GPSMAP® 400/500 series
owner’s manual
Introduction

This manual includes information for the following products:

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

Quick Links

- Turning the Unit On or Off: page 3.
- Inserting and Removing SD Cards: page 6.
- Changing the Chart Settings: page 12.
- Navigating to a Destination: page 27.
- Configuring System Settings: page 41.
- Using Sonar: page 50.
- Alarms and Messages: page 71.

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.
# Table of Contents

**Introduction**
- Tips and Shortcuts ................................................................. i

**Manual Conventions** ......................................................... i
- Quick Links ........................................................................... i
- Declaration of Conformity (DoC) ............................................... iv
- Product Registration ............................................................... iv
- Contact Garmin .................................................................... iv

**Getting Started**.................................................................. 1
- Unit Overview........................................................................ 1
- Turning the Unit On or Off ..................................................... 3
- Initializing Unit Settings .......................................................... 3
- Adjusting the Backlight ........................................................... 4
- Using the Keypad ................................................................. 5
- Acquiring GPS Satellite Signals ............................................ 5
- Using Simulator Mode ............................................................ 6
- Viewing System Information .................................................. 6
- Restoring the Original Factory Settings ................................. 6
- Inserting and Removing SD Cards .......................................... 6
- Understanding the Home Screen ......................................... 7

**Using Charts** ................................................................... 8
- Using the Navigation Chart .................................................... 8
- Changing the Navigation Chart Settings ............................... 12
- Using the Split Navigation Chart ........................................... 15
- Using Perspective 3D ............................................................ 15
- Using Mariner's Eye 3D ........................................................ 16
- Using Fish Eye 3D ................................................................ 18
- Using Fishing Charts ............................................................ 19
- Enabling High Resolution Satellite Imagery .......................... 19
- Viewing Aerial Photos .......................................................... 20
- Viewing Current-station Information .................................... 21
- Detailed Road and POI Data .................................................. 21
- Using Automatic Guidance ................................................... 21
- Using the Chart/Sonar Screen .............................................. 21
- Automatic Identification System ......................................... 22

**Where To?** ...................................................................... 27
- Navigating to a Destination .................................................. 27
- Creating and Using Waypoints ............................................. 29
- Creating and Using Routes ................................................... 30
- Using Tracks ........................................................................ 31
- Using BlueChart g2 Vision .................................................... 33
- Navigating with a Garmin Autopilot ..................................... 33

**Viewing Information** .......................................................... 34
- Viewing a Compass ............................................................. 34
- Viewing Numbers ............................................................... 34
- Viewing Trip Information ..................................................... 35
- Viewing Fuel Gauges ............................................................ 35
- Viewing Tide-station Information ......................................... 36
- Viewing Current Information .............................................. 36
- Viewing User Data ............................................................. 37
- Viewing Other Vessels ......................................................... 40
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 536/546

- NMEA 2000
- Power/Data
- External GPS antenna

GPSMAP 531

- SD card slot

GPSMAP 546 shown

POWER/BACKLIGHT
RANGE (+/-)
ROCKER
MARK
SELECT
MENU
HOME
Getting Started

GPSMAP 400/500 Series Owner's Manual

GPSMAP 441/541

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

GPSMAP 530/535/540/545

Power/Data
External GPS antenna

GPSMAP 430x/440x

GXM 31 antenna
External GPS antenna
Power/Data

GPSMAP 430/431/440

XM antenna with audio adapter
External GPS antenna
Power/Data
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.

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.
Getting Started

**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.
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.
Getting Started

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.


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 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.

- **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.
Using Charts

- **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 ( gücü ) 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 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.
Using Charts

Accessing Additional Object Information
Use the map pointer ((mx) 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 (mx) to highlight a tide-station icon (m), 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.

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

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.
Using Charts

**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 navaid. When the cursor is over the navaid, the navaid is highlighted.
2. Press SELECT to view details about the navaid.

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.
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 navaids such as beacons, lights, and obstructions:**
1. Use the **Rocker** to point to the navaid. When the cursor is over the navaid, the navaid is highlighted.
2. Press **SELECT** to view details about the navaid.

**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.
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.

**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).

**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.

**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.

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.
Using Charts

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.

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.

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

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Symbol 1]</td>
<td>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.</td>
</tr>
<tr>
<td>![Symbol 2]</td>
<td>The target has been selected.</td>
</tr>
<tr>
<td>![Symbol 3]</td>
<td>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 <strong>Show</strong> (page 25). If the AIS transmission from the vessel is lost, a message banner appears.</td>
</tr>
<tr>
<td>![Symbol 4]</td>
<td>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.</td>
</tr>
<tr>
<td>![Symbol 5]</td>
<td>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 <strong>Off</strong>, 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.</td>
</tr>
<tr>
<td>![Symbol 6]</td>
<td>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.</td>
</tr>
<tr>
<td>![Symbol 7]</td>
<td>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.</td>
</tr>
</tbody>
</table>

## 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.
Using Charts

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.

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.
Using Charts

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 (_dx) 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 (dx) 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.
Where To?

To delete a waypoint or an MOB:
1. From the Navigation chart, use the map pointer (้ว) 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 (้ว) to select your destination.
2. Select Navigate To > Route To.
3. Use the map pointer (้ว) 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 (้ว) 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 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 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 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.
3. Select the number of fields to show (3, 4, 5, or 6).
4. Select information to show in each field.

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

![Trip Information Screen]

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.
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](http://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.
Viewing Information

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.

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.

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.
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.
Configuring the Chartplotter

**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**.
Configuring the Chartplotter

7. 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**.

8. 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.

9. 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.
Configuring the Chartplotter

- **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.

- ![All sizes](image1)
sounds an alarm for all fish sizes.
- ![Medium-Large sizes](image2)
sounds an alarm for medium and large fish only.
- ![Large sizes](image3)
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.

\[\text{\textbf{NOTICE:}}\] 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 431s
- GPSMAP 530s
- GPSMAP 531s
- GPSMAP 540s
- GPSMAP 541s
- GPSMAP 440s
- GPSMAP 441s
- GPSMAP 535s
- GPSMAP 536s
- GPSMAP 545s
- 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**.
**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**.
Using Sonar

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 (Ultrascroll™, 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. 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.
Using Sonar

**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.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The chartplotter can transfer your GPS position to your radio. If your radio is capable, GPS position information is transmitted with DSC calls.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The chartplotter can receive DSC distress and position information from the radio.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The chartplotter can track the positions of vessels sending position reports.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Quickly set up and send individual routine call details to your Garmin VHF radio.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Using Digital Selective Calling

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.
Using Digital Selective Calling

• 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/](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 Hydrometerological Prediction Center. (See the XM WX Satellite Weather Web site at [http://xmwxweather.com](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 (NEx 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.
Using XM WX Weather and Audio

**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.

<table>
<thead>
<tr>
<th>Front Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Front</td>
<td>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.</td>
</tr>
<tr>
<td>Warm Front</td>
<td>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.</td>
</tr>
<tr>
<td>Stationary Front</td>
<td></td>
</tr>
<tr>
<td>Occluded Front</td>
<td></td>
</tr>
<tr>
<td>Trough</td>
<td></td>
</tr>
</tbody>
</table>
Understanding City Forecasts
City forecasts appear as standard weather symbols. The forecast is viewed in 12-hour increments for the next 48 hours.

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

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

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: $5.7 \times 5.0 \times 3.0$ in. ($14.5 \times 12.7 \times 7.6$ cm)

500 Series: $5.9 \times 6.4 \times 2.9$ in. ($15.0 \times 16.3 \times 7.4$ 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 5ºF to 131ºF (from -15ºC to 55ºC)

Compass-Safe Distances:

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

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

GPSMAP 431/431s GPSMAP 441/441s

GPSMAP 531/531s GPSMAP 541/541s

GPSMAP 536/536s GPSMAP 546/546s

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

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

Update Rate: once per second
Appendix

Acquisition Times: (Average acquisition times for a stationary receiver with a clear view of the sky.)

- **Warm:** Approximately 15 seconds
- **Cold:** Approximately 45 seconds

<table>
<thead>
<tr>
<th>GPSMAP 430/430s</th>
<th>GPSMAP 440/440s</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPSMAP 530/530s</td>
<td>GPSMAP 535/535s</td>
</tr>
<tr>
<td>GPSMAP 530/540s</td>
<td>GPSMAP 535/545s</td>
</tr>
<tr>
<td>GPSMAP 431/431s</td>
<td>GPSMAP 441/441s</td>
</tr>
<tr>
<td>GPSMAP 531/531s</td>
<td>GPSMAP 541/541s</td>
</tr>
<tr>
<td>GPSMAP 536/536s</td>
<td>GPSMAP 546/546s</td>
</tr>
</tbody>
</table>

*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.
Appendix

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.
Appendix

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
If you use XM Services it is your responsibility to exercise prudent discretion and observe all safety measures required by law and your own common sense. You assume the entire risk related to your use of the Services. XM and Garmin assume no responsibility for accidents resulting from or associated with use of the Services.

Your Radio Service includes traffic and weather information, and you acknowledge that such information is not for “safety for life”, but is merely supplemental and advisory in nature, and therefore cannot be relied upon as safety-critical in connection with any aircraft, sea craft or automobile usage. This information is provided “as is” and XM and Garmin disclaim any and all warranties, express and implied, with respect thereto or the transmission or reception thereof. XM and Garmin further do not warrant the accuracy, reliability, completeness or timeliness of the traffic and weather information disclosed on the Radio Service. In no event will XM and Garmin, their data suppliers, service providers, marketing/distribution, software or Internet partners or hardware manufacturers be liable to you or to any third party for any direct, indirect, incidental, consequential, special, exemplary or punitive damages or lost profits resulting from use of or interruptions in the transmission or reception of the Services.

LIMITS ON OUR RESPONSIBILITY
a) DISCLAIMERS.
EXCEPT AS EXPRESSLY PROVIDED HEREIN, WE MAKE NO WARRANTY OR REPRESENTATION, EITHER EXPRESS OR IMPLIED, REGARDING THE RADIO SERVICE. YOUR USE OF THE SERVICE IS AT YOUR SOLE RISK. THE CONTENT AND FUNCTIONALITY OF THE SERVICE IS PROVIDED “AS IS” WITHOUT ANY WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. ALL SUCH WARRANTIES OR REPRESENTATIONS (INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT) ARE HEREBY DISCLAIMED.

b) LIMITATIONS OF LIABILITY.
WE ARE NOT RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OR LOSSES RELATING TO THE USE OF THE RADIO SERVICE, WHETHER BASED ON NEGLIGENCE OR OTHERWISE. OUR TOTAL LIABILITY TO YOU AND ANY OTHER PERSONS
RECEIVING OUR SERVICES, REGARDLESS OF THE CAUSE, WILL IN NO EVENT EXCEED THE AMOUNTS THAT YOU HAVE PAID TO US FOR THE SERVICE THAT YOU RECEIVED DURING THE SIX (6) MONTH PERIOD IMMEDIATELY PRIOR TO THE SPECIFIC EVENT THAT GAVE RISE TO THE APPLICABLE DAMAGE OR LOSS. THIS ALLOCATION OF RISK IS REFLECTED IN OUR PRICES. YOU MAY HAVE GREATER RIGHTS THAN DESCRIBED ABOVE UNDER YOUR STATE’S LAWS.

This product was developed using DAFIF™, a product of the National Geospatial-Intelligence Agency.

This product has not been endorsed or otherwise approved by the National Geospatial-Intelligence Agency, or the United States Department of Defense (10 U.S.C. 425).

a. Under 10 U.S.C. 456, no civil action may be brought against the United States on the basis of the content of a navigational aid prepared or disseminated by either the former Defense Mapping Agency (DMA), National Imagery and Mapping Agency (NIMA), or the National Geospatial-Intelligence Agency (NGA).

b. The DAFIF™ product is provided “as is,” and no warranty, express or implied, including, but not limited to the implied warranties of merchantability and fitness for particular purpose or arising by statute or otherwise in law or from a course of dealing or usage in trade, is made by NGA as to the accuracy and functioning of the product.

c. Neither NGA nor its personnel will be liable for any claims, losses, or damages arising from or connected with the use of this product. The user agrees to hold harmless the United States National Geospatial-Intelligence Agency. The user’s sole and exclusive remedy is to stop using the DAFIF product. This product was developed using DAFIF, a product of the National Geospatial-Intelligence Agency.

Software License Agreement

BY USING THE UNIT, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE FOLLOWING SOFTWARE LICENSE AGREEMENT. PLEASE READ THIS AGREEMENT CAREFULLY.

Garmin grants you a limited license to use the software embedded in this device (the “Software”) in binary executable form in the normal operation of the product. Title, ownership rights, and intellectual property rights in and to the Software remain in Garmin.

You acknowledge that the Software is the property of Garmin and is protected under the United States of America copyright laws and international copyright treaties. You further acknowledge that the structure, organization, and code of the Software are valuable trade secrets of Garmin and that the Software in source code form remains a valuable trade secret of Garmin. You agree not to decompile, disassemble, modify, reverse assemble, reverse engineer, or reduce to human readable form the Software or any part thereof or create any derivative works based on the Software. You agree not to export or re-export the Software to any country in violation of the export control laws of the United States of America.

XM Satellite Radio Service Agreement

XM Satellite Radio Inc.

Hardware and required monthly subscription sold separately. Subscription fee is consumer only. Other fees and taxes, including a one-time activation fee may apply. All programming fees and weather data subject to change. XM WX weather data displays and individual product availability vary by hardware equipment. Reception of the XM signal may vary depending on location. Subscriptions subject to Customer Agreement included with the XM Welcome Kit and available at xmradio.com. XM Radio U.S. Satellite Services available only to those at least 18 years of age in the 48 contiguous United States. XM WX is a trademark of XM Satellite Radio Inc.
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>A-scope 52</td>
</tr>
<tr>
<td>Aerial photos 20</td>
</tr>
<tr>
<td>AIS 22, 40, 48, 59</td>
</tr>
<tr>
<td>AIS Alarm 49</td>
</tr>
<tr>
<td>Alarms 45, 71-74</td>
</tr>
<tr>
<td>Alarm 49</td>
</tr>
<tr>
<td>Arrival 45</td>
</tr>
<tr>
<td>Battery 46</td>
</tr>
<tr>
<td>Clock 46</td>
</tr>
<tr>
<td>Collision 26, 49</td>
</tr>
<tr>
<td>Deep water 46</td>
</tr>
<tr>
<td>Fish 46</td>
</tr>
<tr>
<td>Fuel 47</td>
</tr>
<tr>
<td>GPS Accuracy 46</td>
</tr>
<tr>
<td>Chart/Sonar Screen 21</td>
</tr>
<tr>
<td>Charts 10</td>
</tr>
<tr>
<td>Calibrate Water Speed 48</td>
</tr>
<tr>
<td>Course up 13</td>
</tr>
<tr>
<td>Current stations 36</td>
</tr>
<tr>
<td>Customizing chart settings 12</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>Backup up data 39</td>
</tr>
<tr>
<td>Backlight, adjusting 4</td>
</tr>
<tr>
<td>Beep/Display 41</td>
</tr>
<tr>
<td>BlueChart g2 Vision 33-37</td>
</tr>
<tr>
<td>Bottom lock 54</td>
</tr>
<tr>
<td>Buttons 5</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>Calibrate Water Speed 48</td>
</tr>
<tr>
<td>Chart/Sonar Screen using 21</td>
</tr>
<tr>
<td>Chart Data 10</td>
</tr>
<tr>
<td>Charts 14</td>
</tr>
<tr>
<td>Fish Eye 3D 18</td>
</tr>
<tr>
<td>Fishing 19</td>
</tr>
<tr>
<td>Mariner’s Eye 3D 16</td>
</tr>
<tr>
<td>Navigation settings 12</td>
</tr>
<tr>
<td>Cleaning the Unit 74</td>
</tr>
<tr>
<td>Clear User Data 37</td>
</tr>
<tr>
<td>Collision Alarm 26, 49</td>
</tr>
<tr>
<td>Colors, hazard 17</td>
</tr>
<tr>
<td>Color Scheme 53</td>
</tr>
<tr>
<td>Compass 34</td>
</tr>
<tr>
<td>Compass Rose 12</td>
</tr>
<tr>
<td>Contact information, Garmin IV</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>Dashboard 34</td>
</tr>
<tr>
<td>Data Bars fish eye 3D chart 18</td>
</tr>
<tr>
<td>Navigation chart 9</td>
</tr>
<tr>
<td>Perspective 3D Chart 16</td>
</tr>
<tr>
<td>Sonar 53</td>
</tr>
<tr>
<td>Data transfer 37</td>
</tr>
<tr>
<td>Distress Calls 56</td>
</tr>
<tr>
<td>Display 41</td>
</tr>
<tr>
<td>Display Range 25</td>
</tr>
<tr>
<td>Distress Calls 56</td>
</tr>
<tr>
<td>DSC 49, 55</td>
</tr>
<tr>
<td>Contact 56</td>
</tr>
<tr>
<td>List 56</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>Edit a route 31</td>
</tr>
<tr>
<td>Edit existing waypoint 29</td>
</tr>
<tr>
<td>EGNOS 41</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>Factory settings, restoring 6</td>
</tr>
<tr>
<td>Fish Eye 3D settings 18</td>
</tr>
<tr>
<td>Fishing chart 19</td>
</tr>
<tr>
<td>AIS 26</td>
</tr>
<tr>
<td>MARPA 26</td>
</tr>
<tr>
<td>Fishing information 65</td>
</tr>
<tr>
<td>Fish Symbols 18, 53</td>
</tr>
<tr>
<td>Forecast information 64</td>
</tr>
<tr>
<td>Frequency 54</td>
</tr>
<tr>
<td>Fuel Capacity 48</td>
</tr>
<tr>
<td>Fuel Gauges 35</td>
</tr>
<tr>
<td>Full Screen, Sonar 50</td>
</tr>
<tr>
<td>Fuse 70</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>Gain 54</td>
</tr>
<tr>
<td>Garmin Data Transfer 44</td>
</tr>
<tr>
<td>Gauges, fuel 35</td>
</tr>
<tr>
<td>Go to 27</td>
</tr>
<tr>
<td>GPS 5, 41, 70</td>
</tr>
<tr>
<td>Grid (North) 42</td>
</tr>
<tr>
<td>Guide to 27</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>Hazard Colors 17</td>
</tr>
<tr>
<td>Heading 42</td>
</tr>
<tr>
<td>Heading Line 14</td>
</tr>
<tr>
<td>Head Up 13</td>
</tr>
</tbody>
</table>
Index

high-pressure center 64
HOME key 5
hurricane information 63

I
ID number 6

K
keel offset 47

L
Lane Width 16, 18
Language 42
lightning information 62
low-pressure center 64

M
man overboard 29, 57
map datum 42
MapSource data 37
Mariner’s Eye 3D
   AIS 26
   MARPA 26
mariner’s eye 3D
   colors 17
mark current location 29
MARPA
   threats 26
MENU key 5
messages 71
move a waypoint 29
My Boat 47

N
Navaid Type 14
Navigate To 11, 28, 30, 31, 58
Navigation Alarms 45
navigation chart
   AIS 26
   MARPA 26
navigation charts 8
navigation preferences 42
New Waypoint 16
NEXRAD 61
NMEA 0183 Setup 44
NMEA 2000 Setup 45
NMEA High Speed 44
NMEA Standard 44
Noise Reject 54
north
   grid 42
   magnetic 42
   true 42
north up 13
No Zoom 54
numbers
   customizing 34
   overlay numbers 10
   viewing 34

O
object information
   accessing 12
odometer 35
Other Vessels 48

P
Pause Sonar 53
Perspective 3D 15
   AIS 26
   MARPA 26
photos 12
physical specifications 69
Points of Interest (POI) 14, 21, 33
Position Format 42
position tracking 57
Posn. Precision 45
Power/Backlight key 5
power source 70
product registration iv
Proj. Heading 25

Q
quick links i

R
radio 55
Range (sonar) 54
Range keys 5
Range Rings 16, 18
registering your product iv
restoring factory settings 6
Rocker key 5
Roses 12
routes
   creating 30
deleting 31
editing 31
labels 42
viewing 37
route to 27

S
safe-zone settings 49
Safe Depth 18, 43
Safe Height 43
Safety Shading 14
safe zone collision alarm 26
satellite imagery
   enabling 19
Save To Card 38, 39, 41
screenshots 74
scroll speed 52
SD cards
   inserting 6
   removing 6
sea conditions 66
SELECT key 5
Serial Port setup 44
Service Points 12
settings
alarms 45
chart 12
collision alarm 26
communications 44
fish eye 3D 18
initializing 3
language 42
navigation preferences 42
system 41
units of measure 41
Shoreline Distance 43
simulator 41
mode 6
Skyview 41
software license agreement 76
software version 41
sonar
advanced settings 53
cone 18
full screen 50
scroll speed 52
setting up 52–53
setup 52
specifications 70
split frequency 51
split zoom 51
temperature log 52
specifications 69
Speed Filter 41
Speed Sources 43
Split Frequency 51
Split Zoom 51
spot depths 14
storm cells 62
Surface Noise 52
surface pressure 65
symbols 14
System Alarms 46
System Information 41
viewing 6
system settings 41
T
Temp Log 52
Temp Offset 48
Tides/Currents 12
tide stations 36
viewing information 12
Time (options) 42
tracks 18, 31
Trails 25
transducer
dual frequency 54
transferring data 37, 38
Trip Odometer 35
True (north) 42
turn the unit off 3
Turn Transition 42
U
unit ID number 6
units of measure 41
user data
backing up 38
clearing 37
transferring 38
viewing 37
V
version (software) 41
VHF radio 55
viewing
currents 36
other boats 40
tide stations 36
user data 37
visibility information 67
W
WAAS 41
warnings
county 63
water temperature 65, 72
Waypoint IDs 45
waypoints 16
creating 29
deleting 29, 30
dept 53
edit existing 16, 29
mark current location 29
moving 29
viewing 37
weather 60
Weather Radar 16, 17
Where To 27
Whiteline 53
wind barbs 66
X
XM Audio 68
XM weather 60
Z
zoom 54
2x 54
4x 54
split 54
For the latest free software updates (excluding map data) throughout the life of your Garmin products, visit the Garmin Web site at www.garmin.com.