

GPSMAP® 400/500 series owner's manual




GARMIN®

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Introduction

This manual includes information for the following products:

GPSMAP® 430/430s	GPSMAP 440/440s
GPSMAP 431/431s	GPSMAP 441/441s
GPSMAP 530/530s	GPSMAP 535/535s
GPSMAP 531/531s	GPSMAP 536/536s
GPSMAP 540/540s	GPSMAP 545/545s
GPSMAP 541/541s	GPSMAP 546/546s

Tips and Shortcuts

- Press **HOME** from any screen to return to the Home screen.
- Press **MENU** from any of the main screens to access advanced settings.
- Press and release the  **Power** key to adjust the display settings.

Manual Conventions

In this manual, when you are instructed to select an item, small arrows (>) appear in the text. They indicate that you should highlight a series of items on the screen using the **Rocker**, and press the **SELECT** key after each item. For example, if you see “select **Charts** > **Navigation Chart**,” you should highlight **Charts**, and

press **SELECT**. Then highlight **Navigation Chart**, and press **SELECT** again.

Quick Links

- Turning the Unit On or Off: [page 3](#).
- Acquiring GPS Satellite Signals: [page 5](#).
- Inserting and Removing SD Cards: [page 6](#).
- Restoring Factory Settings: [page 6](#).
- Using the Navigation Chart: [page 8](#).
- Changing the Chart Settings: [page 12](#).
- Navigating to a Destination: [page 27](#)
- Creating and Using Waypoints: [page 29](#).
- Configuring System Settings: [page 41](#).
- Using Sonar: [page 50](#).
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See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

 - LAMPS INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE, OR FEDERAL LAWS.

For more information go to:

www.garmin.com/aboutGarmin/environment/disposal.jsp.

Declaration of Conformity (DoC)

Hereby, Garmin, declares that the GPSMAP 400 series and the GPSMAP 500 series is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.



To view the full Declaration of Conformity, see the Garmin Web site for your Garmin product: www.garmin.com.

Product Registration

Help us better support you by completing our online registration today. Go to <http://my.garmin.com>. Keep the original sales receipt, or a photocopy, in a safe place.

Contact Garmin

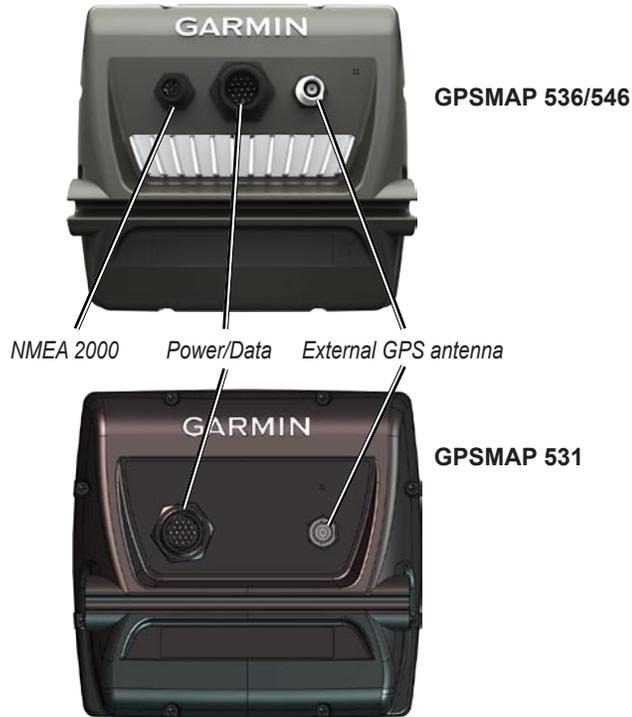
Contact Garmin Product Support if you have any questions while using your unit. In the USA, go to www.garmin.com/support, or contact Garmin USA by phone at (913) 397.8200 or (800) 800.1020.

In the UK, contact Garmin (Europe) Ltd. by phone at 0808 2380000.

In Europe, go to www.garmin.com/support and click **Contact Support** for in-country support information, or contact Garmin (Europe) Ltd. by phone at +44 (0) 870.8501241.

Getting Started

Unit Overview





GPSMAP 530/535/540/545

NMEA 2000®
XM antenna with
audio adapter
External
GPS antenna
Power/Data



GPSMAP 441/541



GPSMAP 430x/440x

External
GPS antenna
GXM 31 antenna
Power/Data



GPSMAP 430/431/440

Turning the Unit On or Off

To turn on the unit, press and release the **Power** key. When the Warning screen appears, select **I Agree** to view the Home screen.

NOTE: The first time you turn on your unit, you must configure the initial settings. See “Initializing Unit Settings.”

To turn off the unit, press and hold the **Power** key.



Home Screen

Initializing Unit Settings

The first time you turn on your unit, you must configure the initial settings.

NOTE: You can change these settings later using the Configure screen (page 6).

Language—select the language to display on your screen.

Welcome—select **OK**.

Store Demonstration—select **NO**. (This option is only available the first time the unit is turned on.)

NMEA 0183 Devices—if you have NMEA 0183 devices connected to a serial port, specify which ports are connected.

AIS Receiver (is not available if you select **None** for **NMEA Devices**)—Select **Yes** if one of the devices connected to a serial port is an AIS (automatic identification system) receiver.

Position Format—specify the coordinate system to use for location readings.

Time Format—specify whether you want the time shown in a **12-hour**, **24-hour**, or **UTC** (Universal Time Coordinated) format.

System Units—specify units for on-screen measurements as **Statute**, **Metric**, or **Nautical**.

Minimum Safe Depth—select the minimum safe depth for your boat. Refer to your boat specifications for more information.

Shallow Water Alarm—only available if you are receiving NMEA sonar depth data. Select **Yes** or **No**.

Minimum Overhead Clearance—select the minimum overhead clearance for your boat. Refer to your boat specifications for more information.

AIS Alarm Range (is not available if you select **No** for **AIS Receiver**)—select the distance within which an alarm will sound if an AIS vessel nears your boat (page 49).

AIS Alarm Time To (is not available if you select **No** for **AIS Receiver**)—select the time within which an alarm will sound if an AIS vessel is on track to intersect the Safe Zone around your boat (page 49).

If a water speed wheel is detected, a message will ask if you want to calibrate it now. Select **Yes** or **No**.

Adjusting the Backlight

1. Press and release the **Power** key.
2. Select **Backlight**.
3. Press left or right on the **Rocker** to manually adjust the backlight.

NOTE: Press the **Power** key repeatedly to cycle between maximum backlight, minimum backlight, and your manual setting.



To allow the unit to automatically adjust the backlight based on ambient light, select **Auto Backlight** (automatic backlight is available only on the GPSMAP 535, 536, 545, and 546).

To switch between Day mode and Night mode:

1. Press and release the **Power** key.
2. Select **Color Mode**.
3. Press left or right on the **Rocker** to switch between modes.



Using the Keypad



POWER/BACKLIGHT—Press and hold to turn the unit on or off. Press and release to adjust the backlight and day and night modes.

RANGE (-/+)—Press to adjust the range of the sonar. Press to zoom in or out on a chart. Press to page up or down on lists.

ROCKER—Press to adjust the range of the sonar, to zoom in or out on a chart, to page up or down on lists, to scroll the map, or to adjust the backlight level.

MARK—Press to mark a waypoint at your current location.

SELECT—Press to select highlighted items.

HOME—Press to return to the Home screen.

MENU—Press to access additional settings and configuration options. Press to return to the previous screen when indicated.

Acquiring GPS Satellite Signals

When you turn on the unit, the GPS receiver must collect satellite data and establish the current location. When the unit acquires satellite signals, the signal strength bars at the top of the Home screen are green . When the unit loses satellite signals, the green bars disappear  and the position icon displays a flashing question mark.

For more information about GPS, visit the Garmin Web site at www.garmin.com/aboutGPS.

Using Simulator Mode

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



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

To turn on Simulator mode:

1. From the Home screen select **Configure > System > Simulator**.
2. Select **Setup** to set speed, track control, and position.

Viewing System Information

You can view the software version, the basemap version, supplemental map information (if applicable), the unit ID number, and your XM[®] WX Satellite Weather[®] Radio ID (if available).

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**.

Restoring the Original Factory Settings



NOTICE: This procedure deletes any information you have entered.

1. From the Home screen, select **Configure > System > System Information > Factory Settings**.
2. Select **Yes** to restore all factory settings, or select **No** to cancel. The unit reboots and prompts you to adjust unit settings ([page 3](#)).

Inserting and Removing SD Cards

Your unit supports Secure Digital (SD) cards. Insert optional BlueChart[®] g2 Vision[®] SD cards to view high-resolution satellite imagery and aerial reference photos of ports, harbors, marinas and other points of interest. Insert blank SD cards to transfer data such as waypoints, routes, and tracks to another compatible Garmin unit or a computer ([page 38](#)). The SD card slot is located on the lower-right corner of the unit.

To insert the SD card, open the access door and press the SD card in until it clicks. Press the card in again and release it to eject it from the chartplotter.



NOTE: If using an SD card to transfer waypoints from MapSource[®], update to the most-current version of MapSource by clicking **Help** > **Check for Software Updates**, or check the Garmin Web site at www.garmin.com.

Understanding the Home Screen

Use the Home screen to access all other screens. Press **HOME** from any screen to return to the Home screen.

- **Charts**—selects Navigation, Fishing, Perspective 3D, Mariner’s Eye 3D, Fish Eye 3D, and Split Navigation charts.

NOTE: Mariner’s Eye 3D, Fish Eye 3D, and Fishing charts are available only if you use a BlueChart g2 Vision SD card.

- **Sonar**—set up and access sonar information ([page 50](#)).

NOTE: You must have an “s” series unit (such as a GPSMAP 441s) with a connected transducer or have a connection to a Garmin sounder via CANet to use sonar features.

- **Chart/Sonar**—set up the screen to view a chart and sonar in a split screen ([page 21](#)).
- **Where To?**—access navigation features ([page 27](#)).
- **Information**—view information including dashboard options, tides, currents, celestial data, user data, and information about other vessels ([page 34](#)).
- **Configure**—access unit and system settings ([page 41](#)).

Using Charts

Your chartplotter has a worldwide map and a built-in detailed map of US inland lakes, or BlueChart g2 cartography for the USA and Bahamas shoreline.

- **Navigation Chart**—displays all relevant navigation data available on your preloaded maps, including buoys, lights, cables, depth soundings, marinas, and tide stations, in an overhead view.
- **Perspective 3D**—provides a view from above and behind the boat (according to your course), and provides a visual navigation aid.
- **Split Navigation Chart**—displays two different zoom levels of the Navigation chart at the same time.

Fishing charts, Fish Eye 3D, and Mariner's Eye 3D views are available when using optional BlueChart g2 Vision preprogrammed SD cards.

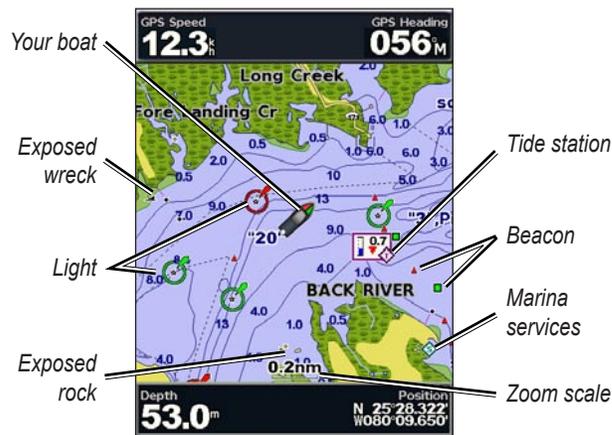
- **Fishing Chart**—provides a view of the chart with enhanced bottom contours and without navigational data. This chart works well for offshore deep-sea fishing.
- **Fish Eye 3D**—provides an underwater 3D view that visually represents the sea floor according to the information on the chart.

- **Mariner's Eye 3D**—provides a view from above and behind the boat as a three-dimensional navigation aid. The BlueChart g2 Vision Mariner's Eye 3D is more detailed than the preloaded data.

Using the Navigation Chart

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

To access a Navigation chart, from the Home screen, select **Charts > Navigation Chart**.



Navigation Chart with g2 Vision

Navigation Chart Menu

To access additional settings or options for the Navigation chart, press **MENU**.

Full Screen Map—view the Navigation or Fishing chart in full-screen mode, without numbers.

Waypoints & Tracks—view, add, and configure waypoints (page 29) and tracks (page 31).

Other Vessels—view information about other vessels if your chartplotter is connected to an external AIS (Automatic Identification System) or DSC (Digital Selective Calling) device (page 55).

Stop Navigation—stop navigating to your destination (only available while navigating).

Data Bars—show or hide cruising, navigation, fishing, fuel, or sailing numbers.

Data
bars



- **Cruising**—turn the GPS Speed, GPS Heading, Depth, and GPS Position data bar on or off. Select **Data Bar Setup** to configure the position of the data on the screen.
- **Navigation**—turn the Distance to Destination, Arrival, Off Course, and Bearing data bar on or off. Select **Auto** to turn on the Navigation data bar whenever you are navigating to a destination. Select **Data Bar Setup** to configure the Route Leg, Next Turn, and Destination options.
- **Fishing**—turn the Depth, Water Temperature, and Water Speed data bar on or off.

- **Fuel**—turn the Fuel Rate, Remaining Fuel, Range, and Fuel Economy data bar on or off.
- **Sailing**—turn the Water Speed, Wind Speed, Wind Angle, and Wind Velocity Made Good (VMG) data bar on or off. Select **Wind** to toggle between True and Apparent wind speed and wind angle.
- **XM Audio**—displays an XM audio bar at the bottom of the screen if XM audio is available ([page 68](#)).
- **Compass Tape**—displayed at the top of the screen to provide a graphical representation of heading.

Understanding How Wind VMG and Waypoint VMG Appear in the Data Bars

The chartplotter automatically switches between displaying Wind Velocity Made Good (VMG) and Waypoint VMG in the data bars.

Waypoint VMG appears under these conditions:

- The Route Leg data bar displays Waypoint VMG when you are navigating a route or an automatic guidance line.
- The Sailing data bar displays Waypoint VMG when you are navigating a route or an automatic guidance line and you turn off the Route Leg data bar.

Wind VMG appears under these conditions:

- The Sailing data bar displays Wind VMG when you are not navigating a route or an automatic guidance line.
- The Sailing data bar displays Wind VMG when the Route Leg data bar is on.

Chart Setup—customize the Navigation chart settings ([page 12](#)).

Understanding Chart Data

BlueChart g2 and BlueChart g2 Vision charts use graphic symbols to denote map features that follow the standards for USA and international charts.

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 the Chart

1. From the Home screen, select **Charts**.
2. Select **Navigation Chart, Fishing Chart, or Split Navigation Chart**.
3. Use the **Rocker** to select the point on the chart to which you want to go.
4. Press **SELECT**.

5. Select **Navigate To**.
6. Select **Go To** (or **Guide To** when using a preprogrammed BlueChart g2 Vision card for Automatic Guidance).
7. Follow the colored line on the screen to the destination.

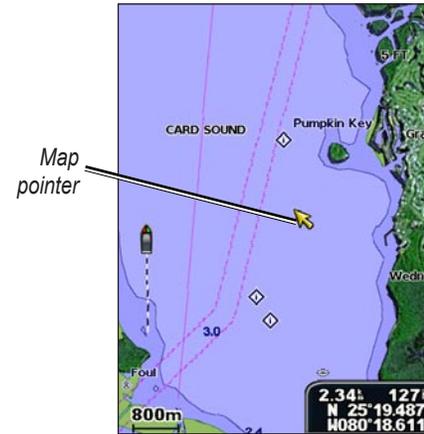
To create a route to a point on the chart, see [page 30](#).

Panning the Navigation Chart

Use the **Rocker** to move the map pointer (🖱️) away from your current location and to scroll to other areas on the Navigation chart. As you pan past the edge of the current map display, the screen scrolls forward to provide continuous map coverage.

As you move the map pointer, you can view the distance and bearing from your current location and the map pointer's location coordinates in the lower-right corner of the map.

To pan the map, press up, down, right, or left on the **Rocker**.



To stop panning, press **MENU**, and then select **Stop Panning**.

Zooming In and Out on the Map

The **Range** (-/+) keys control the zoom level, indicated by the scale at the bottom of the Navigation chart (**800m**). The bar under the number represents that distance on the map.

Accessing Additional Object Information

Use the map pointer (🖱️) to view information about on-screen map items, waypoints, and charts.

To access additional object information:

1. On the Navigation chart, highlight an item with the map pointer, and press **SELECT**.



2. Select the item. If more than one item is in the area, select **Review**, and then select the item.

Viewing Tide-Station Information

Tide-station information appears on the chart with a detailed icon showing the relevant tide level. You can view an in-depth graph for a tide station to help predict the tide level at different times or on different days.

Use the map pointer (🖱️) to highlight a tide-station icon (📍), and press **SELECT**.

For more information about tides, see [page 36](#).

Changing the Navigation Chart Settings

To change chart settings from the home screen, select **Charts** > **Navigation Chart** > **MENU** > **Chart Setup**.

Photos—sets the high-resolution satellite images to **Off**, **Land Only**, or **On**. High-resolution satellite imagery is only available while using a BlueChart g2 Vision SD card.

Tides/Currents—turns tides and currents on or off ([page 36](#)).

Service Points—turns marine service points on or off.

Roses—displays a compass rose around your boat, indicating compass direction. True wind or apparent wind direction displays if the unit is connected to a compatible marine wind sensor.

Weather—sets up and displays various weather parameters, including precipitation (NEXRAD), cloud cover, visibility, WX buoys, and the weather legend. Sea temperature and fish species can be displayed on the Fishing chart (page 19).

The **Weather** feature is only available if the chartplotter is connected to a weather module and you have an XM® subscription. See page 60 for additional information.

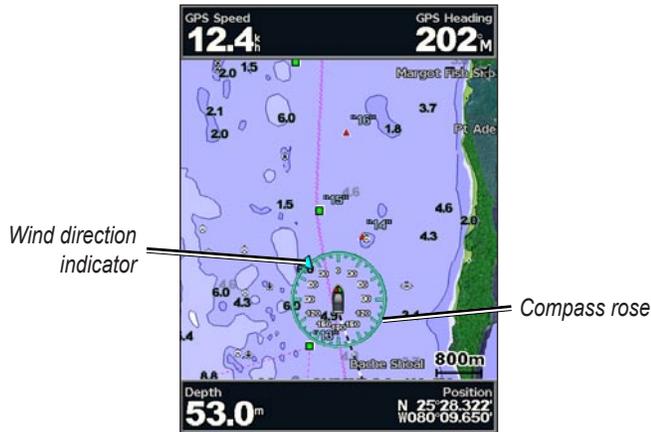
NOTE: If **Weather** is set to **Off**, none of the weather options will be visible on the chart.

Changing the Chart Appearance

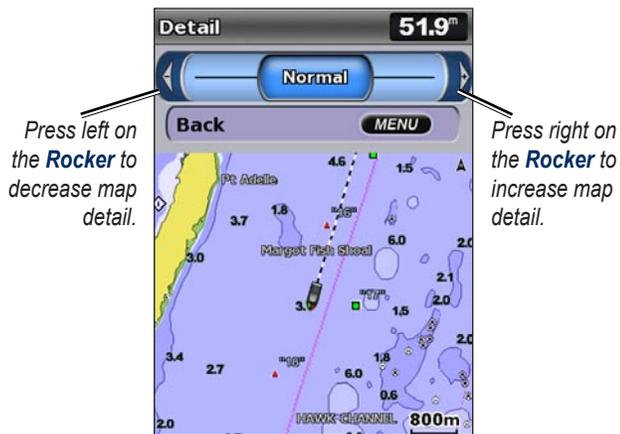
From the Home screen, select **Charts > Navigation Chart > MENU > Chart Setup > Chart Appearance**.

Orientation—changes the perspective of the map display.

- **North Up**—sets the top of the map display to a north heading.
- **Head Up**—sets the map display to the current track heading.
- **Course Up**—sets the map so the direction of navigation is always up. The heading line appears vertically on the screen if shown.



Detail—adjusts the amount of detail shown on the map at different zoom levels.



Heading Line—draws an extension line from the bow of the boat in the direction of travel.

- **Off**—turns the heading line off.
- **Distance**—sets the distance to the end of the heading line.
- **Time**—sets the amount of time until you reach the end of the heading line.

World Map—displays a basic world map or satellite imagery (when **Full World Map** is selected).

Spot Depths—turns spot soundings on or off and sets a dangerous depth.

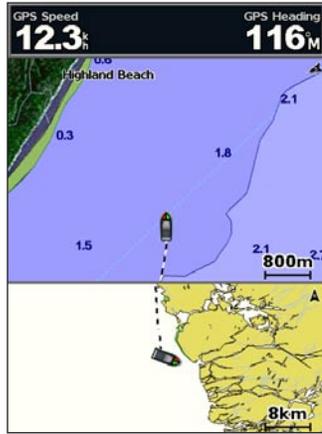
Safety Shading—identifies a selected depth. Areas with depths shallower than the specified value are shaded in blue, while areas with depths greater than the specified value are shaded in white. The shading is always drawn at, or deeper than, the selected depth.

Symbols—changes symbol preferences.

- **Navaid Size**—adjusts the size of the navaid symbols shown on the map.
- **Navaid Type**—selects the navaid symbol set (NOAA or IALA).
- **Land POIs**—turns the display of land POIs (points of interest) on or off.
- **Light Sectors**—turns the sector in which a navigational light is visible on or off. Selecting **Auto** filters out light sectors, depending on the zoom level.
- **Chart Borders**—turns chart borders on when using a BlueChart g2 Vision SD card and you want to see what area the maps cover.
- **Photo Points**—turns camera icons ([page 21](#)) on or off when using a BlueChart g2 Vision SD card.

Using the Split Navigation Chart

Use the Split Navigation chart to view two different zoom levels of the Navigation chart at the same time.



Split Navigation Chart
(with a BlueChart g2 Vision card)

The top half of the screen is zoomed in 10 times closer than the bottom half of the screen. The **Range** (-/+) keys control the zoom level.

Press **MENU** to view additional settings (page 9).

Using Perspective 3D

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

To access the Perspective 3D screen from the Home screen, select **Charts > Perspective 3D**.

Press the **Range** (+) key to move the view closer to your boat and lower to the water. Press the **Range** (-) key to move the view away from the boat.

To view details about nav aids such as beacons, lights, and obstructions:

1. Use the **Rocker** to point to the nav aid. When the cursor is over the nav aid, the nav aid is highlighted.
2. Press **SELECT** to view details about the nav aid.

Perspective 3D Settings

To access additional settings or options from the Perspective 3D screen, select **MENU**.

Waypoints & Tracks—view, add, and configure waypoints and tracks.

Using Charts

- **Tracks**—turn tracks on or off ([page 31](#)).
- **Waypoints**—view, sort, or filter existing waypoints, or create new ones.
- **New Waypoint**—edit, delete, or create a new waypoint.
- **Active Tracks**—manage tracks ([page 31](#)).
- **Saved Tracks**—view a list of tracks that have been saved.

Other Vessels—view information about other vessels. To view information about other vessels, your unit must be connected to an external AIS (Automatic Identification System) or DSC (Digital Selective Calling) device.

Weather Radar—turn the display of NEXRAD weather on or off. (The **Weather** feature is only available if the chartplotter is connected to a weather module and you have an XM subscription.) See [page 60](#) for additional information.

Data Bars ([page 9](#))—show or hide cruising, navigation, fishing, fuel, sailing numbers, or compass tape.

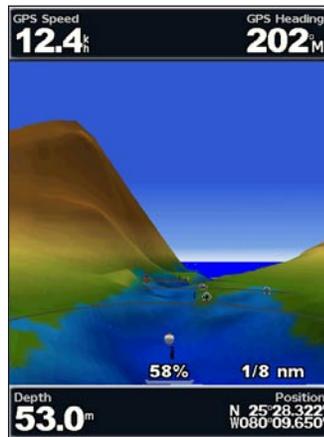
Chart Appearance—customize the Perspective 3D chart.

- **Range Rings**—toggles the range rings on or off to provide distance measurement.

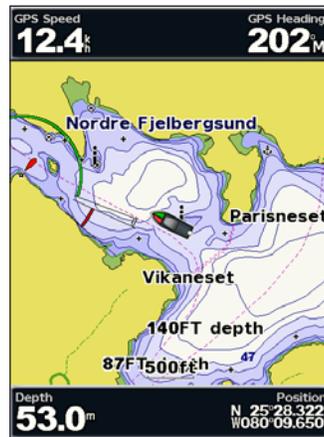
- **Lane Width**—adjusts the width of the course line drawn when navigating. This setting also affects routes (**Route To**), but does not affect automatic guidance (**Guide To**).

Using Mariner's Eye 3D

A BlueChart g2 Vision SD 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 is beneficial when trying to identify entry and exit routes in unfamiliar harbors or anchorages.



Mariner's Eye 3D



Navigation Chart

Press the **Range (+)** key to move the view closer to your boat and lower to the water. Press the **Range (-)** key to move the view away from the boat. The scale (**58%**) temporarily appears at the bottom of the screen.

To view details about nav aids such as beacons, lights, and obstructions:

1. Use the **Rocker** to point to the nav aid. When the cursor is over the nav aid, the nav aid is highlighted.
2. Press **SELECT** to view details about the nav aid.

Mariner's Eye 3D Settings

To access additional settings or options from the Mariner's Eye 3D screen, press **MENU**.

Weather Radar—turn the display of NEXRAD weather on or off. (The **Weather** feature is only available if the chartplotter is connected to a weather module and you have an XM subscription.) See [page 60](#) for additional information.

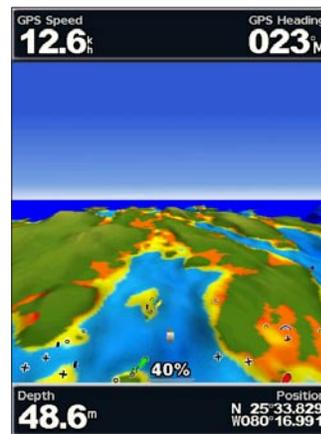
For settings and options related to Waypoints & Tracks, Other Vessels, and Data Bars, see “Navigation Chart Menu” on [page 9](#).

To customize the appearance of the Mariner's Eye 3D screen, select **MENU > Chart Appearance**.

Style—Selects how chart data is displayed over 3D terrain.

- **Classic**—uses color schemes to indicate 3D terrain.
- **Charts**—provides chart information in a 3D view.
- **Photos**—provides satellite photo imagery in addition to chart information.

Hazard Colors—Turns hazard colors on or off. The **Off** setting shows the land as seen from the water. The **On** setting indicates shallow water and land with a color scale. Blue indicates deep water, yellow is shallow water, and red is very shallow water.



Mariner's Eye 3D (Water Hazard Colors)

Using Charts

Range Rings—toggles the range rings on or off to provide distance measurement.

Safe Depth—adjusts the depth at which red indicates dangerous depths.

Lane Width—adjusts the width of the course line drawn when navigating. This setting also affects routes (**Route To**), but does not affect automatic guidance (**Guide To**).

Using 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. Use the **Range** keys to adjust the view.

NOTE: You must have an “s” series unit (such as a GPSMAP 430s) with a connected transducer or have a connection to a Garmin sounder via CANet.

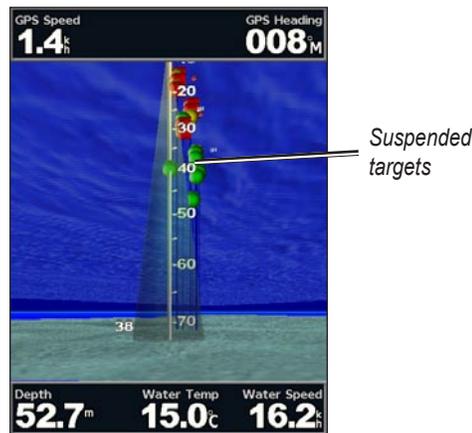
Fish Eye 3D Settings

To access additional settings or options for the Fish Eye 3D screen, press **MENU**.

View—selects a fish eye view of fore, aft, port, or starboard.

Sonar Cone (only available if sonar is present)—turns a cone that shows the area covered by your transducer on or off.

Fish Symbols (only available if sonar is present)—displays suspended targets (such as fish). Targets are indicated by red, green, and yellow spheres. Red indicates the largest targets and green indicates the smallest targets.



Fish Eye 3D

Tracks—turns the track log on or off.

Data Bars—show or hide cruising, navigation, fishing, fuel, or sailing numbers ([page 9](#)).

Using Fishing Charts

Use the Fishing chart for a detailed, unobstructed view of the bottom contours on the chart.

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

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



To access additional settings from the Fishing chart, press **MENU**.

Nav aids—displays navigational aids, such as beacons, lights, and obstructions.

For settings and options related to Full Screen Map, Waypoints & Tracks, Other Vessels, and Data Bars, see “Navigation Chart Menu” on [page 9](#).

To customize the appearance of the Fishing Chart screen, select **MENU > Chart Setup** ([page 12](#)).

Enabling High Resolution Satellite Imagery

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

To enable satellite imagery:

1. While viewing the Navigation chart, press **MENU**.
2. Select **Chart Setup > Photos**.
3. Select one of the following:
 - **Off**—standard chart information is shown on the map.
 - **Land Only**—standard chart information is shown on water with photos overlaying the land.
 - **On**—photos overlay both the water and the land at a specified opacity. The higher you set the percentage, the more the satellite photos will cover both land and water.

NOTE: When enabled, the high-resolution satellite images are only present at closer zoom levels. If you cannot see the high-resolution images in your BlueChart g2 Vision region, either zoom in further using the **Range (+)** key, or set the detail level higher ([page 14](#)).

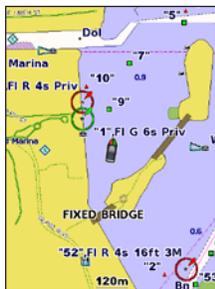


Photo Overlay Off



Land Only Photo Overlay



Photo Overlay at 50%

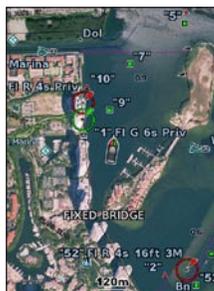


Photo Overlay at 100%

Viewing Aerial Photos

Preprogrammed BlueChart g2 Vision SD 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.



Aerial Photo

NOTE: Use the **Range (-/+)** keys to zoom in and out while viewing the aerial photo on the full screen.

To access aerial photos from the Navigation chart:

Use the **Rocker** to highlight a camera icon with the pointer, and select **Aerial Photo** or **Review**.



Viewing Current-station Information

If current stations are available in your BlueChart g2 Vision region, they appear on the Navigation chart as highlighted arrows. These detailed icons show the speed and direction of the current at a glance. Select **Review** or the name of the station to display a current graph.



Current-station icon

Detailed Road and POI Data

BlueChart g2 Vision contains detailed road and points of interest (POI) data, which includes highly detailed coastal roads and POIs such as restaurants, lodging, local attractions and more. For instructions on searching for, and navigating to, these POIs, see the “Where To?” section beginning on [page 27](#).

Using Automatic Guidance

Automatic Guidance automatically creates and suggests routes based on available BlueChart g2 Vision chart information. See [page 43](#) for instructions on setting up Automatic Guidance for your boat. The “Where To?” section on [page 27](#) contains more information on how to use Automatic Guidance.

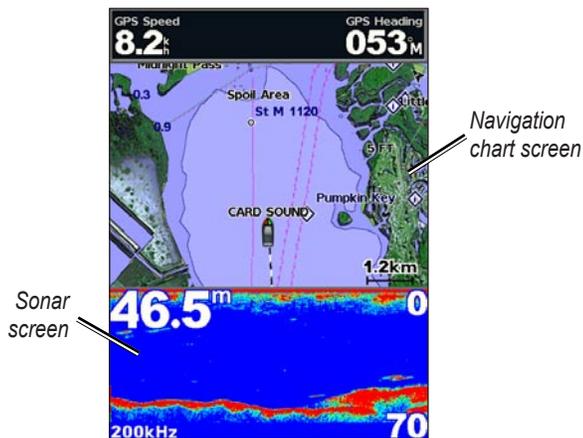
Using the Chart/Sonar Screen

NOTE: The Chart/Sonar screen, like the Sonar screen, is only available when using a sonar-capable unit with a transducer attached.

Use the Chart/Sonar screen to view the Navigation chart, Fishing chart, Mariner’s Eye 3D, or Fish Eye 3D and sonar at the same time.

To view a split chart/sonar screen:

1. From the Home screen, select **Chart/Sonar**.
2. Select the type of chart on the split screen.



Navigation/Sonar Combination

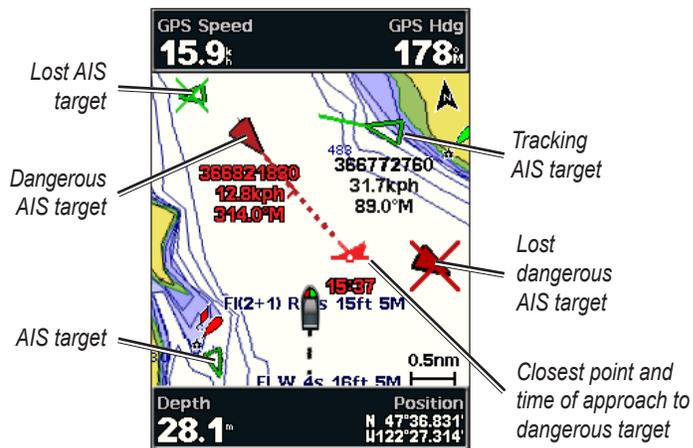
To access additional settings or options for the chart/sonar screen, press **MENU**.

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
	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.
	The target has been selected.
	The target has been 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 has been set to Show (page 25). If the AIS transmission from the vessel is lost, a message banner appears.
	Target has been lost. A green X indicates that the AIS transmission from the vessel has been 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.
	Dangerous 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 has been set to Off , the target flashes, but the audible alarm does not sound and the alarm banner does not appear. If the AIS transmission from the vessel is lost, a message banner appears.

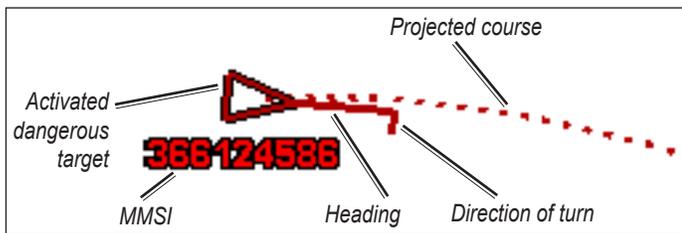
	The location of this symbol indicates the closest point of approach to a dangerous target, and the numbers near the symbol indicate the time to the closest point of approach to that target.
	Dangerous target has been lost. A red X indicates that the AIS transmission from the vessel has been lost, and 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.

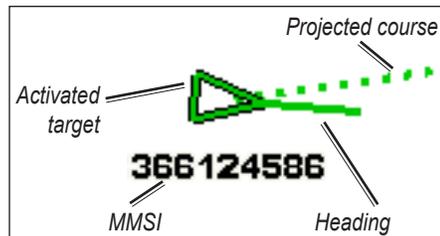
The projected course of an activated AIS target appears as a dashed line on a chart or a 3D chart view. The length of the projected course line is based on the value of the projected heading setting (page 25). If an activated AIS target is not transmitting speed information, or if the vessel is not moving, a projected course line does not appear. Changes in the speed, course over ground, or 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, the projected course 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 at the end of the heading line. The length of the barb does not change.



Target with Course over Ground, Heading, and Rate of Turn

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



Target with Course over Ground and Heading

Showing AIS 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.

You can configure how other vessels appear on a chart or on a 3D chart view. The display range 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 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**, or **Mariner's Eye 3D**.
3. Select **MENU > Other Vessels > Display Setup**.
 - **Display Range**—allows you to select the distance from your location in which AIS vessels appear.
 - **Details**—hides or shows details about AIS-activated vessels.
 - **Proj. Heading**—allows you to set the projected heading time for AIS-activated vessels.
 - **Trails**—allows you to select the length of the track that appears using a trail, or turn the trail off.

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**, or **Mariner's Eye 3D**.
3. Use the **Rocker** and **SELECT** button to 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**, or **Mariner's Eye 3D**.
3. Use the **Rocker** and **SELECT** button to select an AIS vessel.
4. Select **AIS Vessel**.

Deactivating 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**, or **Mariner's Eye 3D**.
3. Use the **Rocker** to select the AIS vessel.
4. Select **AIS Vessel > Deactivate**.

Setting the Safe-zone Collision Alarm

The safe-zone collision alarm can be used with AIS. The safe zone is used for collision avoidance, and can be customized. All safe-zone collision alarm settings are applied to all charts.

1. From the Home screen, select **Configure > Other Vessels > AIS Alarm > On**.

A message banner appears and an alarm sounds when 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 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 Threats

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**, or **Mariner's Eye 3D**.
3. Select **MENU > Other Vessels > AIS List**.

Where To?

Use the **Where To?** option on the Home screen to search for, and navigate to, waypoints, routes, tracks, and services such as nearby fuel, repairs, and ramps.

NOTE: You must create waypoints and routes before you can navigate to them.

You can navigate 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 to the route.
- **Guide To**—searches BlueChart g2 Vision chart data to suggest the best path to your destination. You must be using a BlueChart g2 Vision SD card for this option to appear.



CAUTION: **Guide To** does not ensure obstacle and bottom clearance. For safety, always resolve any discrepancies or questions before continuing navigation.

Navigating to a Destination

You can search for, and navigate to, waypoints, routes, tracks, and services such as nearby fuel, repairs, and ramps.

To begin navigating:

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



3. Select a destination.



NOTE: Press the right or left arrow to view additional information or to display the location on a chart.

4. Select **Navigate To**.

5. Select **Go To**.

OR

Select **Guide To** when using a preprogrammed BlueChart g2 Vision card to use Automatic Guidance.

6. Follow the colored line on the screen to the destination.



To stop navigating:

Press **MENU**, and select **Stop Navigating**.

To search for a destination by name:

1. From the Home screen, select **Where To?** > **Search by Name**.
2. Use the **Rocker** to select characters and spell at least a portion of the name of your destination.
3. Press **SELECT** to view the 50 nearest destinations that contain your search criteria.
4. Select the location > **Navigate To** > **Go To** or **Route To** (or **Guide To** when using a preprogrammed BlueChart g2 Vision card).

Creating and Using Waypoints

You can store up to 1,500 waypoints (3,000 waypoints for models GPSMAP 431/441/531/541/536/546, including “s” models) with a user-defined name, symbol, depth, water temperature, and comment for each waypoint.

To create a new waypoint:

1. From the Home screen, select **Charts > Navigation Chart**.
2. Use the map pointer () to select the location you want to designate as a waypoint.
3. Press **SELECT**.
4. Select **Create Waypoint**.

To mark your current location as a waypoint:

From any screen, press the **MARK** key.

- **Edit Waypoint**—designate a specific name, symbol, water depth, or water temperature.
- **Delete**—deletes the waypoint.
- **Man Overboard**—designates the current location as a Man Overboard location.
- **Right or Left Arrow**—switches between waypoint information and the Navigation chart.

NOTE: Selecting **MARK** creates a waypoint only at your present location.

To edit an existing waypoint:

1. From the Navigation chart, use the map pointer () to highlight the waypoint on the Navigation chart.
OR
From the Home screen, select **Information > User Data > Waypoints**.
2. Select the waypoint you want to edit.
3. Select **Edit Waypoint**.
4. Select the waypoint attribute you want to change (**Name**, **Symbol**, **Depth**, **Water Temp**, **Comment**, or **Position**).

To move the waypoint on the Navigation chart:

1. Select the waypoint on the Navigation chart.
2. Select **Review**. (The **Review** button is only shown when more than one waypoint is in the vicinity.)
3. Select the button for the waypoint you want to edit.
4. Select **Move**.
5. Press **SELECT** to save the new location, or press **MENU** to cancel the move.

To view a list of all waypoints:

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

To delete a waypoint or an MOB:

1. From the Navigation chart, use the map pointer (🖱️) to highlight the waypoint or the MOB on the Navigation chart.
OR
From the Home screen, select **Information > User Data > Waypoints**.
2. Select the waypoint or the MOB you want to delete.
3. Select **Review > Delete** (The **Review** button is only shown when more than one waypoint is in the vicinity.)

Creating and Using Routes

You can create and store up to 20 routes (100 routes for models GPSMAP 431/441/531/541/536/546, including “s” models), with up to 250 waypoints each.

To create a route from your present location:

1. From the Navigation chart, use the map pointer (🖱️) to select your destination.
2. Select **Navigate To > Route To**.
3. Use the map pointer (🖱️) to select the location at which you want to make the last turn toward your destination.
4. Press **SELECT**. Repeat this step to add additional turns.



5. Press **MENU** to cancel, to undo the last turn, or to begin navigating the route.

To create a route in another location:

1. From the Home screen, select **Information > User Data > Routes > New Route**.
2. Select **Use Chart** or **Use Waypoint List**.
3. If you select **Use Chart**, use the map pointer (🖱️) to select the initial location at which you want to start the new route. If you select **Use Waypoint List**, select the first waypoint on the route.
4. Choose the location of the first turn and press **SELECT**. Repeat until the route is complete.

5. Select **MENU** to save the route.
6. Select the route to edit the route, delete the route, or navigate to the route.

To create a route using Automatic Guidance (when using a preprogrammed BlueChart g2 Vision card):

1. From the Navigation chart, select your destination.
2. Select **Navigate To > Guide To**. Your route is calculated.

NOTE: You can change the automatic guidance path to a route by selecting the end of the path and selecting **Navigate To > Route To**. The automatic guidance path stays on the screen, allowing you to trace it while creating a route.

To edit a route:

1. From the Home screen, select **Information > User Data > Routes**.
2. Select the route to edit.
3. Select **Edit Route**. You can edit the route name or use the chart or turn list to edit the route turns.

To delete a route:

1. From the Home screen, select **Information > User Data > Routes**.
2. Select the route to delete.
3. Select **Delete > OK**.

To bypass a waypoint on a route:

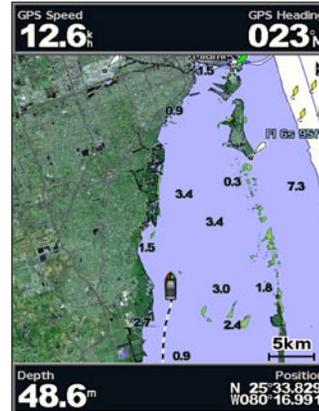
1. Create a route as previously described.
2. Select the waypoint that follows the waypoint you are bypassing.
3. Select **Navigate To > Go To (or Route To)**.

Using Tracks

A track is a recording of your path. The track currently being recorded is the active track. An active track can be saved.

To turn on the track log:

From any chart except the Fish Eye 3D, select **MENU > Waypoints & Tracks > Tracks > On**. A trailing line on the chart indicates your track.



To save the active track:

1. From any chart except the Fish Eye 3D, select **MENU > Waypoints & Tracks > Active Tracks > Save Active Track**.
2. Select either the time the current track began (or **Midnight**, if shown) or **Entire Log**.
3. To name the track, change the color of the track, or save it as a route, select **Edit Track**.

To clear the active track:

From any chart except the Fish Eye 3D, select **MENU > Waypoints & Tracks > Active Tracks > Clear Active Track**.
The track memory is cleared and the current track continues to be recorded.

To retrace the active track:

1. From any chart except the Fish Eye 3D, select **MENU > Waypoints & Tracks > Active Tracks > Follow Active Track**.
2. Select either the time the current track began or **Entire Log**.
3. Follow the colored line on the screen.

To edit or delete a saved track:

1. From any chart except the Fish Eye 3D, select **MENU > Waypoints & Tracks > Saved Tracks**.
2. Select the track you want to edit or delete.
3. Select **Edit Track** to change the name or color of the track, or select **Delete** to delete the track.

To set active Track Options:

From any chart except the Fish Eye 3D, select **MENU > Waypoints & Tracks > Active Track > Active Track Options**.

Record Mode—select **Off**, **Fill**, or **Wrap**.

- **Off**—does not record a track log.
- **Fill**—records a track log until the track memory is full.
- **Wrap**—continuously records the track log, replacing the oldest track data with new data.

Record Interval—defines the frequency at which the track plot is recorded. Recording more-frequent plots is more accurate but fills the track log faster.

- **Interval**—sets whether the interval is determined by distance, time, or resolution. (Select **Change** to set the value.)
- **Distance**—records the track based on a distance between points.
- **Time**—records the track based on a time interval.
- **Resolution**—records the track plot based on a variance from your course. This setting is recommended for the most-efficient use of memory. The distance value (**Change**) is the maximum error allowed from the true course before recording a track point.
- **Change**—sets the value of the interval.

Track Color—sets the color of the track plot.

Using BlueChart g2 Vision

Optional BlueChart g2 Vision preprogrammed SD cards allow you to get the most out of your unit. In addition to detailed marine charting, BlueChart g2 Vision has the following features:

- **Mariner's Eye 3D**—provides a view from above and behind the boat for a three-dimensional navigation aid (page 16). The BlueChart g2 Vision Mariner's Eye 3D is more detailed than the preloaded data.
- **Fish Eye 3D**—provides an underwater 3D view that visually represents the sea floor according to the information on the chart.
- **Fishing Charts**—provides a view of the chart with enhanced bottom contours and without navigational data. This chart works well for offshore deep-sea fishing.
- **High Resolution Satellite Imagery**—provides high-resolution satellite images for a realistic view of the land and water on the Navigation chart.
- **Aerial Photos**—provides a view of marinas and other navigationally significant aerial photos to help you visualize your surroundings.
- **Detailed Roads and POI data**—provides a view of roads, restaurants, and other points of interest (POIs) along the shore.

- **Current Data**—provides a view of current-station information (page 36).
- **Auto Guidance**—uses the chart data and specified boat safe depth to determine the best course to your destination (page 43).

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

Navigating with a Garmin Autopilot

When you start any type of navigation (**Go To, Route To, Guide To, or Follow Track**), if you are connected to a compatible Garmin autopilot, you are prompted to engage the autopilot.

Viewing Information

Use the Information screen to access information about dashboard gauges, tides, currents, user data, and other vessels.

Viewing a Compass

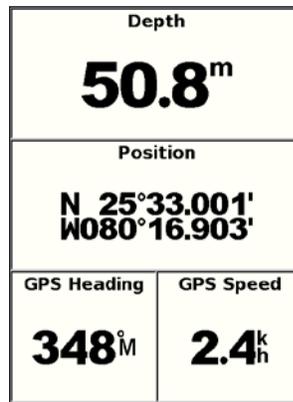
From the Home screen, select **Information** > **Dashboard** > **Compass**.



Viewing Numbers

You can view and customize numerical data including depth, GPS information, and navigation information. You can customize the number of fields shown and the type of information shown in each field. You can view up to six fields of numerical information.

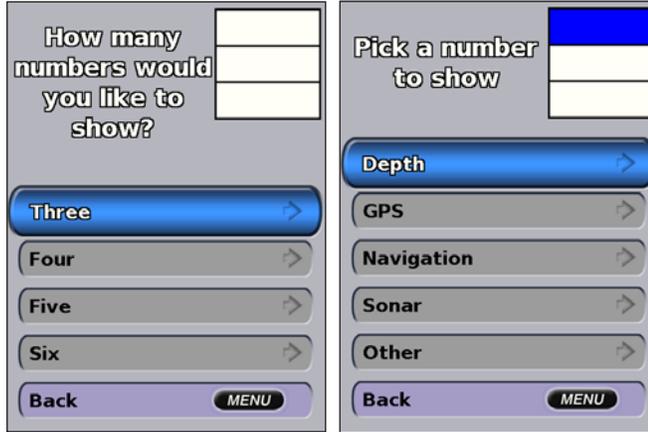
To view the Numbers screen from the Home screen, select **Information** > **Dashboard** > **Numbers**.



To customize the Numbers screen:

1. From the Home screen, select **Information** > **Dashboard** > **Numbers**.
2. Press **MENU** and select **Configure**.

- Select the number of fields to show (**3, 4, 5, or 6**).
- Select information to show in each field.



Viewing Trip Information

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

Trip Odometer 244^m	Stopped Time 01:48
Moving Average 3.7^k_h	Moving Time 03:59
Total Average 0.1^k_h	Total Time 01:52
Maximum Speed 26.5^k_h	Odometer 244^m
Trip Fuel Used 0.0_L	

To reset the trip information, maximum speed, odometer, or all values, press **MENU** while viewing the trip information.

Viewing Fuel Gauges

To view fuel gauges from the Home screen, select **Information** > **Dashboard** > **Fuel**. Fuel level in each tank, total fuel remaining, cruising range, fuel flow for each engine, total fuel flow, fuel economy for each tank, and total fuel economy are displayed.

Viewing Information

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

To synchronize your fuel gauges with your fuel:

From the Home screen, select **Information** > **Dashboard** > **Fuel** > **MENU**.

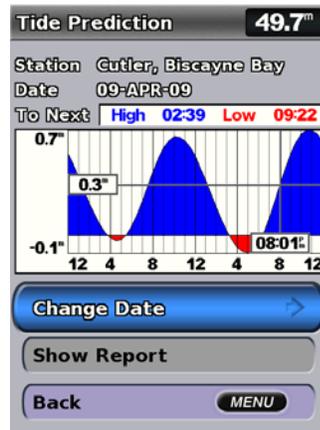
- **Fill Up All Tanks**—select when your tank is full. An estimate of the total fuel is shown. Adjust if necessary.
- **Add Fuel To Boat**—select when you have added less than a full tank. An estimate of the fuel added is shown. Adjust if necessary.
- **Set Total Fuel Onboard**—select to specify the total fuel in your tanks.
- **Fuel Economy**—select either **GPS Speed** or **Water Speed** (using data from a speed wheel) for the fuel economy calculation.

Viewing Tide-station Information

NOTE: You must use a BlueChart g2 Vision card to view Tide-station information.

1. Select **Information** > **Tides & Currents** > **Tides**.

2. Select a tide station. Tide-station information is shown.



Select **Change Date** > **Manual** to view tide information for a different date.

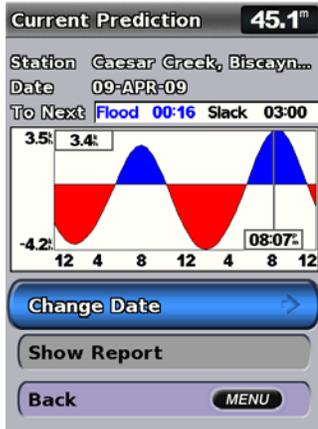
Select **Show Report** to view the Tide Prediction Report for the selected station.

Viewing Current Information

Use the Current Prediction screen to view information for currents.

NOTE: You must use a BlueChart g2 Vision card to view Tide-station information.

1. Select **Information > Tides & Currents > Currents**.
2. Select a current station. Current-station information is shown.



Select **Change Date > Manual** to view current-station information for a different date.

Select **Show Report** to view the Current Prediction Report for the selected station.

NOTE: You can select both tide-station and current-station information directly from the Navigation chart.

Viewing User Data

To view user data, from the Home screen, select **Information > User Data**.

Waypoints—view a list of all saved waypoints ([page 15](#)).

Routes—view a list of saved routes ([page 30](#)).

Tracks—view a list of saved tracks ([page 31](#)).

Data Transfer—transfer waypoints, routes, and tracks to and from an SD card or network.

Clear User Data—erase all user waypoints, routes, and tracks.

To copy or merge MapSource data to your chartplotter:

1. Insert an SD card into your chartplotter to allow it to place a file on the SD card. This file provides information to MapSource to format the data. This only needs to be done the first time you copy or merge MapSource data to your chartplotter from a specific SD card.
2. Check your MapSource version on the computer by clicking **Help > About MapSource**. If the version is older than 6.12.2, update to the most-current version by clicking **Help > Check for Software Updates**, or check the Garmin Web site at www.garmin.com.
3. Insert the SD card into an SD card reader that is attached to the computer.

4. From within MapSource, click **Transfer > Send to Device**.
5. From the Send to Device window, select the drive for the SD card reader and the types of data you want to copy to your chartplotter.
6. Click **Send**.
7. Insert the SD card into your chartplotter.
8. From the Home screen on your chartplotter, select **Information > User Data > Data Transfer**.
9. Complete one of the following:
 - Select **Merge From Card** to transfer data from the SD card to the chartplotter and combine it with existing user data.
 - Select **Replace From Card** to overwrite the data on your chartplotter.
10. Select the file name from the list. The data is transferred from the SD card to the chartplotter.

To transfer data (waypoints, routes, tracks) to an SD card:

1. Insert an SD card into the SD card slot on the front of the unit.
2. From the Home screen, select **Information > User Data > Data Transfer > Save To Card**.

Note: If your unit is NMEA 2000 compatible, select **Card** instead of **Save To Card**.

3. Complete one of the following:
 - Select the file name from the list.
 - Select **Add New File** to create a new file. Enter the file name using the **Rocker** and select **Done**.
4. Select **Yes** to save waypoints, routes, and tracks to the SD card. The file name is saved with an .ADM extension.

To transfer data (waypoints, routes, tracks) from an SD card:

1. Insert an SD card into the SD card slot on the front of the unit.
2. From the Home screen, select **Information > User Data > Data Transfer**.

Note: If your unit is NMEA 2000 compatible, select **Card** instead of **Data Transfer**.

3. Complete one of the following:
 - Select **Merge From Card** to transfer data from the SD card to the chartplotter and combine it with existing user data.
 - Select **Replace From Card** to overwrite items on your chartplotter.
4. Select the file name from the list. The data is transferred from the SD card to the chartplotter.

To copy the built-in maps to an SD card:

1. Insert an SD card (at least 4 GB) into the SD card slot on the front of the unit.
2. From the Home screen, select **Information > User Data > Data Transfer > Copy Built-In Map** to copy the maps loaded onto your chartplotter to the SD card.

To transfer data to or from a NMEA 2000 network:

1. Connect the unit to a NMEA 2000 network. (Refer to the *GPSMAP 400/500 Installation Instructions*.)

Only the following units are NMEA 2000 compatible:

GPSMAP 441/441s	GPSMAP 536/536s
GPSMAP 541/541s	GPSMAP 546/546s

2. From the Home screen, select **Information > User Data > Data Transfer > Network**.
3. Complete one of the following:
 - Select **Clone User Data** to transfer waypoints, routes, and tracks to 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.

To back up data to a computer:

1. Insert an SD card into the SD card slot on the front of the unit.
2. From the Home screen, select **Information > User Data > Data Transfer > Save To Card**.

Note: If your unit is NMEA 2000 compatible, select **Card** instead of **Save To Card**.
3. Complete one of the following:
 - Select the file name from the list.
 - Select **Add New File** to create a new file. Enter the file name using the **Rocker**, and press **SELECT**.
4. Remove the SD card from the unit, and insert it into an SD card reader attached to a computer.
5. From Windows® Explorer, open the Garmin\UserData folder on the SD card.
6. Copy the appropriate .ADM file on the card, and paste it to any location on the computer.

To restore backup data to your chartplotter:

1. Copy the appropriate .ADM file from the computer to an SD card in the Garmin\UserData folder.
2. Insert the SD card into your chartplotter.
3. From the Home screen on your chartplotter, select **Information > User Data > Data Transfer > Replace From Card**.

To delete all waypoints, routes, and tracks:

1. From the Home screen on your chartplotter, select **Information** > **User Data** > **Clear User Data**.
2. Select **Waypoints**, **Routes**, **Saved Tracks**, or **All**.
3. Select **OK** to delete the data.

To add a DSC contact:

1. Select **Add Contact**.
2. Use the **Rocker** to enter the MMSI number of the vessel.
3. Use the **Rocker** to enter the name of the vessel.

Viewing Other Vessels

To view information about other boats from the Home screen, select **Information** > **Other Vessels**.

NOTE: To view information about other boats, your unit must be connected to an external AIS (Automatic Identification System) or DSC (Digital Selective Calling) device. See [page 55](#) for more information.

AIS List—view information about all of the boats your unit is monitoring. The AIS list shows the MMSIs or (if the boat is broadcasting it) names of the AIS boats and is sorted by range. The boat nearest to your boat appears at the top of the list.

DSC List—view the 100 most recent calls. 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 list.

Select **Options** to sort calls by name, type, MMSI, distance from your boat, or the time the call was received.

Select **Options** > **Delete All** to delete all the calls from the list.

Configuring the Chartplotter

Use the Configure screen to configure unit settings.

Configuring System Settings

To change general system settings from the Home screen, select **Configure > System**.

Simulator—turn Simulator mode (page 6) on or off. Select **Setup** to set simulator options, such as simulated position, speed, and direction.

Beeper/Display—select **Beeper** to set when the unit makes audible sounds. Select **Display > Backlight** to brighten or darken the backlight. Select **Display > Color Mode** to switch between Day mode and Night mode (page 4).

Auto Power (GPSMAP 431/441/531/541/536/546, including “s” models)—turn Auto Power **On** or **Off**. When **On** is selected, the chartplotter will automatically turn on whenever power is applied, unless the chartplotter is turned off with the Power Key before power is lost.

GPS—view GPS satellites.

- **Skyview**—view the GPS satellite constellation.
- **WAAS/EGNOS**—toggle WAAS (in North America) or EGNOS

(in Europe) on or off. WAAS/EGNOS can provide more-accurate GPS position information. However, when using WAAS or EGNOS, the device takes longer to acquire satellites.

- **Speed Filter**—select **On**, **Off**, or **Auto**. The speed filter averages the speed of your boat over a short period of time for smoother speed values.

System Information—view system information and reset factory settings. The **Save to Card** button is provided as a troubleshooting tool. A Garmin Product Support representative may ask you to use this feature to retrieve data about your chartplotter.

Event Log—displays a list of system events. Select the event to view additional information.

Configuring Units of Measure

To change units of measure from the Home screen, select **Configure > Preferences > Units**.

System Units—a global setting that defines individual units of measure at the same time: **Statute (mh, ft, °F)**, **Metric (kh, m, °C)**, **Nautical (kt, ft, °F)**, or **Custom**. Select **Custom** to individually define units of measure for depth, temperature, distance, speed, elevation, volume, and pressure.

NOTE: You must be receiving NMEA sonar depth data or using a Garmin sounder module to view depth and water temperature information.

Heading—sets the reference used in calculating heading information.

- **Auto Magnetic**—automatically sets the magnetic declination for your location.
- **True**—sets true north as the heading reference.
- **Grid**—sets grid north as the heading reference (000°).
- **User Magnetic**—allows you to set the magnetic variation value.

Position Format—change the coordinate style in which a given location reading appears. Do not change the position format unless you are using a map or chart that specifies a different position format.

Map Datum—change the coordinate system in which the map is structured. Do not change the map datum unless you are using a map or chart that specifies a different map datum.

Time—set the time options.

- **Time Format**—select **12-hour**, **24-hour**, or **UTC** time format.
- **Time Zone**—set the time zone you want displayed for time readings. If **Auto** is selected for the Time Zone, the DST option is not available and is automatically set to **Auto**.
- **DST** (Daylight Saving Time)—select **Off**, **On**, or **Auto**. The auto setting automatically turns daylight saving time on or off, depending on the time of year.

Changing the System Language

To change the system language, from the Home screen, select **Configure > Preferences > Language** and then select the language.

Configuring Navigation Preferences

To change navigation preferences, from the Home screen, select **Configure > Preferences > Navigation**.

Route Labels—for saved routes, this determines whether route turns are indicated by number (Turn 1, Turn 2, and so on) or by waypoint name, or whether the description of turns is hidden.

Turn Transition—set how much time or how far before a turn in a route that you transition to the next leg.

Speed Sources—specify the sensor used for wind numbers and fuel economy. Select **Wind** or **Fuel Economy** to toggle between water (from a water-speed sensor) and GPS (from the calculated GPS speed).

Auto Guidance—set the automatic guidance parameters:

- **Safe Depth**—set the minimum depth (chart depth datum) to allow when calculating an automatic guidance path. A safe depth of less than one meter is not allowed when using automatic guidance.
- **Safe Height**—set the minimum height (chart height datum) of a bridge that your boat can safely travel under.
- **Shoreline Distance**—set the safe distance for your boat from the shore: **Nearest**, **Near**, **Normal**, **Far**, or **Farthest**.

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.

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.

To set the distance from shore:

1. Dock your boat or drop anchor.
2. From the Home screen, select **Configure > Preferences > Navigation > Auto Guidance > Shoreline Dist. > Normal**.
3. From Home screen, select **Where To? > Waypoints**.
4. Select a waypoint for a destination that you have navigated to 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.
 - If the placement of the Auto Guidance line is satisfactory, select **MENU > Navigation Options > Stop Navigation**. Proceed to step 9.
 - 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**.

- If you selected **Near** or **Far** in step 6, review the placement of the Auto Guidance line. Determine whether the line safely avoids known obstacles, and whether the turns enable efficient travel.
 - If the placement of the Auto Guidance line is satisfactory, select **MENU > Navigation Options > Stop Navigation**. Proceed to step 9.
 - 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**.
- If you selected **Nearest** or **Farthest**, review the placement of the Auto Guidance line. Determine whether the line safely avoids known obstacles, and whether the turns enable efficient travel.
- Repeat steps 1-8 at least once more, using a different destination each time, until you are familiar with the functionality of the Shoreline Distance setting.

Configuring Communications Settings

To change the communications settings from the Home screen, select **Configure > Communications**.

Serial Port 1—configures the input/output format for serial port 1 to use when connecting your chartplotter to external NMEA devices, a computer, or other Garmin devices.

Serial Port 2 (if supported)—configures the input/output format for serial port 2 to use when connecting your chartplotter to external NMEA devices, a computer, or other Garmin devices.

- Garmin Data Transfer**—supports the input or output of Garmin-proprietary data for communicating with Garmin software.
- Garmin Remote Sonar Transfer (GPSMAP 430/440/530/540/535/545)**—supports the input or output of Garmin-proprietary sonar data for communicating with Garmin software.
- NMEA Standard**—supports the input or output of standard NMEA 0183 data, DSC, and sonar NMEA input support for the DPT, MTW, and VHW sentences.
- NMEA High Speed**—supports the input or output of standard 0183 data for most AIS receivers.

NMEA 0183 Setup—enable or disable NMEA 0183 output sentences for sounder, route, system, and Garmin NMEA settings.

To enable or disable NMEA 0183 output sentences:

1. From the Home screen, select **Configure > Communications > NMEA 0183 Setup**.
2. Select a setting (**Sounder, Route, System, or Garmin**).
3. Select the NMEA 0183 output sentence to toggle the output on or off.
 - **Posn. Precision**—adjust the number of digits (**Two Digits, Three Digits, or Four Digits**) to the right of the decimal point for transmission of NMEA output.
 - **Waypoint IDs**—determine how the unit identifies waypoint identifiers (**Names or Numbers**).

NMEA 2000 Devices—lists the NMEA 2000 devices on your network. If a NMEA 2000 device has configuration options or settings, select the device for a list of options.

Only the following units are NMEA 2000 compatible:

GPSMAP 441/441s	GPSMAP 536/536s
GPSMAP 541/541s	GPSMAP 546/546s

CANet Devices—lists the CANet devices on your network. If a CANet device has configuration options or settings, select the device for a list of options.

Only the GPSMAP 430/440/530/540/535/545 (including “s” models) are CANet compatible.

Setting Alarms

You can set the unit to sound an audible alarm when certain conditions are met. By default, all alarms are turned off.

To set an alarm:

1. From the Home screen, select **Configure > Alarms**.
2. Select an alarm category.
3. Select an alarm.
4. Select **On** to turn on the alarm.
5. Specify alarm information.

Setting Navigation Alarms

To set a navigation alarm from the Home screen, select **Configure > Alarms > Navigation**.

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

- **Type**—select whether you want arrival alarms to sound only when nearing destinations or when nearing either turns or destinations. Select **Off** to disable arrival alarms.
- **Activation**—select whether the arrival alarm triggers on time to arrival or distance to arrival.

- **Change Time/Change Distance**—if you have Activation set to Time, select **Change Time** to set the number of minutes before arrival that the alarm should sound. If you have Activation set to Distance, select **Change Distance** to set the distance before arrival that the alarm should sound. Use the **Rocker** to change the time or distance.

Anchor Drag—set an alarm to sound when you exceed a specified drift distance.

Off Course—set an alarm to sound when you are off course by a specified distance.

Setting System Alarms

To set a system alarm from the Home screen, select **Configure > Alarms > System**.

Clock—set an alarm using the system (GPS) clock. The unit must be on for the clock alarm to work.

Battery—set an alarm to sound when the battery reaches a specified low voltage.

GPS Accuracy—set an alarm to sound when the GPS location accuracy falls outside the specified value.

Setting Sonar Alarms

To set a sonar alarm from the Home screen, select **Configure > Alarms > Sonar**.

NOTE: You must be receiving NMEA sonar depth data or using a Garmin sounder module to configure sonar alarms.

Shallow Water—set an alarm to sound when the depth is less than the specified value.

Deep Water—set an alarm to sound when the depth is greater than the specified value.

Water Temp—set an alarm to sound when the transducer reports a temperature that is 2°F (1.1°C) above or below the specified temperature.

Fish—set an alarm to sound when the unit detects a suspended target of the specified symbols.



—sounds an alarm for all fish sizes.



—sounds an alarm for medium and large fish only.



—sounds an alarm for large fish only.

Setting Weather Alarms

NOTE: You must have a subscription to XM WX Weather and a connected Garmin XM WX weather receiver to view weather information (page 60).

1. From the Home screen, select **Configure > Alarms > Weather**.
2. Turn the following alarms on or off: marine, tornado, severe storm, flood, or flash flood.

Setting the Total Fuel Onboard Alarm

You can configure your chartplotter to sound an alarm when the total amount of remaining onboard fuel reaches the specified level.

To receive fuel-level information, your unit must be connected to an external fuel sensor, such as the Garmin GFS 10.

To enable the Total Fuel Onboard alarm and set the fuel alarm level:

1. From the Home screen, select **Configure > Alarms > Fuel > Total Onboard > On** (or **Off**).
2. If you select **On**, use the **Rocker** to indicate the fuel level at which the alarm should sound.

Configuring My Boat

To configure settings for your boat, from the Home screen, select **Configure > My Boat**.

Keel Offset—offset 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. Enter a negative number to compensate for a large vessel that may draw several feet of water.

To adjust the Keel Offset:

1. From the Home screen, select **Configure > My Boat > Keel Offset**.
2. Use the **Rocker** to enter the measured distance from the transducer location to the water line or to the keel of the boat.
 - If you are measuring down to the keel (transducer installed at the water line), enter a (+) positive number. This shows the depth at the bottom of the keel.
 - If you are measuring up to the water line (transducer installed on the bottom of the keel), enter a (-) negative number. This shows the depth at the surface.
3. Select **Done** to accept the number.

Transducer at Surface

A (+) positive number shows depth at the bottom of the keel.

Transducer at the Bottom of the Keel

A (-) negative number shows depth at the surface.



Temp Offset—set the temperature offset for the temperature sensor of your transducer.

Calibrate Water Speed—use this menu to calibrate a speed-sensing device. Follow the on-screen directions for calibration. If you do not have a speed-sensing device, this menu does not appear.



NOTICE: 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 speed of the boat. If you get the message again, stop the boat and make sure 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.

Fuel Capacity—enter the total fuel capacity of your boat.

Configuring Other Vessels

To configure settings for boats other than your own, from the Home screen, select **Configure > Other Vessels**.

To configure AIS or DSC information for other boats, your unit must be connected to an external AIS or DSC device.

AIS—turn AIS (Automatic Identification System) on or off. AIS alerts you to area traffic by providing boat IDs, position, course, and speed for boats that are within range and equipped with a transponder. For more information concerning the use of AIS, see [page 22](#).

DSC—turn DSC (Digital Selective Calling) on or off.

AIS Alarm—turn a safe zone around your boat on or off. This is used for collision avoidance, and the zone can be customized.

To customize safe-zone settings:

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

- **Range**—change 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).
- **Time to (Safe Zone)**—sounds an alarm if AIS determines that a target will intersect the safe zone within the defined time interval (from 1 to 24 minutes).
- **AIS Alarm**—when **On** is selected, a message is displayed (“AIS: Dangerous Target”) when a vessel enters the safe zone. When **Off** is selected, the message will not be displayed.

Using Sonar

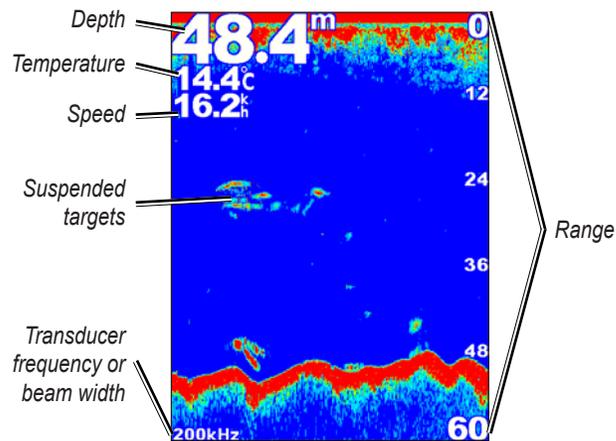
When connected to a transducer, the following chartplotters can be used as fishfinders:

GPSMAP 430s	GPSMAP 440s
GPSMAP 431s	GPSMAP 441s
GPSMAP 530s	GPSMAP 535s
GPSMAP 531s	GPSMAP 536s
GPSMAP 540s	GPSMAP 545s
GPSMAP 541s	GPSMAP 546s

Understanding the Full Screen

Select the Full Screen option to view a full-screen graph of the transducer's sonar readings.

From the Home screen, select **Sonar > Full Screen**.

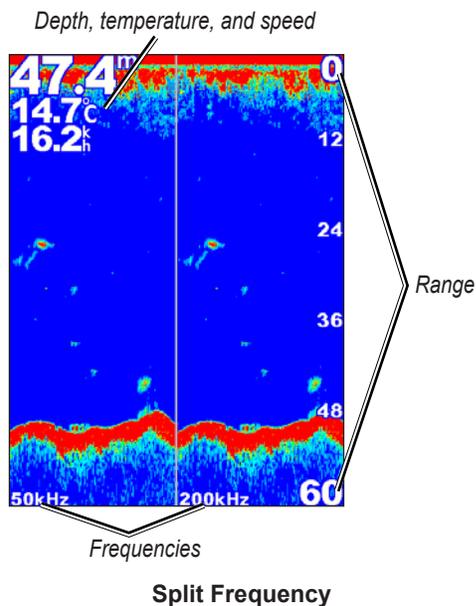


Full Screen

Understanding the Split Frequency Screen

Use the Split Frequency screen (dual-frequency transducer only) to view both the 50 kHz and 200 kHz frequencies on the same screen. A 50 kHz frequency graph appears on the left; a 200 kHz frequency graph appears on the right.

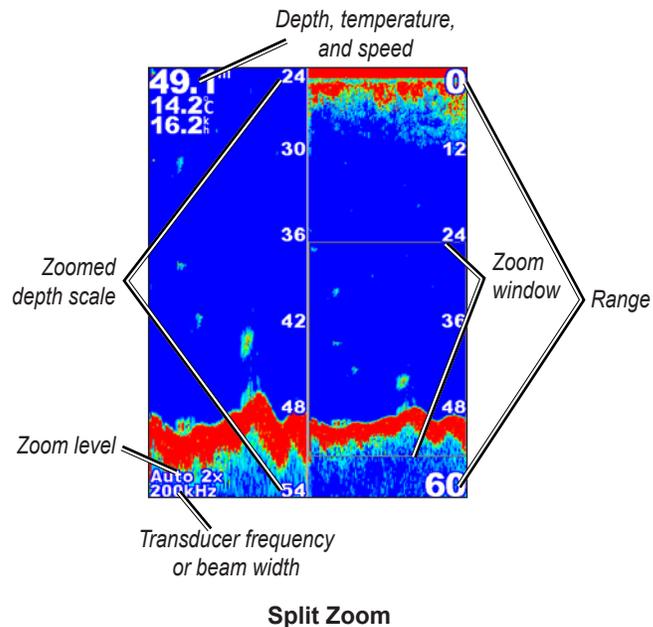
From the Home screen, select **Sonar** > **Split Frequency**.



Understanding the Split Zoom Screen

Use the Split Zoom screen to view the full sonar data from the graph and a zoomed in portion on the same screen.

From the Home screen, select **Sonar** > **Split Zoom**.

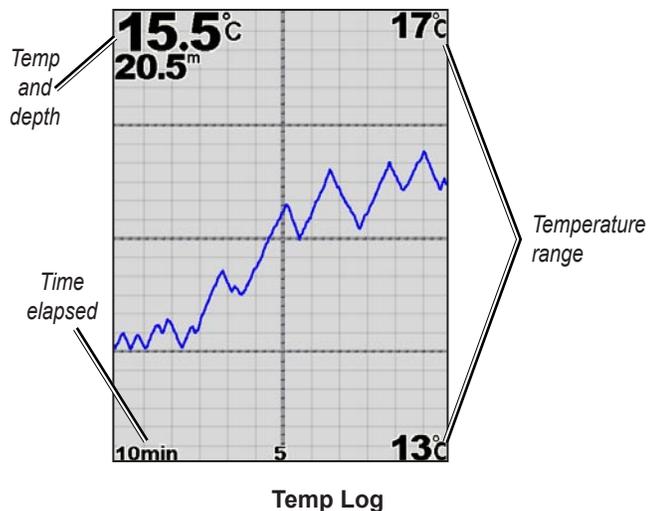


Understanding the Temp Log Screen

If you are using a temperature-capable transducer, the Temp Log screen keeps a graphic log of temperature readings over time. The current temperature and the depth are shown in the top-left corner.

From the Home screen, select **Sonar** > **Temp Log**.

Press **MENU** to set the duration and the scale for the log.



The temperature appears along the right side, and the time elapsed appears along the bottom. The graph scrolls to the left as information is received.

Setting Up Sonar

Use the Sonar Setup screen to define and adjust settings universal to all sonar screens.

From the Home screen, select **Sonar** > **Sonar Setup**.

Scroll Speed—adjust the rate at which the sonar scrolls from right to left (**Ultrasroll™**, **Fast**, **Medium**, or **Slow**). If using a speed-capable transducer, select **Auto** to have the scroll speed automatically adjust to the water speed of your boat.

Surface Noise—show or hide the sonar returns near the surface of the water. Hide surface noise to help reduce clutter.

Depth Line—quickly reference a specific depth (**Show** or **Hide**). To set the depth of the reference line, select **Show**, and then press up or down on the **Rocker**.

A-Scope—display a vertical flasher along the right side of the screen.

Data Bars—show or hide battery voltage, water temperature, water speed (if your transducer is capable), cruising, and navigation.

NOTE: To display water temperature or water speed, the connected transducer must be capable of measuring water temperature, water speed, or both. Select **Auto** to display the values.

Appearance—customize the display of fish symbols, whiteline, and the sonar color scheme.

- **Fish Symbols**—set how the sonar interprets suspended targets.



The unit does not interpret the sonar return data (default).



Suspended targets appear as symbols. Background sonar information appears, making the distinction between fish and structure easier.



Suspended targets appear as symbols with background information shown. The target depth of each symbol is also displayed.



Suspended targets appear as symbols. No background information appears.



Suspended targets appear as symbols with no background information shown. The target depth of each symbol is displayed.

- **Whiteline**—highlights the strongest signal from the bottom to help identify its hardness or softness.
 - **Off** (default)—turns off whiteline.
 - **High**—the most sensitive setting. Almost all strong returns are highlighted in white.
 - **Medium**—many strong returns are highlighted in white.
 - **Low**—the least sensitive setting. Only the strongest returns are highlighted in white.

Color Scheme—select **White** or **Blue**. This affects the background on all sonar screens, but does not change the Temp Log screen.

Advanced Sonar Settings

To adjust advanced sonar settings, press **MENU** while viewing a sonar screen.

Pause Sonar—stops the scrolling of the sonar screen.

To mark a waypoint at a selected depth:

1. While viewing a sonar screen, press **MENU** > **Pause Sonar**.
2. Use the **Rocker** to position the pointer over the fish or structure you want to mark.
3. Press **SELECT**.

From the paused screen, press **MENU** > **Resume Sonar** to continue scrolling.

Range—adjust the range of the depth scale on the right side of the screen (**Auto**, or to adjust manually, **Manual Range**).

Gain—controls the sensitivity of the sonar receiver (**Auto**, or to adjust manually, **Manual**). To see more detail, increase the gain. If the screen is cluttered, decrease the gain.

Frequency—when using a dual frequency transducer, select how the frequencies appear on-screen (**200kHz**, **50kHz**, **Dual**, or **Auto**).

Zoom—zoom in to a section of the full screen. The zoom is off, or set to **No Zoom** by default. Four options are available:

- **No Zoom**—turns zooming off.
- **2x Zoom**—twice the magnification.
- **4x Zoom**—four times the magnification.
- **Bottom Lock**—locks the zoom window to the bottom.
- **Split Zoom**—displays the Split Zoom screen ([page 51](#)).

Noise Reject (available only when **Gain** is set to **Manual**)—reduces on-screen visual clutter (usually from electrical sources) on the screen. Select the top slider bar to manually adjust the value of noise rejection. Manually adjusting the amount of noise that is rejected helps fine-tune the sonar to show the most detail with the least noise.

When **Frequency** is set to **Dual** (and **Gain** is set to **Manual**), you can individually adjust noise rejection for each frequency.

Using Digital Selective Calling (DSC)

Using the Chartplotter with a VHF Radio

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.

Feature	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.	X	X	X	X
The chartplotter can track the positions of vessels sending position reports.	X	X	X	X
Quickly set up and send individual routine call details to your Garmin VHF radio.				X
When you initiate a man-overboard distress call from your radio, the chartplotter displays the man-overboard screen and prompts you to navigate to the man-overboard point.				X
When you initiate a man-overboard distress call from your chartplotter, the radio displays the Distress Call page to initiate a man-overboard distress call.				X

To turn DSC on or off:

1. Select **Configure** > **Other Vessels**.
2. Select **DSC** to toggle it on or off.

Adding a DSC Contact

You can make calls to a DSC contact from the chartplotter. See [page 58](#) for information on making an individual routine call.

1. While viewing a chart, press **MENU** > **Other Vessels** > **DSC** > **DSC List** > **Add Contact**.
2. Use the **Rocker** to enter the Maritime Mobile Service Identity (MMSI) number of the vessel, and press **SELECT**.
3. Use the on-screen keyboard to enter the name of the vessel, and select **Done**.

Viewing 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.

From a chart screen, press **MENU** > **Other Vessels** > **DSC** > **DSC List**.

Receiving Distress Calls

If your Garmin chartplotter and VHF radio are connected via 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 a vessel on the Navigation chart at the time the DSC distress call was sent.

When you receive a DSC distress call:

1. Select **Review** to view details about the call.
2. Complete one of the following:
 - Select **Call with Radio** to set up an individual routine call with the radio to call the vessel in distress ([page 58](#)). This option is only available if you are using a Garmin NMEA 2000-compatible VHF radio.
 - Select **Edit** to edit the vessel name and add a comment. If your radio is tracking the position of the vessel, select **Trail** to show or hide the trail line for the vessel, and select **Trail Line** to change the line color. Select **Clear Report** to delete the call report. Select **Create Waypoint** to set a waypoint at the position sent with the distress call.

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 displays 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 turn to the man-overboard point.

If you cancel the man-overboard distress call on the radio, the man overboard screen no longer appears.

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 displays the Distress Call page to 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 Garmin radio, see your Garmin VHF Radio Owner's Manual. For information on activating navigation to a man-overboard location, see [page 29](#).

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 40](#)).

To view a list of position reports:

1. From the Home screen, select **Information** > **Other Vessels** > **DSC List**.
2. Select from the following options:
 - Select **Call with Radio** to set up an individual routine call with the radio to call the vessel that sent the position report. This option is only available if you are using a Garmin NMEA 2000-compatible VHF radio.
 - Select **Edit** to edit the vessel name and the vessel symbol, and add a comment. If your radio is tracking the position of the vessel, select **Trail** to show or hide the trail line for the vessel, and select **Trail Line** to change the line color. Select **Clear Report** to delete the call report. Select **Create Waypoint** to set a waypoint at the position sent with the distress call.

- Select **Clear Report** to delete the call report.
- Select **Navigate To** to Go To or Route To the location sent with the position report (page 10).

Configuring Vessel Trails on the Navigation Chart

If you have your chartplotter configured to show trails, the Navigation chart displays a black dot for each reported position, a black line indicating the path of the vessel, and a  Blue Flag symbol indicating the last reported position.

To set the duration of displayed trail points:

1. From a chart screen, press **MENU > Other Vessels > DSC > DSC Trails**.
2. Select the number of hours to show tracked vessels on the Navigation chart. For example, if you select **4 Hours**, all trail points (less than four hours old) for tracked vessels are displayed.

To turn trail lines off for tracked vessels:

1. From a chart screen, press **MENU > Other Vessels > DSC > DSC Trails**.
2. Select **Off** to turn trails off for every vessel.

To show or hide the trail line for a specific vessel that is sending position reports:

1. From the Home screen, select **Information > Other Vessels > DSC > DSC List**.
2. Select the vessel from the list > **Edit**.
3. Select **Trail**.

To change the symbol and color of the trail line for a vessel:

1. From the Home screen, select **Information > Other Vessels > DSC List**.
2. Select the vessel from the list > **Edit**.
3. Select an option:
 - Select **Symbol** to edit the symbol.
 - Select **Trail Line** to edit the line color.

Placing an Individual Routine Call

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 one of the following channels on which you want to communicate. The radio transmits this request with your call.

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. However, select **Channel** to select a different channel from the list. If you select a different channel, the chartplotter uses that channel for subsequent calls until you call using a different channel.

To make an individual routine call:

1. While viewing a chart, press **MENU > Other Vessels > DSC > DSC List**.
2. Select the station to call from the list.
3. Select **Review > Call with Radio**.
4. Select **Send** to send the information about the call to the radio.
5. On your Garmin VHF radio, select **Call**.

Calling 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. For more information on selecting a channel other than the default channel (Channel 72), see [page 58](#).

To make an individual routine call to an AIS target:

1. While viewing a chart, use the **Rocker** to select an AIS target .
2. Select **AIS Vessel > Call with Radio**.
3. Select **Send** to send the information about the call to the radio.
4. On your Garmin VHF radio, select **Call**.

Using XM WX Weather and Audio

In order to use XM weather and audio, you must have a Garmin XM WX receiver, such as a GXM 31 or GXM 51, and an activated XM subscription. Visit <http://www8.garmin.com/xm/> for more information. To connect the XM antenna and receiver and for subscription instructions, refer to the manual for your XM equipment.

If you do not have a receiver and a subscription to XM WX Satellite Weather, the weather features described in this section work only when the chartplotter is in Simulator mode. Simulator mode does not provide live weather data.

Using XM WX Weather

The Garmin XM receiver and antenna receives XM WX weather data and shows it on your chartplotter's Navigation chart and other screens throughout the chartplotter. The weather data for each feature comes from reputable weather data centers such as the National Weather Service and the Hydrometeorological Prediction Center. (See the XM WX Satellite Weather Web site at <http://xmwxweather.com> for more information.)

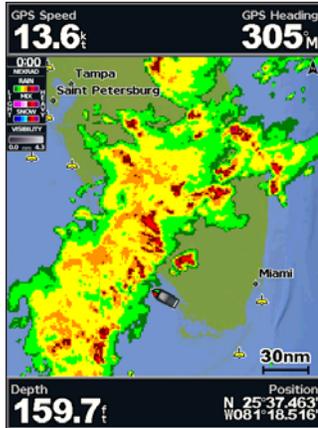
NOTE: Any weather feature can change in appearance or interpretation if the source that provides the information changes.

XM WX weather data is broadcast at set rates. For example, NEXRAD (NEXt Generation Weather RADar) data is broadcast at five minute intervals. When the Garmin receiver is turned on or when a new feature is selected, the receiver has to receive new data before it can be shown. You might experience a delay before weather data or a new feature appears on the map.

To view weather information on a Navigation chart, a Fishing Chart, or a Split Navigation chart:

From the Navigation chart, Fishing chart, or Split Navigation chart, press **MENU > Chart Setup > Weather > On**.

Select weather parameters (NEXRAD, cloud cover, visibility, WX buoys, and the weather legend) to turn them on or off.



If Weather is set to **Off**, none of the weather parameters will be visible on the chart.

To view weather information on a Perspective 3D chart or a Mariner's Eye 3D chart:

Press **MENU** > **Weather Radar** > **On**.

Viewing NEXRAD Precipitation Information

From the Home screen, select **Information** > **Weather** > **Precipitation**.

Precipitation shows NEXRAD radar, storm cells, lighting strikes, and hurricane warnings. NEXRAD shows very light rain and

snow up to strong thunderstorms in varying shades and colors. The time stamp in the upper-left corner of the screen indicates the elapsed time since the National Weather Service last updated the information. You can view NEXRAD information as an image of the latest update, or as an animated loop of the latest updates. NEXRAD is shown independently or with a variety of other weather information.

From the Home screen, select **Information** > **Weather** > **Precipitation**.



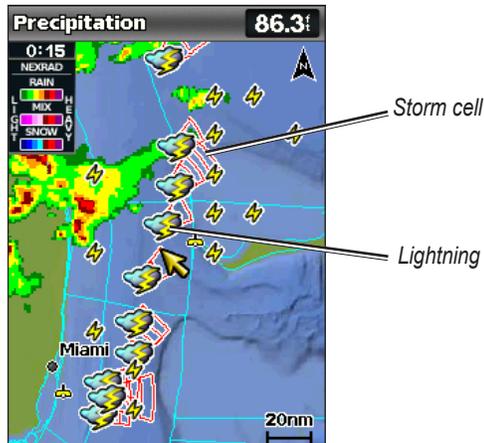
To view weather options, press **MENU**.

- **Change Weather**—displays other weather options. Select **Weather Subscription** to view your subscription information.
- **Cloud Cover**—shows or hides the display of cloud cover.
- **NEXRAD Loop**—displays NEXRAD information as an animated loop of the latest updates.
- **Waypoints**—shows or hides waypoints. Select **Navigation Only** to display only waypoints that are along the route being navigated.

Understanding Storm Cell Information

The storm cells show storms as well as the projected path of the storm in the immediate future.

The direction of the red cone indicates the projected path of the storm cell. The red bars that appear in the cone indicate where the storm will most likely be in the future. Each bar represents 15 minutes.

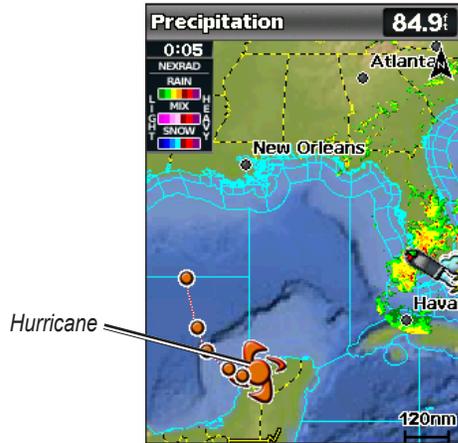


Understanding Lightning Information

Lightning strikes are represented by lightning bolt icons. Lightning appears on the map if strikes were detected within the last seven minutes. The ground-based lightning detection network only detects cloud-to-ground lightning.

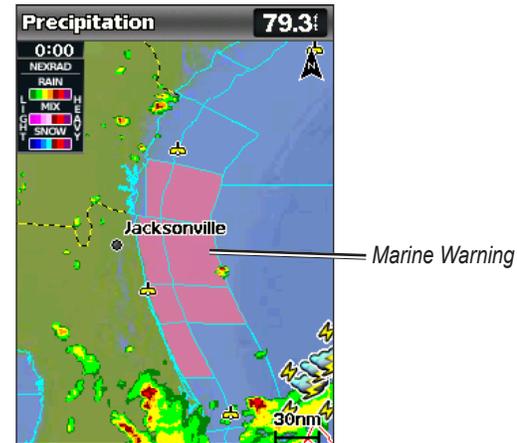
Understanding Hurricane Information

The Hurricanes feature shows the current position of a hurricane, tropical storm, or tropical depression, as well as its projected path (indicated by a red line). The darkened dots on the red line display the projected locations received from the National Hurricane Center. The center provides four forecasts at 12-hour intervals (12 Hrs, 24 Hrs, 36 Hrs, and 48 Hrs), as well as the current conditions (Now).



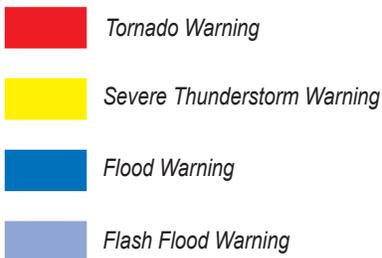
Understanding Marine Warnings

When a Marine Warning is issued, the area for the warning is highlighted in red. To view information about the warning, select the warning area. The light blue lines on the chart indicate marine weather warning zones.



Understanding County Warnings

When the National Weather Service issues a weather warning for a county, the county is highlighted with the color corresponding to the warning. To view information about the warning, select the county.



Viewing Forecast Information

Forecasts show the weather conditions including fronts and precipitation.

From the Home screen, select **Information** > **Weather** > **Forecast**.

To view the forecast for another time period:

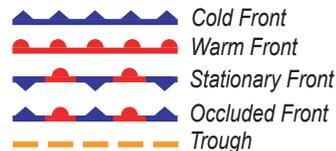
1. From the Home screen, select **Information** > **Weather** > **Forecast**.
2. Press right on the **Rocker** to select **Next**. The forecasted weather for the next 12 hours is shown.
3. Select **Next** again to view forecasts for the next 24, 36, and 48 hours.

To view forecast information for another location:

Use the **Rocker** to pan the screen until the screen displays the location you want.

Understanding Fronts

The Fronts show lines indicating the leading edge of an air mass. This feature also shows pressure centers.



Indicates a low-pressure center. A low-pressure center is an area where the measured pressure is lowest relative to the surrounding area. Moving away from a low-pressure center in any horizontal direction results in increased pressure. Winds flow counterclockwise around low-pressure centers in North America.



Indicates a high-pressure center. A high-pressure center is an area where the measured pressure is highest relative to the surrounding area. Moving away from a high-pressure center in any horizontal direction results in decreased pressure. Winds flow clockwise around high-pressure centers in North America.

Understanding City Forecasts

City forecasts appear as standard weather symbols. The forecast is viewed in 12-hour increments for the next 48 hours.



Viewing Fishing Information

The Fishing view contains current water temperature, surface pressure conditions, and fishing forecasts.

From the Home screen, select **Information > Weather > Fishing**.

Understanding Surface Pressure

This feature shows pressure isobars and pressure centers. The isobars connect points of equal pressure. Pressure readings can help determine weather and wind conditions in an area. High-pressure areas are generally associated with fair weather. Low-pressure areas are generally associated with clouds and the chance of precipitation. Isobars packed closely together show a strong pressure gradient. Strong pressure gradients are associated with areas of stronger winds.

Pressure units are shown in Millibars (mb), Inches of Mercury (in), and Hectopascals (hPa).

Understanding Water Temperature Data

The Water Temperature feature indicates the water's surface temperature, as indicated by the legend on the left of the screen. The temperature breaks are indicated by isotherm lines.



Viewing Fish Forecasting

This feature shows areas that contain optimal weather conditions for specific species of fish.

1. From the Home screen, select **Information > Weather > Fishing > MENU > Fish Species**.
2. Select a species of fish. Shaded areas indicate optimal fishing areas.

Viewing Sea Conditions

Sea Conditions provide surface conditions including winds, wave height, wave period, and wave direction. To view sea conditions, from the Home screen, select **Information > Weather > Sea Conditions**.

Understanding Surface Winds

Wind barbs indicate from which direction the wind is coming. The wind barb is a circle with a tail. Wind speed is indicated by the different combination of flags that are attached to the tail.

Wind Direction



Calm		15 knots	
5 knots		20 knots	
10 knots		50 knots	

Understanding Wave Height

The Wave Height feature shows wave heights. The wave heights for an area are shown in color intensities.

Understanding Wave Period

The Wave Period feature provides the time (in seconds) between successive waves.

Understanding Wave Direction

The Wave Direction feature shows the direction in which a wave is moving, as indicated by the direction of the red arrow.



Viewing Visibility Information

Visibility is the forecast maximum horizontal distance that can be seen at the surface, as indicated by the legend on the left of the screen. Contour lines on the Visibility feature show the forecasted change in surface visibility.

From the Home screen, select **Information** > **Weather** > **Visibility**.



To view the forecasted visibility for another time period:

1. Press right on the **Rocker** to select **Next**. The forecasted visibility for the next 12 hours is shown.
2. Select **Next** again to view forecasts for the next 24 and 36 hours.

Using XM Audio

When a Garmin XM receiver is connected to the audio input of your boat, you can listen to XM audio channels.

To display the XM audio interface while navigating:

From the any chart except a split screen chart, press **MENU** > **Data Bars** > **XM Audio** > **On**.



To select an XM audio channel:

1. From the Home screen, select **Configure** > **XM Audio**.
2. Use the **Rocker** to highlight a channel and preview the song playing on the channel.
3. Press **SELECT** to change to the highlighted channel.

To use the XM audio guide:

From the Home screen, select **Configure** > **XM Audio** > **MENU**.

Save Preset—saves the current XM channel in the Presets list. Press **Delete Preset** to remove the current channel from the list. Presets is displayed as a category in the category list.

Category—selects the category of channels that are displayed in the XM audio guide.

Channel Entry—allows you to select an XM channel.

Level—adjusts the volume.

Appendix

Specifications

Physical Specifications

Size : **400 Series:** W × H × D: 5.7 in. × 5.0 in. × 3.0 in.
(14.5 cm × 12.7 cm × 7.6 cm)
500 Series: W × H × D: 5.9 in. × 6.4 in. × 2.9 in.
(15.0 cm × 16.3 cm × 7.4 cm)

Weight: **400 Series:** 1.30 lb. (560 g)
500 Series: 1.75 lb. (800 g)

Display: GPSMAP 430/431/440/441: 4.0 in. diagonal (10.6 cm), QVGA display with adjustable brightness, 320 × 240 pixels.
GPSMAP 530/531/540/541: 5.0 in. diagonal (12.7 cm), QVGA display with adjustable brightness, 320 × 234 pixels.
GPSMAP 535/536/545/546: 5.0 in. diagonal (12.7 cm), Full VGA display with adjustable brightness, 640 × 480 pixels, capable of 4,096 colors.

Case: Fully gasketed, high-impact plastic alloy, waterproof to IEC 529 IPX7 standards.

Temp. Range: From 5°F to 131°F (from -15°C to 55°C)

Compass-Safe Distances:

Model Number	Compass-Safe Distance
GPSMAP 536/546	20 in. (50 cm)
GPSMAP 431/441	26 in. (65) cm
GPSMAP 531/541	30 in. (75 cm)
GPSMAP 430/440 GPSMAP 530/540/535/545	38 in. (95 cm)

Performance

Receiver:

Differential-ready 12 parallel channel WAAS-capable receiver.

GPSMAP 430/430s GPSMAP 440/440s
GPSMAP 530/530s GPSMAP 535/535s
GPSMAP 540/540s GPSMAP 545/545s

High-sensitivity, 14 parallel channel, WAAS-capable receiver.

GPSMAP 431/431s GPSMAP 441/441s
GPSMAP 531/531s GPSMAP 541/541s

High-sensitivity, 12 parallel channel, WAAS-capable receiver.

GPSMAP 536/536s GPSMAP 546/546s

Update Rate: once per second

Acquisition Times: (Average acquisition times for a stationary

receiver with a clear view of the sky.)

GPSMAP 430/430s GPSMAP 440/440s

GPSMAP 530/530s GPSMAP 535/535s

GPSMAP 530/540s GPSMAP 535/545s

Warm:* Approximately 15 seconds

Cold:** Approximately 45 seconds

GPSMAP 431/431s GPSMAP 441/441s

GPSMAP 531/531s GPSMAP 541/541s

Warm:* Approximately 1 second

Cold:** Approximately 38 seconds

GPSMAP 536/536s GPSMAP 546/546s

Warm:* Approximately 15 seconds

Cold:** Approximately 38 seconds

***Warm:** your unit is at or near the last location where you recently acquired satellites.

****Cold:** your unit has moved by more than about 500 mi. (800 km) since it was turned off, or it has been turned off for more than 2 weeks.

GPS Accuracy:

Position: <49 ft. (15 m), 95% typical

Velocity: 0.164 ft./sec 0.05 m/sec steady state

WAAS Accuracy:

Position: <10 ft. (3 m), 95% typical

Velocity: 0.05 m/sec steady state

Dynamics: 6 g

Power

Power Source: 10–32 Vdc

GPSMAP 431/431s GPSMAP 441/441s

GPSMAP 531/531s GPSMAP 536/536s

GPSMAP 541/541s GPSMAP 546/546s

Power Source: 10–35 Vdc

GPSMAP 430/430s GPSMAP 440/440s

GPSMAP 530/530s GPSMAP 535/535s

GPSMAP 540/540s GPSMAP 545/545s

Usage: 15 W max at 13.8 Vdc

Fuse: AGC/3AG - 3.0 A

Sonar

Power: 1 kW Transducer (1 kW transducers are supported by the GPSMAP 535s/536s/545s/546s units only), 1,000 W (RMS), 8,000 W (peak to peak);

Dual Frequency, 500 W (RMS), 4,000 W (peak to peak);

Dual Beam, 400 W (RMS), 3,200 W (peak to peak)

Frequency: 50/200 kHz (dual frequency and 1 kW), 80/200 kHz (dual beam)

Depth: 2,500 ft. (762 m) (1 kW), 1,500 ft. (457 m) (dual frequency), 900 ft (274 m) (dual beam). Depth capacity is dependent on water salinity, bottom type, and other water conditions.

Alarms and Messages

The unit uses an on-screen message system to alert you to unit operating characteristics. When a message appears, press **MENU** to acknowledge the message.

Accuracy Alarm—the GPS accuracy has fallen outside of the user-set value.

AIS: Dangerous Target—shows the MMSI (Maritime Mobile Service Identity) of the dangerous target.

Alarm Clock—the alarm clock has sounded.

Anchor Drag Alarm—you have drifted out of the specified distance range.

Antenna Input is Shorted—a part of the antenna wiring is crimped, broken, or contacting the chassis.

Arriving At [Waypoint Name]—you arrived at the destination waypoint. You can **Stop Navigation** when this message appears.

Battery Alarm—battery voltage has fallen below the value entered in the Battery Alarm setup.

Battery Voltage Is Too High—too much input voltage—the unit shuts off in 10 seconds. Decrease the input voltage to the maximum voltage allowed (or less) for your chartplotter.

Boat Is Not Moving Fast Enough to Calibrate—the boat is not moving fast enough for the speed wheel to provide a valid speed.

Can't Read User Card—error reading card; remove and reinsert. Contact your dealer or Garmin Product Support if the problem persists.

Can't Read Voltages That High, Limited To Top Of Range—the voltage value in the Battery Alarm setup is higher than the unit can read.

Can't Read Voltages That Low, Limited To Bottom Of Range—voltage value in the Battery Alarm setup is lower than the voltage where the unit automatically turns off.

Can't Unlock Maps—data on the data card is not unlocked for the unit. Contact your dealer or Garmin Product Support.

Can't Write User Card, Card May Be Full—error reading card; remove and reinsert. Contact your dealer or Garmin Product Support if the problem persists.

Can't Write User Card, Card Is Read-Only—the SD card in your unit contains data copy protection.

Card Needed—Your unit needs to have an SD card inserted into the SD card slot in order to perform the function you requested.

DSC Position Report Received From—shows the MMSI or name associated with an MMSI.

Database Error—internal problem with the unit. Contact your dealer or Garmin Product Support to have the unit serviced.

Deep Water Alarm—the Deep Water Alarm depth has been reached.

Directory Item With This MMSI Already Exists—the MMSI number is already in the DSC directory. Use a different number.

Directory Memory is Full, Can't Create Entry—the DSC directory has reached the maximum of 100 contacts. Delete unneeded contacts to add new ones.

Distress Call—a DSC distress call has been received. Take appropriate action.

Entering (Leaving) target water temperature—the target water temperature is 2°F (1.1°C) above or below the temperature specified by the Water Temperature Alarm. These messages appear when you enter or leave that zone.

Entering Safe Region—the boat is approaching a safe region as defined by your configuration settings.

Entering Unsafe Region—the boat is approaching an unsafe region as defined by your configuration settings.

Fish Alarm—a beep sounds (if enabled) when a fish is detected. This alarm does not show a message banner.

Invalid MMSI—enter a valid MMSI.

Lost Satellite Reception—the unit has lost satellite signals. Check antenna connections or try moving to a location with a clear view of the sky.

NMEA Depth Is Below Transducer—you must enter an appropriate Keel Offset for the transducer ([page 47](#)).

No Waypoints/Routes/Tracks/User Waypoints Found—attempted to transfer user data from an SD card that does not contain the specified type of data. Make sure there is data to transfer on the SD card.

Off Course Alarm—you are off course the distance set in the “Off Course” alarm.

Route Already Exists—you entered a route name that already exists in memory. Modify the route name or delete the previous route name.

Route Full—you attempted to add more than 250 points to a route. Reduce the number of points or create a second route.

Route Truncated—an uploaded route from another device has more than 250 waypoints and was truncated to fit.

Route Waypoint Memory Full—no additional route waypoints can be saved.

Shallow Water Alarm—the Shallow Water Alarm depth has been reached.

Sonar Service Incompatible—the external sonar device you are connected to needs a software update.

Sonar Timeout—there is an internal problem with the unit. Contact your dealer or Garmin Product Support to have the unit serviced.

Sonar Service Lost—the external sonar device you were connected to has either been disconnected or the unit has lost communication with the sonar device for some other reason.

Track Already Exists [Track Name]—you entered a saved track name that already exists in memory. Modify the track name or delete the existing track.

Track Log Full—the track log is full and track recording has been turned off. To record more track points, you need to clear the track

log and turn track recording on. This only appears when the track recording setting is set to “Stop When Full.”

Track Memory is Full, Can’t Create Track—the track log memory is full. No additional track log data can be stored without deleting old data to create memory space.

Track Truncated—a complete uploaded track does not fit into memory. The oldest track log points were deleted to make space for the most recent data.

Transducer Disconnected, Sonar Turned Off—there is not a transducer attached, there is a bad cable or transducer, or the transducer cable was disconnected. If the transducer cable is removed while the unit is on, reconnect and cycle power.

Transfer Complete—the unit has finished uploading or downloading information to the connected device.

User Card Not Found, Please Insert Card—attempted to transfer user data without an SD card containing user data being present in the SD card slot.

Warning: Auto-guidance route starting and ending position moved due to safe depth settings—the auto-guidance route was calculated but the starting and ending positions were moved because of safe depth settings.

Water Speed Sensor Is Not Working—the speed sensor is not detected. Check the connections.

Water Temperature Alarm—sonar has reported a temperature above, below, inside, or outside the specified values.

Waypoint Already Exists—you entered a waypoint name that already exists in memory. Modify the waypoint name or delete the existing waypoint.

Waypoint Memory Full—waypoint memory is full. Delete waypoints and try again.

Capturing Screenshots

You can capture a screenshot of any screen displayed on your unit as a bitmap (.bmp) file and then transfer it to your computer.

To capture screenshots:

1. Insert an SD card into the SD card slot on the front of the unit.
2. Select **Configure > System > Beeper/Display**.
3. Select **Screenshot Capture** to turn screenshot captures **On**.
4. When you are on a screen you want to capture, press and hold the **HOME** button for at least six seconds.
5. Select **OK** when the Screenshot Taken window is displayed.

To copy the screenshots to your computer:

1. Remove the SD card from the chartplotter and insert it into an SD card reader that is attached to a computer.
2. From Windows Explorer, open the Garmin\scrn folder on the SD card.
3. Copy the appropriate .bmp file on the card and paste it to any location on the computer.

Caring for the Unit

The case is constructed of high-quality materials and does not require user maintenance, except cleaning.

Cleaning the Case

Clean the unit's outer casing (except for the screen) using a cloth dampened with a mild detergent solution and then wipe dry. Avoid chemical cleaners and solvents that may damage plastic components.

Cleaning the Screen

The lens on the screen is coated with a special anti-reflective coating that is sensitive to skin oils, waxes, and abrasive cleaners. Cleaners containing ammonia, alcohol, abrasives, or anti-grease detergents will harm the anti-reflective coating. It is important to clean the lens using an eyeglass lens cleaner (that is specified as safe for anti-reflective coatings) and a clean, lint-free cloth.

NMEA 2000

The following GPSMAP 400 and GPSMAP 500 series chartplotters are NMEA 2000 certified and can receive data from a NMEA 2000 network installed on the boat.

GPSMAP 441/441s GPSMAP 536/536s

GPSMAP 541/541s GPSMAP 546/546s

To connect one of these chartplotter to an existing NMEA 2000 network and to see a list of supported NMEA 2000 PGN numbers, see the *GPSMAP 400/500 Series Installation Instructions*.



Weather Data Warranty

THE WEATHER DATA SOFTWARE PRODUCT IS PROVIDED “AS IS.” ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OF NON-INFRINGEMENT ARE HEREBY EXCLUDED.

USER SAFETY

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GPSMAP 400/500 Series Owner's Manual

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