless you are using Dual Range mode ([page 66](#)).

### Tips for Selecting a Radar Range

- Determine what information you need to see on the radar display. For example, do you need information about nearby weather conditions or targets and traffic, or are you more concerned about distant weather conditions?
- Assess the environmental conditions in which the radar is being used. Especially in inclement weather, longer-range radar signals can increase the clutter on the Radar screen and make it more difficult to view information about shorter-range targets. In rain, shorter-range radar signals can enable you to view information about nearby objects more effectively, if the Rain Clutter and FTC settings are configured optimally.
- Select the shortest effective range, given your reason for using radar and the current environmental conditions.

### Selecting a Radar Range

See “Adjusting the Zoom Scale on the Radar Screen” ([page 63](#)).

## About Gain and Clutter

The gain controls the sensitivity of the radar receiver. The default setting for the gain, Auto, sets the gain automatically one time, based on average conditions, the range of the radar signal, and the selected radar mode. The chartplotter does not readjust the gain automatically in response to changing conditions. To optimize the radar appearance for specific conditions, manually adjust the gain ([page 76](#)).

Clutter is interference caused by the unwanted reflection of radar signals off of unimportant targets. Common sources of clutter include precipitation, sea waves, and nearby radar sources.

### Settings Configurations and Radar Type

When using a GMR non-xHD radar, all gain and clutter settings configured for use in one radar mode are applied to every other radar mode and to the Radar Overlay.

When using a GMR xHD radar, gain and clutter settings configured for use in one radar mode may or may not be applied to other radar modes, according to this table.

Setting	Radar Mode		
	Harbor, Offshore, Sentry	Dual Range: Left Screen	Dual Range: Right Screen
Gain	Configure separately	Configure separately	Configure separately
Sea Clutter	Configure separately	Configure separately	Configure separately
Rain Clutter	Configure separately	Configure separately	Configure separately
FTC	Configure separately	Configure once for both left and right screens	
Crosstalk	Configure once for all modes		

When using a GMR xHD radar, the last gain and clutter settings configured for use in any radar mode are applied to the Radar Overlay automatically. For example, if the gain for the Harbor mode is set to 50%, the gain for the Radar Overlay is set to 50% automatically. Later, if the gain for the Offshore mode is set to 40%, the gain for the Radar Overlay is set to 40% automatically.



## Default Gain and Clutter Settings

Setting	Default Value	Instructions
Gain	Auto	See “Automatically Adjusting Gain on the Radar Screen” (page 76).
Sea Clutter	Calm	See “Restoring the Default Sea Clutter Setting” (page 77).
Rain Clutter	Off	See “Restoring the Default Rain Clutter Setting” (page 78).
FTC	Off	See “Restoring the Default FTC Setting” (page 78).
Crosstalk	On	See Adjusting Crosstalk Clutter on the Radar Screen” (page 80).

### Automatically Adjusting Gain on the Radar Screen

**Auto** is the default value for the gain setting. The automatic gain setting for each radar mode is optimized for that mode, and may differ from the automatic gain setting used for another mode.

**NOTE:** Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay (page 75).



1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range, or Sentry** mode.
3. Complete an action:
  - Select **Menu > Gain > Auto** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Gain > Auto** for the GPSMAP 4000 series. Select **Left > Gain > Auto** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Gain > Auto** for the GPSMAP 4000 series. Select **Right > Gain > Auto** for the GPSMAP 5000 series.

The chartplotter sets the gain automatically once based on average conditions, the range of the radar signal, and the selected radar mode. The chartplotter does not readjust the gain automatically in response to changing conditions.

### Manually Adjusting Gain on the Radar Screen

For optimal radar performance that accounts for actual conditions, you can manually adjust the gain.

**NOTE:** Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay (page 75).



1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Gain** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Gain** for the GPSMAP 4000 series. Select **Left > Gain** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Gain** for the GPSMAP 4000 series. Select **Right > Gain** for the GPSMAP 5000 series.
4. Select **Up** to raise the gain, until light speckles appear across the Radar screen.
 

Data on the Radar screen is refreshed every few seconds. As a result, the effects of manually adjusting the gain may not appear instantly. Adjust the gain slowly.
5. Select **Down** to lower the gain until the speckles disappear.
6. If boats, land, or other targets are within range, select **Down** to lower the gain until the targets begin to blink.
7. Select **Up** to raise the gain until the boats, land, or other targets appear steadily lit on the Radar screen.
8. If necessary, minimize the appearance of nearby large objects (page 76).
9. If necessary, minimize the appearance of side-lobe echoes (page 77).

### Minimizing Nearby Large-object Interference

Nearby targets of significant size, such as jetty walls, can cause a very bright image of the target to appear on the Radar screen. This image can obscure smaller targets located near it.



**NOTE:** Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay (page 75).

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Gain** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Gain** for the GPSMAP 4000 series. Select **Left > Gain** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Gain** for the GPSMAP 4000 series. Select **Right > Gain** for the GPSMAP 5000 series.
4. Select **Down** to lower the gain until the smaller targets are clearly visible on the Radar screen.  
Reducing the gain to eliminate nearby large-object interference may cause smaller or more-distant targets to blink or disappear from the Radar screen.

#### Minimizing Side-lobe Interference on the Radar Screen



Side-lobe interference may appear to streak outward from a target in a semi-circular pattern. Side-lobe effects can be avoided by reducing the gain or reducing the radar range.

**NOTE:** Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay (page 75).

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Gain** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Gain** for the GPSMAP 4000 series. Select **Left > Gain** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Gain** for the GPSMAP 4000 series. Select **Right > Gain** for the GPSMAP 5000 series.
4. Select **Down** to lower the gain until the semi-circular, streaked pattern disappears from the Radar screen.  
Reducing the gain to eliminate side-lobe interference may cause smaller or more-distant targets to blink or disappear from the Radar screen.

#### Restoring the Default Sea Clutter Setting

**NOTE:** Depending upon the radar in use, the sea clutter setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay (page 75).



1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Noise Rejection > Sea Clutter** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Noise Rejection > Sea Clutter** for the GPSMAP 4000 series. Select **Left > Noise Rejection > Sea Clutter** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Noise Rejection > Sea Clutter** for the GPSMAP 4000 series. Select **Right > Noise Rejection > Sea Clutter** for the GPSMAP 5000 series.
4. Select a setting that reflects present sea conditions: **Rough, Medium**, or **Calm**.

#### Adjusting Sea Clutter on the Radar Screen

You can adjust the appearance of clutter caused by choppy sea conditions. The sea clutter setting affects the appearance of nearby clutter and targets more than it affects the appearance of distant clutter and targets. A higher sea clutter setting reduces the appearance of clutter caused by nearby waves, but it can also reduce or eliminate the appearance of nearby targets.


**NOTE:** Depending upon the radar in use, the sea clutter setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay (page 75).

1. From the Home screen, select **Radar**.

2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Noise Rejection > Sea Clutter** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Noise Rejection > Sea Clutter** for the GPSMAP 4000 series. Select **Left > Noise Rejection > Sea Clutter** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Noise Rejection > Sea Clutter** for the GPSMAP 4000 series. Select **Right > Noise Rejection > Sea Clutter** for the GPSMAP 5000 series.
4. Select a setting that reflects present sea conditions: **Rough, Medium, or Calm**.
5. Select **Up** or **Down** to decrease or increase the appearance of sea clutter until other targets are clearly visible on the Radar screen.  
Clutter caused by sea conditions may still be visible.



### Restoring the Default FTC Setting

**NOTE:** Depending upon the radar in use, the FTC setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay ([page 75](#)).

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Noise Rejection > FTC > Off** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for both screens in Dual Range mode. Select  > **Menu > Noise Rejection > FTC > Off** for the GPSMAP 4000 series. Select **Left > Noise Rejection > FTC > Off** for the GPSMAP 5000 series.

### Restoring the Default Rain Clutter Setting

**NOTE:** Depending upon the radar in use, the rain clutter setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay ([page 75](#)).

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Noise Rejection > Rain Clutter > Off** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu > Noise Rejection > Rain Clutter > Off** for the GPSMAP 4000 series. Select **Left > Noise Rejection > Rain Clutter > Off** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu > Noise Rejection > Rain Clutter > Off** for the GPSMAP 4000 series. Select **Right > Noise Rejection > Rain Clutter > Off** for the GPSMAP 5000 series.






## Adjusting Rain Clutter on the Radar Screen

You can adjust the appearance of clutter caused by rain. Reducing the radar range also can minimize rain clutter ([page 63](#)).

Setting	Description
FTC	This setting affects the appearance of large, hazy masses of clutter caused by rain at any distance.
Rain Clutter	This setting affects the appearance of nearby rain clutter and targets more than it affects the appearance of distant rain clutter and targets. A higher rain clutter setting reduces the appearance of clutter caused by nearby rain, but it can also reduce or eliminate the appearance of nearby targets.


**NOTE:** Depending upon the radar in use, the rain clutter and FTC settings configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay ([page 75](#)).

- From the Home screen, select **Radar**.
- Select **Cruising**, **Harbor**, **Offshore**, **Dual Range**, or **Sentry** mode.
- Complete an action:
  - Select **Menu** > **Noise Rejection** > **FTC** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for both screens in Dual Range mode. Select  > **Menu** > **Noise Rejection** > **FTC** for the GPSMAP 4000 series. Select **Left** > **Noise Rejection** > **FTC** for the GPSMAP 5000 series.
- Complete an action:
  - Select **High**, **Medium**, or **Low** to decrease or increase the appearance of rain clutter, if using a GMR non-xHD radar. Other targets should remain clearly visible on the Radar screen.
  - Select **Up** or **Down** to decrease or increase the appearance of rain clutter, if using a GMR xHD radar. Other targets should remain clearly visible on the Radar screen. If the FTC setting is greater than 50%, consider reducing the radar range.
- Complete an action:
  - Select **Menu** > **Noise Rejection** > **Rain Clutter** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for the short-range screen in Dual Range mode. Select  > **Menu** > **Noise Rejection** > **Rain Clutter** for the GPSMAP 4000 series. Select **Left** > **Noise Rejection** > **Rain Clutter** for the GPSMAP 5000 series.
  - Configure the setting for the long-range screen in Dual Range mode. Select  > **Menu** > **Noise Rejection** > **Rain Clutter** for the GPSMAP 4000 series. Select **Right** > **Noise Rejection** > **Rain Clutter** for the GPSMAP 5000 series.
- Select **Up** or **Down** to decrease or increase the appearance of nearby rain clutter until other targets are clearly visible on the Radar screen.  
Clutter caused by rain may still be visible.

### Adjusting Crosstalk Clutter on the Radar Screen

You can reduce the appearance of clutter caused by interference from another nearby radar source. **On** is the default value for the crosstalk setting.

**NOTE:** Depending upon the radar in use, the crosstalk setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar Overlay ([page 75](#)).

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor, Offshore, Dual Range** or **Sentry** mode.
3. Complete an action:
  - Select **Menu > Noise Rejection > Crosstalk > On** for Cruising, Harbor, Offshore, or Sentry mode.
  - Configure the setting for both screens in Dual Range mode. Select  **> Menu > Noise Rejection > Crosstalk > On** for the GPSMAP 4000 series. Select **Left > Noise Rejection > Crosstalk > On** for the GPSMAP 5000 series.

## Radar Display Appearance

### Data Bar Settings

Data bars can appear in all Radar modes, and they provide real-time, at-a-glance information.

All data bars configured for use in one radar mode appear in every other radar mode. All data bars configured for use on the Radar Overlay appear only on the Radar Overlay, and must be configured separately.

Several radar data overlays are available. You can select the data fields to be shown within each data overlay.

When overlay numbers are displayed on the radar screen, the navigation inset is shown during navigation. The compass tape can be shown or hidden in each overlay.

### Showing the Cruising Data Bar on the Radar Screen

The cruising data bar shows GPS speed, GPS heading, depth, and GPS position data.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor**, or **Offshore** mode.
3. Select **Menu > Radar Setup > Data Bars > Cruising > On**.

### Configuring the Cruising Data Bar on the Radar Screen

You should show the cruising data bar before you configure it ([page 80](#)).

The cruising data bar is divided into four sections, and each section appears in a different corner of the Radar screen. You can select the type of data that appears in each section of the data bar.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor**, or **Offshore** mode.
3. Select **Menu > Radar Setup > Data Bars > Cruising > Data Bar Setup**.
4. Select **Top Left**.
5. Select the type of data to appear in the top left section of the data bar.
6. Repeat steps 4 and 5 for the **Top Right, Bottom Left**, and **Bottom Right** sections of the data bar.

### Showing the Navigation Data Bar on the Radar Screen

The navigation data bar appears in a row across the top of the Radar screen. The navigation data bar can show arrival, distance to destination, off-course, bearing, and next turn data.

1. From the Home screen, select **Radar**.
2. Select **Cruising, Harbor**, or **Offshore** mode.
3. Select **Menu > Radar Setup > Data Bars > Navigation**.
4. Select **On** or **Auto**.

### Configuring the Navigation Data Bar on the Radar Screen

You should show the navigation data bar before you configure it ([page 80](#)).

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore** mode.
3. Select **Menu > Radar Setup > Data Bars > Navigation > Data Bar Setup**.
4. Complete an action:
  - Select **Route Leg**. Select **On** to show waypoint velocity made good when navigating a route or an Auto Guidance line.
  - Select **Next Turn > Distance** to show next-turn data based on distance.
  - Select **Next Turn > Time** to show next-turn data based on time.
  - Select **Destination**, and select **Distance**, **Time to Destination**, or **Arrival** to indicate how the destination data appears.

### Fishing, Fuel, and Sailing Data Bars

Data Bar	Data Shown
Fishing	Depth, water temperature, and water speed
Fuel	Fuel rate, remaining fuel, range, and fuel economy
Sailing	Water speed, wind speed, wind angle, and wind velocity made good (VMG)

### Showing the Fishing, Fuel, and Sailing Data Bars on the Radar Screen

The fishing, fuel, and sailing data bars appear in a row across the bottom of the Radar screen. Only one of these three data bars can appear at a time.

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore** mode.
3. Complete an action:
  - Select **Menu > Radar Setup > Data Bars > Fishing > On** to show the Fishing data bar.
  - Select **Menu > Radar Setup > Data Bars > Fuel > On** to show the Fuel data bar.
  - Select **Menu > Radar Setup > Data Bars > Sailing > On** to show the Sailing data bar.

**NOTE:** When you show any one of these three data bars, the other two data bars are hidden automatically.

### Setting True or Apparent Wind for the Sailing Data Bar

You should show the sailing data bar before you configure it ([page 81](#)).

1. From the Home screen, select **Radar**.
2. Select **Cruising**, **Harbor**, or **Offshore** mode.
3. Select **Menu > Radar Setup > Data Bars > Sailing**.
4. Complete an action:
  - Select **Wind > Apparent** to show the flow of air experienced while on a boat in motion.
  - Select **Wind > True** to show the flow of air experienced while on a stationary boat.

### Wind VMG and Waypoint VMG in the Data Bars

See “How Wind VMG and Waypoint VMG Appear in the Data Bars” ([page 58](#)).

### Showing the Compass Tape on the Radar Overlay Screen

The compass tape data bar appears in a row across the top of the Radar Overlay screen, above the navigation data bar. It shows the current heading, and an indicator that shows the bearing to the desired course appears while navigating.

1. From the Home screen, select **Radar**.
2. Select **Radar Overlay**.
3. Select **Menu > Setup > Data Bars > Compass Tape > On**.

## Radar Display Settings

### Setting the Radar Color Scheme

You can set the color scheme used for all Radar screens. This setting does not apply to the Radar Overlay.

1. From the Home screen, select **Radar > Radar Setup > Appearance > Color Scheme**.
2. Select **White**, **Black** (for night mode colors), or **Blue**.

### Setting the Radar Display Orientation

You can set the perspective of the radar display. The orientation setting applies to every radar mode. This setting does not apply to the Radar Overlay.

1. From the Home screen, select **Radar > Radar Setup > Orientation**.
2. Complete an action:
  - Select **Head Up** to set the top of the map according to the heading data received from a heading sensor, also known as the magnetic heading. The heading line appears vertically on the screen.
  - Select **North Up** to set the top of the map to a north heading.
  - Select **Course Up** to set the map so the direction of navigation is always up.

### Shifting the Field of View on the Radar Screen

You can shift your current location toward the bottom of the screen automatically as your speed increases. Enter your top speed for the best results. This setting applies to every radar mode. This setting does not apply to the Radar Overlay.

1. From the Home screen, select **Radar > Radar Setup > Appearance > Look-Ahd Spd > On**.
2. Enter the speed.
3. Select **Done**.

## Radar Navigation Settings

### Showing the Heading Line on the Radar Screen

You can show an extension from the bow of the boat in the direction of travel on the Radar screen. This setting does not apply to the Radar Overlay.

From the Home screen, select **Radar > Radar Setup > Appearance > Heading Line > Show**.

### Showing and Hiding Range Rings on the Radar Screen

The range rings help you to visualize distances on the Radar screen. This setting does not apply to the Radar Overlay.

From the Home screen, select **Radar > Radar Setup > Appearance > Rings > Show**.

### Showing Navigation Lines on the Radar Screen

The navigation lines indicate the course you have set using Route To, Guide To, or Go To. This setting does not apply to the Radar Overlay.

From the Home screen, select **Radar > Radar Setup > Appearance > Nav Lines > Show**.

### Showing and Hiding Waypoints on the Radar Screen

See “Showing Waypoints on the Radar Screen” ([page 72](#)).

## Radar Scanner and Antenna Settings

### Setting the Antenna Rotation Speed

**NOTE:** You can set the rotation speed for GMR 18, 18 HD, 24, 24 HD, 404, 406, 404 xHD, 406xHD, 604 xHD, 606 xHD, 1204 xHD, or 1206 xHD radar only. The antenna does not rotate at high speed in Dual Range mode.

1. From the Home screen, select **Radar > Radar Setup > Rotation Spd.**
2. Complete an action:
  - Select **Normal Speed.**
  - Select **High Speed** to increase the speed at which the antenna rotates, which increases the speed at which the screen updates.

### Setting the Radar Antenna Size

You can indicate the size of the radar antenna in order to optimize the radar picture. Until you specify the antenna size, the “Radar needs to be configured” message appears.

**NOTE:** You can set the antenna size for GMR 404, 406, 404 xHD, 406 xHD, 604 xHD, 606 xHD, 1204 xHD, or 1206 xHD radar only.

1. From the Home screen, select **Radar > Radar Setup > Antenna Size.**
2. Select **4 Foot** or **6 Foot.**

### Turning On and Configuring a Radar No-transmit Zone

You can indicate an area within which the radar scanner does not transmit signals.

**NOTE:** You can set a radar no-transmit zone for GMR xHD radar only.

1. From the Home screen, select **Radar > Radar Setup > Enable No-transmit Zone.**  
The no-transmit zone is indicated by a shaded area on the Radar screen.
2. Select **Angle 1 > Adjust > Move.**
3. Select **Up** or **Down** to adjust the size of the no-transmit zone.
4. Select **Angle 2 > Adjust > Move.**
5. Select **Up** or **Down** to adjust the size of the no-transmit zone.

### Front-of-boat Offset

The front-of-boat offset compensates for the physical location of the radar scanner on a boat, if the radar scanner does not align with the bow-stern axis.

### Measuring the Potential Front-of-boat Offset

1. Using a magnetic compass, take an optical bearing of a stationary target located within viewable range.
2. Measure the target bearing on the radar.
3. If the bearing deviation is more than  $\pm 1^\circ$ , set the front-of-boat offset.

### Setting the Front-of-boat Offset

Before you can set the front-of-boat offset, you must measure the potential front-of-boat offset (see previous procedure).

The front-of-boat offset setting configured for use in one radar mode is applied to every other radar mode and to the Radar Overlay.

1. From the Home screen, select **Radar > Radar Setup > Front of Boat.**
2. Select and hold **Up** or **Down** to adjust the offset.

## Radar Overlay Display Appearance

### Adjusting Gain and Clutter on the Radar Overlay

See “About Gain and Clutter” (page 75).

### Setting the Radar Overlay Display Orientation

See “Changing the Map Orientation” (page 10).

### Setting Data Bars for the Radar Overlay

See “Data Bar Settings” (page 80).

## Tracks and Waypoints Settings

### Showing Tracks on the Radar Overlay

You can set whether vessel tracks appear on the Radar Overlay.

From the Home screen, select **Charts > Radar Overlay > Menu > Waypoints & Tracks > Tracks > On**.

### Managing Tracks

See “Tracks” (page 36).

### Selecting a Waypoint Label Type

You can select the type of labels shown with waypoints on the Radar Overlay.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Waypoints & Tracks > Waypoint Display > Display**.
2. Complete an action:
  - Select **Label** to identify waypoints using labels.
  - Select **Comment** to show comments as waypoint labels.
  - Select **Symbol** to identify waypoints using symbols.

### Managing Waypoints

See “Waypoints” (page 32).

## Alarms and Other Vessel Settings

### Setting the Safe-zone Collision Alarm

See “Setting the Safe-zone Collision Alarm” (page 17).

### Viewing a List of AIS and MARPA Threats

See “Viewing a List of AIS and MARPA Threats” (page 69).

### Showing Other Vessels on the Radar Overlay

AIS requires the use of an external AIS device and active transponder signals from other vessels.

You can configure how other vessels appear on the Radar Overlay. The display range setting configured for the Radar Overlay is applied only to the Radar Overlay. The details and projected heading settings configured for the Radar Overlay are also applied to all radar modes.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Other Vessels > Display Setup**.
2. Complete an action:
  - Select **Display Range** to indicate the distance from your location in which AIS vessels appear. Select a distance.
  - Select **Details > Show** to show details about AIS-activated and MARPA-tagged vessels.
  - Select **Proj. Heading** to set the projected heading time for AIS-activated and MARPA-tagged vessels. Enter the heading. Select **Done**.
  - Select **Trails** to show the tracks of AIS vessels, and select the length of the track that appears using a trail.

## Radar Overlay Navigation Display Settings

### Changing the Map Zoom Detail

You can adjust the amount of detail shown on the map, at different zoom levels, for the Radar Overlay.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Setup > Chart Setup > Detail**.
2. Select a level of detail.


### Showing and Configuring the Heading Line

The heading line is an extension drawn on the map from the bow of the boat in the direction of travel. You can configure the appearance of the heading line on the Radar Overlay.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Setup > Chart Setup > Heading Line**.
2. Complete an action:
  - Select **Distance > Change Distance** to set the distance to the end of the heading line. Enter the distance.
  - Select **Time > Change Time** to set the amount of time until you reach the end of the heading line. Enter the time.
3. Select **Done**.

### Showing an Inset Map while Panning

You can control whether an inset map appears while panning the Radar Overlay.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Setup > Chart Setup > Inset Map**.
2. Complete an action:
  - Select **On** to show an inset map at all times.
  - Select **Auto** to show an inset map only when the position icon () is no longer visible on the screen.

### Showing and Configuring Spot Depth Soundings

On the Radar Overlay, you can turn on spot soundings and set a dangerous depth.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Setup > Chart Setup > Spot Depths > On**.
2. Select **Spot Depths > Dangerous**.
3. Enter the dangerous depth.
4. Select **Done**.

### Showing and Configuring Navaid Symbols

You can show and configure the appearance of navaid symbols on the Radar Overlay.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Setup > Chart Setup > Symbols**.
2. Complete an action:
  - Select **Navaid Size** to set the size of the navaid symbols shown on the map. Select a size.
  - Select **Navaid Type > NOAA** to show the NOAA navaid symbol set on the map.
  - Select **Navaid Type > IALA** to show the IALA navaid symbol set on the map.



### Showing Additional Chart Details

You can show additional information on the Radar Overlay.

1. From the Home screen, select **Charts > Radar Overlay > Menu > Setup > Chart Setup > Symbols**.
2. Complete an action:
  - Select **Land POIs > On** to show land-based points of interest (POIs).
  - Select **Light Sectors** to show the sector in which a navigational light is visible. Select **On** to filter out light sectors depending on the zoom level.
  - Select **Chart Borders > On** to show what area the maps cover when using a BlueChart g2 Vision data card.
  - Select **Photo Points > On** to show camera icons when using a BlueChart g2 Vision data card.

### Setting the Front-of-boat Offset

See “Front-of-boat Offset” ([page 83](#)).

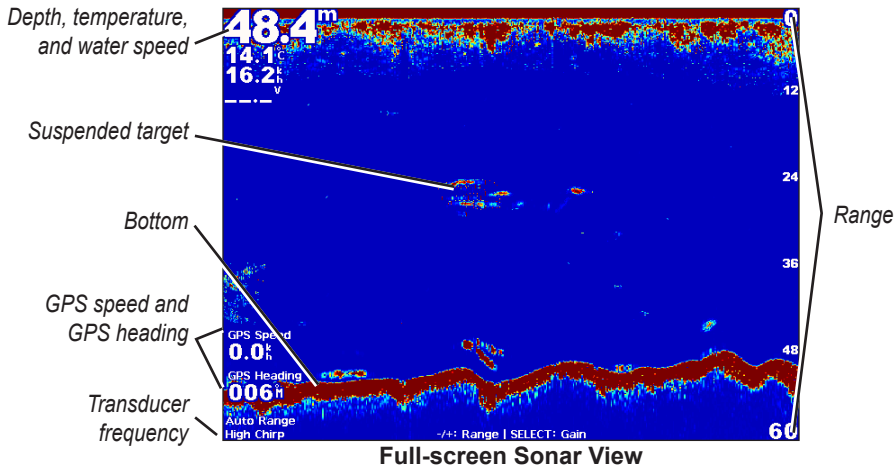
## Sonar

When connected to an optional Garmin GSD 22/24/26 sounder module and a transducer, your chartplotter can be used as a fishfinder. The GSD 22/24/26 connects through the Garmin Marine Network and shares sonar data with every chartplotter connected to the network. The GSD 22 and the GSD 24/26 models have slightly different features and options. Any differences are noted in the appropriate sections below.

### Sonar Views

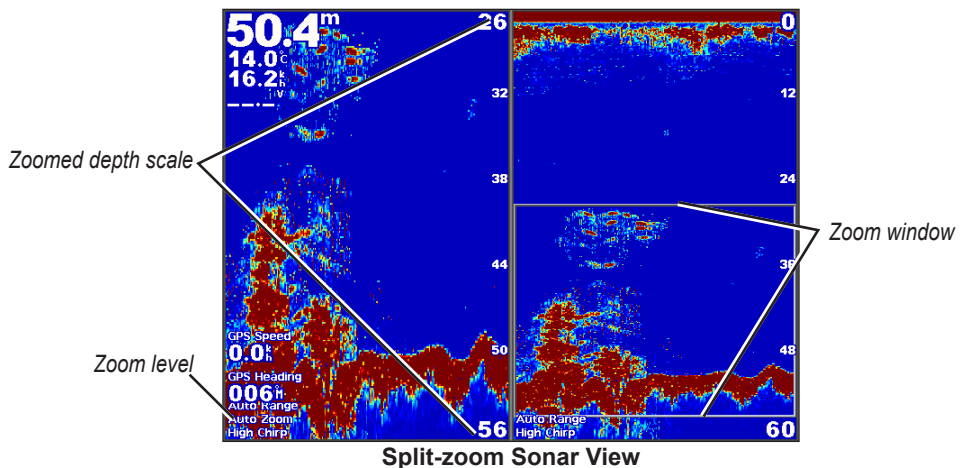
#### Full-screen Sonar View

The full-screen sonar view shows a full-view graph of sonar readings from a transducer. The range scale along the right side of the screen shows the depth of detected objects as the screen scrolls from the right to the left. You can view the full-screen sonar by selecting **Sonar > Full Screen** from the Home screen.



#### Split-zoom Sonar View

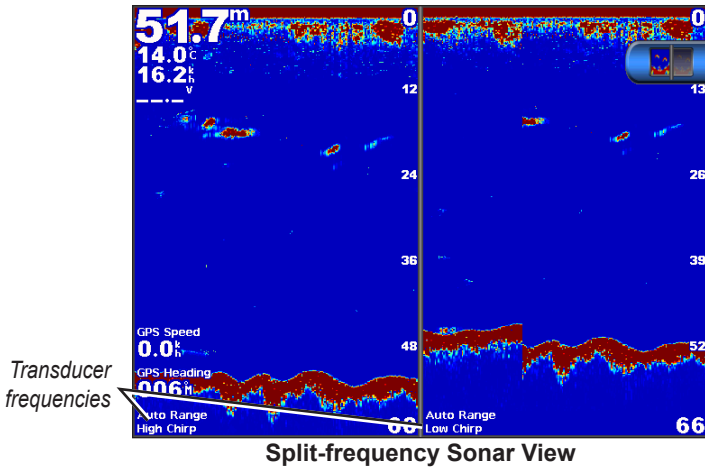
The split-zoom sonar view shows a full-view graph of sonar readings and a magnified portion of that graph on the same screen. You can view the split-zoom sonar by selecting **Sonar > Split Zoom** from the Home screen.



#### Split-frequency Sonar View

The split-frequency view shows the sonar data of one frequency, such as 200 kHz, on the left side of the screen and the other frequency, such as 50 kHz, on the right. You can view the split-frequency sonar by selecting **Sonar > Split Frequency** from the Home screen. With the GSD 26, you can configure the zoom, depth line, and a-scope of the two frequencies independently in split-frequency view.

**NOTE:** The split-frequency sonar view requires the use of a dual-frequency transducer.

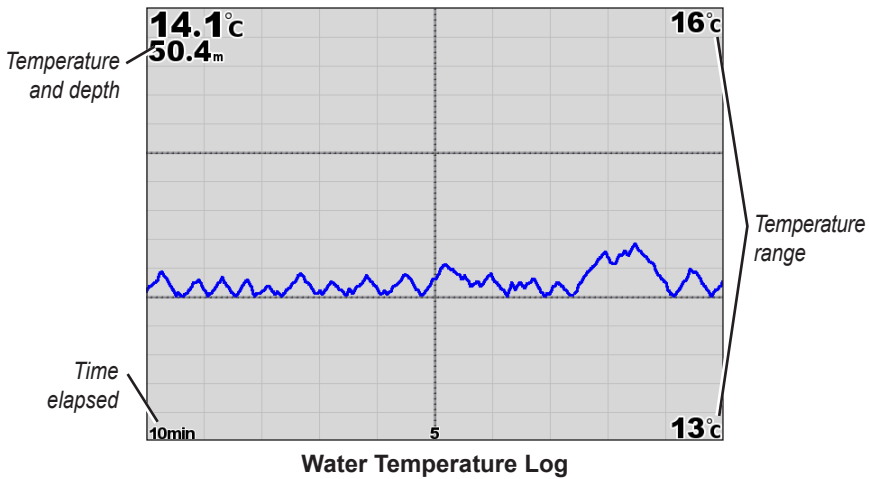


## Water Temperature Log

If you are using a temperature-capable transducer, the temperature log shows water temperature readings over time. You can view the temperature log by selecting **Sonar > Water Temp** from the Home screen.

### Setting the Temperature Log Range and Time Scales

1. From the Home screen, select **Sonar > Water Temp**.
2. Select **Menu**.
3. Complete an action:
  - Select **Duration** to set the time-elapsed scale. The default setting is 10 minutes. Increase the time-elapsed scale to view temperature variations over a longer period of time.
  - Select **Scale** to set the temperature-range scale. The default setting is 4 degrees. Increase the temperature-range scale to view more variation in temperature.



## Waypoints on the Sonar Screen

### Pausing the Sonar Screen

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Pause Sonar**.

## Creating a Waypoint on the Sonar Screen

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Pause Sonar**.
4. Set the location of the waypoint using the intersection point of the depth line and the distance line:
  - For the GPSMAP 4000 series, use the **Rocker** to move the intersection point.
  - For the GPSMAP 5000 series, touch and drag the intersection point.
5. Select an option:
  - For the GSD 22, select **Create Waypoint**.
  - For the GSD 24/26, select **New Wpt**.

## Sonar Screen Settings

You can define and adjust the sonar screen for all sonar views.

### Setting the Zoom Level

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Zoom**.
4. Complete an action:
  - For the GSD 22, select **2x Auto Zoom** or **4x Auto Zoom** to zoom in on the sonar data at two or four times magnification.
  - For the GSD 22, select **Manual Zoom** to set the depth range of the magnified area manually. Select **View Up** or **View Down** to set the depth of the magnified area. Select **Zoom In** or **Zoom Out** to increase or decrease the magnification of the magnified area. Select **Done**.
  - For the GSD 24/26, select **Set Zoom** to set the depth range of the magnified area manually. Select **View Up** or **View Down** to set the depth of the magnified area. Select **Zoom In** or **Zoom Out** to increase or decrease the magnification of the magnified area. Select **Auto** to automatically adjust the depth of the magnified area. Select **Done**.
  - For the GSD 22 and the GSD 24/26, select **Bottom Lock** to zoom in on sonar data from the bottom depth, and select **Up** or **Down** to set the depth range of the magnified area. Select **Done**.

### Adjusting the Gain

You can control the level of detail shown on the sonar screen. To see more detail, increase the gain. If the screen is cluttered, decrease the gain. With the GSD 24 and GSD 26, you can set the gain for each frequency independently.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Gain**.
4. If necessary, select a frequency.
5. Select an option to set the gain.
6. Select **Back**.

### Adjusting the Range of the Depth Scale

You can adjust the range of the depth scale that appears on the right side of the screen.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Range**.
4. Select an option.
5. Select **Done**.

## Adjusting the Range and Gain with Shortcuts

- When using a GPSMAP 4000/5000 series with a GSD 22 or GSD 24/26, select + and - to adjust the range.
- When using a GPSMAP 4000 series with a GSD 24/26, in full-screen sonar view, select the **Select** key to switch between adjusting the gain and the range, if necessary. Select + and - to adjust the range or gain.
- When using a GPSMAP 5000 series with a GSD 24/26, in full-screen sonar view, and the gain has been manually adjusted (page 89), select + and - along the bottom of the screen to adjust the gain.

## Setting the Sonar Screen Scroll Speed

You can set the rate at which the sonar screen scrolls from right to left.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More**.
5. Select **Scroll Speed**.
6. Complete an action:
  - Select **Ultrascroll®**, **Fast**, **Medium**, or **Slow** to set the scroll speed manually.
  - Select **Auto** to have the scroll speed automatically adjust to the water speed of your boat, if you are using a water-speed sensor or a speed-capable transducer.

## Adjusting the Picture Advance

You can increase the speed at which the sonar picture advances, by allowing it to draw more than one column of data on the screen for each column of sounder data received. For example, the 2/1 setting draws two columns of information on the screen per sounder return. This is helpful when you are using the sounder in deep water.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More > Appearance**.
5. Select **Pic. Advance**.
6. Select a picture advance setting.

## Shifting the Sonar Screen

**NOTE:** This feature is available only on the GSD 24 and GSD 26.

You can move the focus of the sonar screen to a specified depth for a more defined sonar screen. When you move the focus, data is not collected for areas outside of the selected range.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > More > Shift**.
4. Select **Up** and **Down** to adjust the view.
5. Select **Done**.

## Configuring the Advanced Sonar Settings

**NOTE:** These features are available only on the GSD 24 and GSD 26.

Before you can configure the **Temp. Source**, you must have a SD 26 and more than one water-temperature sensor or temperature-capable transducer.

With the GSD 24 and GSD 26, you can configure various sonar display and data source settings.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > More > Advanced**.
4. Select one or more options:
  - Select **Transmit** to stop the transducer from transmitting.
  - Select **TVG** to adjust the time-varying gain, which can reduce noise.
  - Select **Echo Stretch** to adjust how the targets appear on the screen. If the echo is too wide, the targets will blend together. If the echo is too narrow, the targets might be small and difficult to see.
  - Select **Bottom Tracking** to select which frequency to use for determining depth.
  - For the GSD 26, select **Temp. Source** to select which water-temperature sensor or temperature-capable transducer is the source for the water temperature log.

## Frequencies

### Selecting Frequencies

You can indicate which frequencies are used when using a dual-frequency transducer. With the GSD 26, you can use a chirp frequency to display more-defined targets on the screen.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Frequency**.
4. Complete an action:
  - Select **200 kHz** to show data from a 200 kHz sonar signal. This is useful mainly for more shallow, inland waters.
  - Select **50 kHz** to show data from a 50 kHz sonar signal. This is useful mainly for deeper waters.
  - For the GSD 22 or GSD 24, select **Dual** to show both 200 kHz and 50 kHz data
  - For a GSD 26 used with a broadband transducer, select **High Chirp** to transmit a chirp signal on the high channel.
  - For a GSD 26 used with a broadband transducer, select **Low Chirp** to transmit a chirp signal on the low channel.

### Managing Frequencies

**NOTE:** This feature is available only on the GSD 26.

You can set the GSD 26 to operate on a wide variety of popular, discrete fishing frequencies. For maximum depth penetration, set the frequency to a low setting.

### Setting up New Frequencies

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Frequency > Manage Frequencies**.
4. Select **New Preset**.
5. Select **High** or **Low**.
6. Enter a frequency:
  - For the GPSMAP 4000 series, use the **Rocker** or **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
7. Select **Done**.

## Noise and Interference Settings

The noise rejection settings allow you to reduce the interference and the amount of clutter shown on the sonar screen. With the GSD 24 and GSD 26, you can adjust the noise rejection settings for each frequency independently.

### Showing Surface Noise

You can set whether the returns near the surface of the water appear on the sonar screen. Hide surface noise to help reduce clutter.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More > Noise Reject**.
5. Select **Surface Noise > Show**.

### Adjusting the Noise Rejection

**NOTE:** This feature is available only on the GSD 22.

If you have manually increased or decreased the gain setting ([page 89](#)), you can minimize the appearance of weak sonar returns by increasing the noise rejection.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > Noise Reject**.
4. Select **Up** or **Down**.

### Minimizing Interference

**NOTE:** These features are available only on the GSD 24 and GSD 26.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > More > Noise Reject**.
4. Select one or more options:
  - Select **Interference** to reduce the effects of crosstalk and electrical interference.
  - Select **Color Limit** to hide part of the color palette to help eliminate fields of weak clutter.
  - Select **Smoothing** to make the sonar screen appear more consistent in deeper water.

## Sonar Screen Appearance

### Showing and Configuring a Depth Line

You can set whether a quick-reference depth line appears on the sonar screen.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More > Appearance**.
5. Select **Depth Line > Show**.
6. Set the depth of the reference line:
  - For the GPSMAP 4000 series, use the **Rocker**.
  - For the GPSMAP 5000 series, touch and drag the line.



## Showing the A-Scope

The A-Scope is a vertical flasher along the right side of the screen that instantaneously shows the range to targets along a scale.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More > Appearance**.
5. Select **A-Scope > On**.
6. For the GSD 24/26, select a peak hold time.

## Showing Overlay Numbers

Before you can show water-speed information, you must have a water-speed sensor or a speed-capable transducer installed and connected. Before you can show water-temperature information, you must have a water-temperature sensor or a temperature-capable transducer installed and connected.

You can show information, such as unit voltage and navigation information, on the sonar screens. The navigation information always includes GPS speed and GPS heading, and includes bearing and off-course information while navigating.





1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More > Appearance**.
5. Select **Overlay Numbers**.
6. Select an option for each data type.
 

If you select **Auto**, and if the transducer is capable, the chartplotter displays the data on the sonar screen.

## Configuring the Appearance of Suspended Targets

**NOTE:** This feature is available only on the GSD 22.

You can set how the sonar interprets suspended targets.

1. From the Home screen, select **Sonar > Sonar Setup > Appearance > Fish Symbols**.
2. Complete an action:
  - Select  to show suspended targets as symbols with background sonar information.
  - Select  to show suspended targets as symbols with background sonar information and target depth information.
  - Select  to show suspended targets as symbols.
  - Select  to show suspended targets as symbols with target depth information.

## Showing and Configuring the Whiteline

**NOTE:** This feature is available only on the GSD 22.

You can highlight the strongest signal from the bottom to help define the hardness or softness of the signal.

1. From the Home screen, select **Sonar > Sonar Setup > Appearance > Whiteline**.
2. Complete an action:
  - Select **High** to turn on the whiteline with the most-sensitive setting. Almost all strong returns are highlighted in white.
  - Select **Medium** to turn on the whiteline with many strong returns highlighted in white.
  - Select **Low** to turn on the whiteline with the least-sensitive setting. Only the strongest returns are highlighted in white.

## Highlighting the Edge

**NOTE:** This feature is available only on the GSD 24 and GSD 26.

You can highlight the strongest signal from the bottom to help define the hardness or softness of the signal.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > More > Appearance > Edge > Off**.

## Setting the Color Scheme

You can set the color scheme for all sonar screens.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu**.
4. Select an option:
  - For the GSD 22, select **Sonar Setup**.
  - For the GSD 24/26, select **More**.
5. Select **Appearance > Color Scheme**.
6. Select an option.

## Setting the Color Gain

**NOTE:** This feature is available only on the GSD 24 and GSD 26.

You can adjust the color gain to increase or decrease the visual intensity of the sonar screen.

1. From the Home screen, select **Sonar**.
2. Select a sonar view.
3. Select **Menu > More > Appearance > Color Gain**.
4. Select an option.

## Sonar Alarms

### Setting the Shallow Water and Deep Water Alarms

1. From the Home screen, select **Configure > Alarms > Sonar**.
2. Select **Shallow Water > On** to set an alarm to sound when the depth is less than the specified value.
3. Enter the depth that triggers the shallow water alarm:
  - For the GPSMAP 4000 series, use the **Rocker** or **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
4. Select **Done**.
5. Select **Deep Water > On** to set an alarm to sound when the depth is greater than the specified value.
6. Enter the depth that triggers the deep water alarm:
  - For the GPSMAP 4000 series, use the **Rocker** or **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
7. Select **Done**.

### Setting the Water Temperature Alarm




You can set an alarm to sound when the transducer reports a temperature that is 2°F (1.1°C) above or below the specified temperature.

1. From the Home screen, select **Configure > Alarms > Sonar > Water Temp > On**.
2. Enter a water temperature:
  - For the GPSMAP 4000 series, use the **Rocker** or the **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
3. Select **Done**.

## Setting the Fish Alarm

**NOTE:** This feature is available only on the GSD 22.

You can set an alarm to sound when the chartplotter detects a suspended target of the specified size.

1. From the Home screen, select **Configure > Alarms > Sonar > Fish**.
2. Complete an action:
  - Select  to sound an alarm for all fish sizes.
  - Select  to sound an alarm for medium and large fish only.
  - Select  to sound an alarm for large fish only.

## Setting the Contour Fish Alarm

**NOTE:** This feature is available only on the GSD 24 and GSD 26.

You can set an alarm to sound when the chartplotter detects a suspended target within the specified depth range and the specified color range.

1. From the Home screen, select **Configure > Alarms > Sonar > Fish > Contour**.
2. Select **Top**.
3. Enter a distance from the top to show an alarm for targets near the surface:
  - For the GPSMAP 4000 series, use the **Rocker** or **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
4. Select **Done**.
5. Select **Bottom**.
6. Enter a distance to the bottom to sound an alarm for targets near the bottom of the water:
  - For the GPSMAP 4000 series, use the **Rocker** or **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
7. Select **Done**.
8. Select **Intensity**.
9. Select a color, and select **Back**.

## Setting the Bottom Fish Alarm

**NOTE:** This feature is available only on the GSD 24 and GSD 26.

You can set an alarm to sound when the chartplotter detects a suspended target within the specified range from the bottom and the specified color range.

1. From the Home screen, select **Configure > Alarms > Sonar > Fish > Bottom**.
2. Select **Span**.
3. Enter a distance to the bottom to sound an alarm for targets near the bottom of the water:
  - For the GPSMAP 4000 series, use the **Rocker** or **Numeric Keypad**.
  - For the GPSMAP 5000 series, use the on-screen keyboard.
4. Select **Done**.
5. Select **Intensity**.
6. Select a color, and select **Back**.

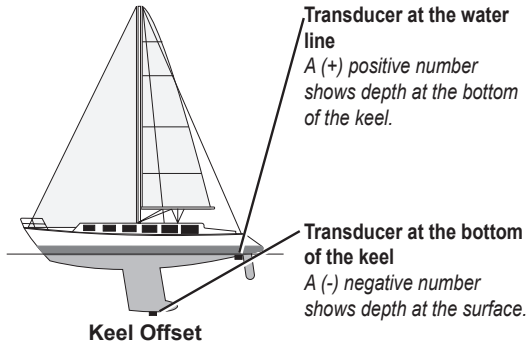
## Transducer Configuration

### Setting the Keel Offset

The keel offset compensates for the surface reading for the depth of a keel, making it possible to measure depth from the bottom of the keel instead of from the transducer location. Enter a positive number to offset for a keel. You can enter a negative number to compensate for a large vessel that may draw several feet of water.

1. Measure the keel offset, based on the location of the transducer:

- If the transducer is installed at the water line, measure the distance from the transducer location to the keel of the boat. Enter this value in step 3 as a positive number.
- If the transducer is installed at the bottom of the keel, measure the distance from the transducer to the water line. Enter this value in step 3 as a negative number.



2. From the Home screen, select **Configure > My Boat > Keel Offset**.

3. Enter the keel offset measured in step 1:

- For the GPSMAP 4000 series, use the **Rocker** or the **Numeric Keypad** to enter the distance measured in step 1. Ensure that you enter a positive or a negative number based on the location of the transducer.
- For the GPSMAP 5000 series, use the on-screen keyboard to enter the distance measured in step 1. Ensure that you enter a positive or a negative number based on the location of the transducer.

4. Select **Done**.

### Setting the Water Temperature Offset

You must have a water-temperature sensor or a temperature-capable transducer.

The temperature offset compensates for the temperature reading from a temperature sensor.

1. Measure the water temperature using the temperature sensor or temperature-capable transducer that is connected to the chartplotter.
2. Measure the water temperature using a different temperature sensor or thermometer that is known to be accurate.
3. Subtract the water temperature measured in step 1 from the water temperature measured in step 2. This is the temperature offset. Enter this value in step 5 as a positive number if the sensor connected to the chartplotter measures the water temperature as being colder than it actually is. Enter this value in step 5 as a negative number if the sensor connected to the chartplotter measures the water temperature as being warmer than it actually is.

4. From the Home screen, select **Configure > My Boat > Temp Offset**.

5. Enter the temperature offset calculated in step 3:

- For the GPSMAP 4000 series, use the **Rocker** or the **Numeric Keypad** to enter the temperature offset.
- For the GPSMAP 5000 series, use the on-screen keyboard to enter the temperature offset.

6. Select **Done**.

### Adjusting the Transducer Settings

**NOTE:** These features are available only on the GSD 24 and GSD 26.

1. From the Home screen, select **Sonar**.

2. Select a sonar view.

3. Select **Menu > More > Installation**.

4. Select one or more options:

- Select **Transmit Rate** to help reduce self-interference. You can increase the transmit rate to speed up the scroll speed, but this might also create self-interference.
- Select **Transmit Power** to reduce transducer ringing near the surface. Lower the Transmit Power to reduce the ringing.
- Select **Filter Width** to define the edges of the target. A shorter filter will define the edges of the targets. Longer filters will create softer target edges, but may reduce noise.
- Select **Transducer Diagnostics** to view details of the transducer.

## Digital Selective Calling

### Chartplotter and VHF Radio Functionality

The following table indicates the features that are available when you connect your chartplotter to a VHF radio over a NMEA 0183 network or a NMEA 2000 network.

Functionality	NMEA 0183 VHF Radio	NMEA 2000 VHF Radio	Garmin NMEA 0183 VHF Radio	Garmin NMEA 2000 VHF Radio
The chartplotter can transfer your GPS position to your radio. If your radio is capable, GPS position information is transmitted with DSC calls.	X	X	X	X
The chartplotter can receive DSC distress and position information from the radio ( <a href="#">page 98</a> ).	X	X	X	X
The chartplotter can track the positions of vessels sending position reports ( <a href="#">page 98</a> ).	X	X	X	X
The chartplotter allows you to quickly set up and send individual routine call details to your Garmin VHF radio ( <a href="#">page 100</a> ).				X
When you initiate a man-overboard distress call from your radio, the chartplotter shows the man-overboard screen and prompts you to navigate to the man-overboard point ( <a href="#">page 98</a> ).				X
When you initiate a man-overboard distress call from your chartplotter, the radio shows the Distress Call page to initiate a man-overboard distress call ( <a href="#">page 98</a> ).				X

### Turning On DSC

From the Home screen, select **Configure** > **Other Vessels** > **DSC**.

### About the DSC List

The DSC list is a log of the most-recent DSC calls and other DSC contacts you have entered. The DSC list can contain up to 100 entries. The DSC list shows the most-recent call from a boat. If a second call is received from the same boat, it replaces the first call in the call list.

### Viewing the DSC List

Your chartplotter must be connected to a VHF radio that supports DSC in order to view the DSC list.

From the Home screen, select **Information** > **DSC List**.

## Adding a DSC Contact

You can add a vessel to your DSC list. You can make calls to a DSC contact from the chartplotter ([page 100](#)).

1. From the Home screen, select **Information > DSC List > Add Contact**.
2. Enter the Maritime Mobile Service Identity (MMSI) of the vessel.
3. Select **Done**.
4. Enter the name of the vessel.
5. Select **Done**.

## Incoming Distress Calls

If your Garmin chartplotter and VHF radio are connected using NMEA 0183 or NMEA 2000, your chartplotter alerts you when your VHF radio receives a DSC distress call. If position information was sent with the distress call, that information is also available and recorded with the call.

The  symbol designates a distress call in the DSC list and marks the position of the vessel on the Navigation Chart at the time when the DSC distress call was sent.

### Viewing the DSC Distress Call Report

See “Viewing a Position Report” ([page 99](#)).

### Calling a Vessel in Distress

See “Making an Individual Routine Call” ([page 100](#)).

### Navigating to a Vessel in Distress

The  symbol designates a distress call in the DSC list and marks the position of a vessel on the Navigation Chart at the time a DSC distress call is sent.

See “Navigating to a Tracked Vessel” ([page 99](#)).

### Creating a Waypoint at the Position of a Vessel in Distress

See “Creating a Waypoint at the Position of a Tracked Vessel” ([page 99](#)).

### Editing Information in a DSC Call Report

See “Editing Information in a Position Report” ([page 99](#)).

### Deleting a DSC Call Report

See “Deleting a Position Report” ([page 99](#)).

## Man-Overboard Distress Calls Initiated from a VHF Radio

When your Garmin chartplotter is connected to a Garmin NMEA 2000-compatible radio, and you initiate a man-overboard DSC distress call from your radio, your Garmin chartplotter shows the man-overboard screen and prompts you to navigate to the man-overboard point. If you have a Garmin autopilot system connected to the network, your chartplotter prompts you to start a Williamson’s turn to the man-overboard point.

If you cancel the man-overboard distress call on the radio, the chartplotter screen prompting you to activate navigation to the man-overboard location disappears.

## Man-Overboard Distress Calls Initiated from the Chartplotter

When your Garmin chartplotter is connected to a Garmin NMEA 2000-compatible radio and you activate navigation to a man-overboard location, the radio shows the Distress Call page so you can quickly initiate a man-overboard distress call.

On the radio, press and hold the **DISTRESS** key for at least three seconds to send the distress call.

For information on placing distress calls from your radio, see your Garmin VHF Radio Owner’s Manual. You can mark an MOB and navigate to it ([page 33](#)).

## Position Tracking

When you connect your Garmin chartplotter to a VHF radio using NMEA 0183, you can track vessels that send position reports. This feature is also available with NMEA 2000, provided that the vessel sends the correct PGN data (PGN 129808; DSC Call Information).

Every position report call received is logged in the DSC list (page 97).

### Viewing a Position Report

1. From the Home screen, select **Information > DSC List**.
2. Select a position-report call.
3. Select **Review**.
4. Select **Next Page** or **Previous Page** to switch between details of the position report and a Navigation Chart marking the location.

### Calling a Tracked Vessel

See “Making an Individual Routine Call” (page 100).

### Navigating to a Tracked Vessel

1. From the Home screen, select **Information > DSC List**.
2. Select a position-report call.
3. Select **Review > Navigate To**.
4. Select **Go To** or **Route To** (page 31).

### Creating a Waypoint at the Position of a Tracked Vessel

1. From the Home screen, select **Information > DSC List**.
2. Select a position-report call.
3. Select **Review > Next Page > Create Waypoint**.

### Editing Information in a Position Report

1. From the Home screen, select **Information > DSC List**.
2. Select a position-report call.
3. Select **Review > Edit**.
4. Complete an action:
  - Select **Name**. Enter the name of the vessel. Select **Done**.
  - Select **Symbol** and select a new symbol. Select **Done**.
  - Select **Comment**. Enter the comment. Select **Done**.
  - Select **Trail > Show** to show a trail line for the vessel, if your radio is tracking the position of the vessel.
  - Select **Trail Line**. Select a color for the trail line.

### Deleting a Position-Report Call

1. From the Home screen, select **Information > DSC List**.
2. Select a position-report call.
3. Select **Review > Clear Report**.

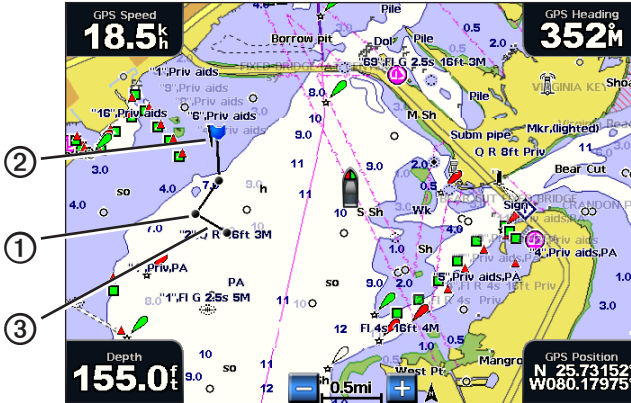


## Vessel Trails on the Navigation Chart

You can view trails for all tracked vessels on the Navigation Chart, the Fishing Chart, the Mariner's Eye 3D Chart view, and the Radar Overlay. By default, a black dot ① appears for each previously reported position of a tracked vessel, and a Blue Flag symbol ② indicates the last reported position of the vessel. A black line ③ indicating the path of the vessel also appears.

You must enable the DSC Trails setting in order to view trails for tracked vessels ([page 100](#)).

**NOTE:** The Mariner's Eye 3D chart view is available if you use a BlueChart g2 Vision data card. The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.



Vessel Trail on the Navigation Chart

### Showing and Setting the Duration of Trails for All Tracked Vessels

**NOTE:** The Mariner's Eye 3D chart view is available if you use a BlueChart g2 Vision data card. The Fishing Chart is available if you use a BlueChart g2 Vision data card or a BlueChart g2 Data card, or if your built-in map supports Fishing Charts.

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, Perspective 3D, or Mariner's Eye 3D**.
3. Select **Menu > Other Vessels > DSC > DSC Trails**.
4. Select the number of hours to show tracked vessels on the chart or 3D chart view.

For example, if you select **4 Hours**, all trail points that are less than four hours old appear for all tracked vessels.

## Individual Routine Calls

When you connect your Garmin chartplotter to a Garmin VHF NMEA 2000-compatible radio, you can use the chartplotter interface to set up an individual routine call. When setting up an individual routine call from your chartplotter, you can select the DSC channel on which you want to communicate ([page 100](#)). The radio transmits this request with your call.

### Selecting a DSC Channel

**NOTE:** The selection of a DSC channel is limited to those channels that are available in all frequency bands: 6, 8, 9, 10, 13, 15, 16, 17, 67, 68, 69, 71, 72, 73, or 77. The default channel is 72. If you select a different channel, the chartplotter uses that channel for subsequent calls until you call using another channel.

1. From the Home screen, select **Information > DSC List**.
2. Select a vessel or a station to call.
3. Select **Review > Call with Radio > Channel**.
4. Select a channel.

### Making an Individual Routine Call

**NOTE:** When initiating a call from the chartplotter, if the radio does not have an MMSI number programmed, the radio will not receive call information.



1. From the Home screen, select **Information > DSC List**.
2. Select a vessel or a station to call.
3. Select **Review > Call with Radio > Send**.

The chartplotter sends information about the call to the radio.

4. On your Garmin VHF radio, select **Call**.

## Making an Individual Routine Call to an AIS Target

When you connect your Garmin chartplotter to a Garmin VHF NMEA 2000-compatible radio, you can use the chartplotter interface to set up an individual routine call to an AIS target. Before you start the call, you can select a DSC channel other than the default channel, channel 72 ([page 100](#)).

1. From the Home screen, select **Charts**.
2. Select a chart or a 3D chart view.
3. Complete an action:
  - For the GPSMAP 4000 series, use the **Rocker** to select an AIS target 
  - For the GPSMAP 5000 series, touch an AIS target 
4. Select **AIS Vessel > Call with Radio > Send**.


The chartplotter sends information about the call to the radio.

5. On your Garmin VHF radio, select **Call**.

# Appendix

## Specifications

### Physical Specifications


Specification	Devices	Measurement
<b>Size</b>	GPSMAP 4008, 4208	7" H × 11.2" W × 4.2" D (176.9 × 284.4 × 106 mm)
	GPSMAP 4010, 4210	8.9" H × 13.4" W × 4.13" D (226.9 × 340.4 × 105.1 mm)
	GPSMAP 4012, 4212	9.5" H × 14.8" W × 4.13" D (240.5 × 375 × 105.1 mm)
	GPSMAP 5008, 5208	6.8" H × 10.1" W × 4.17" D (173.5 × 256 × 105.9 mm)
	GPSMAP 5012, 5212	9.47" H × 13" W × 4.7" D (240.5 × 330 × 119.2 mm)
	GPSMAP 5015, 5215	11.65" H × 15.55" W × 5.66" D (295.8 × 394.9 × 143.8 mm)
<b>Weight</b>	GPSMAP 4008, 4208	6 lb. (2.7 kg)
	GPSMAP 4010, 4210	8 lb. (3.5 kg)
	GPSMAP 4012, 4212	10 lb. (4.5 kg)
	GPSMAP 5008, 5208	6 lb. (2.7 kg)
	GPSMAP 5012, 5212	9 lb. (4.3 kg)
	GPSMAP 5015, 5215	12 lb. (5.4 kg)
<b>Display</b>	GPSMAP 4008, 4208	5.17" H × 6.85" W (131.4 × 174 mm)
	GPSMAP 4010, 4210	6.35" H × 8.43" W (161.4 × 214.2 mm)
	GPSMAP 4012, 4212	7.3" H × 9.7" W (184.3 × 245.8 mm)
	GPSMAP 5008, 5208	5" H × 6.73" W (128.2 × 170.9 mm)
	GPSMAP 5012, 5212	7.11" H × 9.3" W (180.49 × 235.97 mm)
	GPSMAP 5015, 5215	8.98" H × 11.97" W (228.1 × 304.1 mm)
<b>Case</b>	All models	Fully Gasketed, high-impact plastic and aluminum alloy, waterproof to IEC 60529 IPX-7
<b>Temp. Range</b>	All models	From 5°F to 131°F (from -15°C to 55°C)
<b>Compass Safe Distance</b>	GPSMAP 4008, 4208, 5008, 5208	31.5 in. (80 cm)
	GPSMAP 4010, 4210	39.4 in. (1 m)
	GPSMAP 4012, 4212, 5012, 5212	39.4 in. (1 m)
	GPSMAP 5015, 5215	15.8 in. (40 cm)
	- Lamps inside this product contain mercury and must be recycled or disposed of according to local, state, or federal laws. For information, go to: <a href="http://www.garmin.com/aboutGarmin/environment/disposal.jsp">www.garmin.com/aboutGarmin/environment/disposal.jsp</a> .	

### Power

Specification	Devices	Measurement
<b>Source</b>	All models	10–35 Vdc
<b>Usage</b>	GPSMAP 4008, 4208, 5008, 5208	35 W max. at 10 Vdc
	GPSMAP 4010, 4210, 4012, 4212, 5012, 5212	40 W max. at 10 Vdc
	GPSMAP 5015, 5215	60 W max. at 10 Vdc
<b>Fuse</b>	All models	7.5 A, 42 V fast-acting
<b>NMEA 2000 Load Equivalency Number (LEN)</b>	All models	2
<b>NMEA 2000 Draw</b>	All models	75 mA maximum

## Calibrating the GPSMAP 5000 Series Touchscreen

The GPSMAP 5000 series chartplotter touchscreen does not normally require calibration. However, if the buttons do not seem to be responding properly, use the following process to calibrate the screen.

1. While the chartplotter is turned off, press the  **Power** key.  
The Warning screen appears.
2. Touch anywhere on the black portion of the screen for approximately 15 seconds until the calibration screen appears.
3. Follow the instructions on the screen until “Calibration is complete” appears.
4. Touch **OK**.

## Screenshots

**NOTE:** To capture screenshots using a GPSMAP 5008, 5208, 5012, 5212, 5015 or 5215, you must use the Garmin RF Wireless Remote Control.

You can capture as a bitmap (.BMP) file a screenshot of any screen shown on your chartplotter, and transfer the file to your computer.

### Capturing Screenshots

1. Insert a memory card into the Data card slot on the front of the chartplotter.
2. Select **Configure > System > Beeper/Display > Screenshot Capture > On**.
3. Go to a screen you want to capture.
4. Take a screenshot:
  - For the GPSMAP 4000 series, press and hold the **HOME** key for at least six seconds.
  - For the GPSMAP 5000 series, press and hold the **HOME** button on the Garmin RF Wireless Remote Control for at least six seconds.

The Screenshot Taken window appears.

5. Select **OK**.

### Copying Screenshots to a Computer

1. Remove the memory card from the chartplotter and insert it into a Data card reader that is attached to a computer.
2. Complete an action:
  - In Windows®, click **Start > My Computer > Secure Digital storage device > Garmin > scrn**.
  - In Apple OS X, open the memory card icon on the desktop, then open **Garmin > scrn**.
3. Copy a .BMP file from the card and paste it to any location on the computer.

## Viewing GPS Satellite Locations

You can view the relative position of GPS satellites in the sky.

From the Home screen, select **Configure > System > GPS**.

## System Information

### Viewing System Information

See “Viewing System Information” ([page 3](#)).

### Viewing the Event Log

The event log shows a list of system events.

From the Home screen, select **Configure > System > System Information > Event Log**.

## Saving System Information to a Memory Card

You can save system information to a memory card as a troubleshooting tool. A Garmin Product Support representative may ask you to use this information to retrieve data about the marine network.

1. Insert a memory card into the Data card slot on the chartplotter.
2. Select **Configure > System > System Information > Garmin Devices > Save to Card**.
3. Remove the memory card.

## Restoring the Original Chartplotter Factory Settings

**NOTE:** This procedure deletes all settings information you have entered.

1. From the Home screen, select **Configure > System > System Information > Factory Settings > Reset**.
2. Select **Yes**.

## Communication with Wireless Devices

### Connecting a Wireless Device

You can allow wireless devices, such as a remote control or an optical mouse, to communicate with the chartplotter.

From the Home screen, select **Configure > Communications > Wireless Devices > New Connections > Yes**.

### Disconnecting a Wireless Device

1. From the Home screen, select **Configure > Communications > Wireless Devices**.
2. Select a wireless device.
3. Select **Disconnect**.

## Garmin Marine Network

The Garmin Marine Network allows you to share data from Garmin peripheral devices with Garmin chartplotters quickly and easily. You can connect a GPSMAP 4000/5000 series chartplotter to a Garmin Marine Network to receive data from and share data with other Marine Network-compatible devices and chartplotters.

## Transferring Data over the Garmin Marine Network

See “Chartplotter Data Management” (page 60).

## Configuring Networked Devices

See “Networked Device Configuration” (page 62).

## NMEA 0183 and NMEA 2000

A GPSMAP 4000/5000 series chartplotter can accept data from both NMEA 0183-compliant devices and certain NMEA 2000 devices connected to an existing NMEA 2000 network on your boat.

### NMEA 0183

The NMEA 0183 data cable included with each GPSMAP 4000/5000 series chartplotter supports the NMEA 0183 standard, which is used to wire various NMEA 0183-compliant devices, such as VHF radios, NMEA instruments, autopilots, wind sensors, and heading sensors.

A GPSMAP 4000/5000 series chartplotter can receive data from up to four NMEA 0183-compliant devices and send GPS data to up to six NMEA 0183-compliant devices.

To wire the GPSMAP 4000/5000 series chartplotter to optional NMEA 0183-compliant devices, see the *GPSMAP 4000/5000 Series Installation Instructions*.

### Approved NMEA 0183 Sentences

GPAPB, GPBOD, GPBWC, GPGGA, GPGLL, GPGSA, GPGSV, GPRMB, GPRMC, GPRTE, GPVTG, GPWPL, GPXTE, and Garmin proprietary sentences PGRME, PGRMM, and PGRMZ.

This chartplotter also includes support for the WPL sentence, DSC, and sonar NMEA 0183 input with support for the DPT (depth) or DBT, MTW (water temp), and VHW (water temp, speed, and heading) sentences.

### Configuring NMEA 0183 Output Sentences

You can configure how the chartplotter sees NMEA 0183 output sentences.

1. From the Home screen, select **Configure > Communications > NMEA 0183 Setup > Output Sentences**.
2. Select a setting: **Sounder, Route, System, or Garmin**.
3. Select one or more NMEA 0183 output sentences.
4. Repeat steps 2 and 3 to configure additional settings.

### Setting the Communication Format for Each NMEA 0183 Port

You can configure the input/output format for each port to use when connecting your chartplotter to external NMEA devices, a computer, or other Garmin devices.

1. From the Home screen, select **Configure > Communications > NMEA 0183 Setup > Port Types**.
2. Select an input or output port.
3. Select an input/output format:
  - Select **NMEA Standard** to support the input or output of standard NMEA 0183 data, DSC, and sonar NMEA input support for the DPT, MTW, and VHW sentences.
  - Select **NMEA High Speed** to support the input or output of standard 0183 data for most AIS receivers.
  - Select **Garmin** to support the input or output of Garmin-proprietary data for interfacing with Garmin software.
4. Repeat step 3 to configure additional input/output ports.

### Setting Decimal Precision for NMEA 0183 Position Output

You can adjust the number of digits to the right of the decimal point for transmission of NMEA 0183 position output.

1. From the Home screen, select **Configure > Communications > NMEA 0183 Setup > Posn. Precision**.
2. Select **Two Digits, Three Digits, or Four Digits**.

### Setting Decimal Precision for NMEA 0183 Cross Track Error (XTE) Output

You can adjust the number of digits to the right of the decimal point for transmission of NMEA 0183 XTE output.

1. From the Home screen, select **Configure > Communications > NMEA 0183 Setup > XTE Precision**.
2. Select **Two Digits or Three Digits**.

### Configuring Waypoint Identification

You can configure how the chartplotter provides waypoint identifiers.

1. From the Home screen, select **Configure > Communications > NMEA 0183 Setup > Waypoint IDs**.
2. Select **Names or Numbers**.

### Resetting NMEA 0183 Communication Default Settings

You can reset NMEA 0183 settings to their default values.

From the Home screen, select **Configure > Communications > NMEA 0183 Setup > Defaults > OK**.

### Viewing NMEA 0183 Diagnostic Information

The NMEA 0183 Diagnostics screen is a troubleshooting tool used by installers to verify that NMEA 0183 data is being sent across the system.

From the Home screen, select **Configure > Communications > NMEA 0183 Setup > Diagnostics**.

## NMEA 2000

GPSMAP 4000/5000 series chartplotters are NMEA 2000 certified and can receive data from a NMEA 2000 network installed on the boat to show specific information, such as depth, speed, water temperature, wind speed and direction, and engine data.

You can also name your engines and tanks so that you can better identify their location on the boat.

To connect a GPSMAP 4000/5000 series chartplotter to an existing NMEA 2000 network and to see a list of supported NMEA 2000 PGN numbers, see the *GPSMAP 4000/5000 Series Installation Instructions*.

### Viewing a List of NMEA 2000 Network Devices

You can view the devices connected to the NMEA 2000 network.

1. From the Home screen, select **Configure** > **Communications** > **NMEA 2000 Setup** > **Device List**.
2. Select a device for a list of options.

### Labeling Engines as Numbers

From the Home screen, select **Configure** > **Communications** > **NMEA 2000 Setup** > **Label Devices** > **Change Engine Labels** > **Use Numbers**.

### Labeling Engines as Names

1. From the Home screen, select **Configure** > **Communications** > **NMEA 2000 Setup** > **Label Devices** > **Change Engine Labels** > **Choose Names**.
2. Select the engine you want to name.
3. Select the location of the engine: **Port (P)**, **Center (C)**, **Starboard (S)**, **Fore (F)**, or **Aft (A)**.
4. Select the label you want to use for the engine.
5. Repeat steps 2 through 4 to label additional engines, if applicable, then select **Done**.

### Labeling Tanks as Numbers

1. From the Home screen, select **Configure** > **Communications** > **NMEA 2000 Setup** > **Label Devices** > **Change Tank Labels**.
2. Select the type of tank you want to label.
3. Select **Use Numbers**.

### Labeling Tanks as Names

1. From the Home screen, select **Configure** > **Communications** > **NMEA 2000 Setup** > **Label Devices** > **Change Tank Labels**.
2. Select the type of tank you want to label.
3. Select **Choose Names**.
4. Select a tank.
5. Select the location of the tank: **Port (P)**, **Center (C)**, **Starboard (S)**, **Fore (F)**, or **Aft (A)**.
6. Select the label you want to use for the tank.
7. Repeat steps 4 through 6 to label additional tanks, if applicable, then select **Done**.

### Selecting a Preferred Data Source

If more than one data source is available, you can select the data source you want to use.

1. From the Home screen, select **Configure** > **Communications** > **Preferred Sources**.
2. Select a type of data.
3. Select **Change Source**.
4. Select a data source.



## Transmitting NMEA 0183 Data over a NMEA 2000 Network

You can turn on, configure, or turn off output bridging. Output bridging occurs when a chartplotter takes NMEA 0183 data it receives from any source, formats it into NMEA 2000 data, and sends it over the NMEA 2000 bus.

1. From the Home screen, select **Configure > Communications > NMEA 2000 Setup > Output Bridging**.
2. Complete an action:
  - Select **On** to enable output bridging from the chartplotter.
  - Select **Auto** to allow the chartplotters on the NMEA 2000 network to negotiate with each other to determine which chartplotter will perform this function. Only one chartplotter on the NMEA 2000 network can bridge NMEA 0183 data over the NMEA 2000 bus at a time.

All GPSMAP 4000 series and 5000 series units are NMEA 2000 certified.



## Registering Your Device

Help us better support you by completing our online registration today.

1. Go to <http://my.garmin.com>.
2. Keep the original sales receipt, or a photocopy, in a safe place.



## Contacting Garmin Product Support

Contact Garmin Product Support if you have questions about this product.

- In the USA, go to [www.garmin.com/support](http://www.garmin.com/support), or contact Garmin USA by phone at (913) 397.8200 or (800) 800.1020.
- In the UK, contact Garmin (Europe) Ltd. by phone at 0808 2380000.
- In Europe, go to [www.garmin.com/support](http://www.garmin.com/support) and click **Contact Support** for in-country support information, or contact Garmin (Europe) Ltd. by phone at +44 (0) 870.8501241.

## Declaration of Conformity

Hereby, Garmin, declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. To view the full Declaration of Conformity, go to [www.garmin.com/compliance](http://www.garmin.com/compliance).

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