echoMAP™ CHIRP 40/50/70/90 Series

Owner's Manual

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Introduction

⚠ WARNING

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

Front View

①	Power key
②	Device keys
③	microSD™ memory card slot
④	Automatic backlight sensor

Device Keys

⏻	Turns on and off the device when held.
	Adjusts the backlight and color mode when quickly pressed and released.
−	Zooms out of a chart or view.
+	Zooms in to a chart or view.
◀ ▶ ▼ ▲	Scrolls, highlights options, and moves the cursor.
SELECT	Acknowledges messages and selects options.
BACK	Returns to the previous screen.
MARK	Saves the present location as a waypoint.
HOME	Returns to the Home screen.
MENU	Opens a menu of options for the page, when applicable.
	Closes a menu, when applicable.

Downloading the Manuals

You can get the latest owner's manual and translations of manuals from the web.

1 Go to www.garmin.com/manuals/echoMAP-CHIRP.

TIP: To quickly open this web page, scan this code:

2 Download the manual.

Manual Conventions

In this manual, the term “select” is used to describe these actions.

- Using the arrow keys to highlight a menu item, and then pressing SELECT (for hard key devices only).
- Pressing a key, such as SELECT or MENU.

When you are instructed to select multiple items in a series, small arrows appear in the text. For example, "select **MENU** > **Add**," indicates that you need to select the MENU item or hard key and then select the Add item.

The images in this manual are for reference only and may not match your device exactly.

Getting More Information

If you have any questions about your device, you can contact Garmin® Product Support.

The website, www.garmin.com/support, offers many different troubleshooting tips to help resolve most issues and answer most questions.

- Frequently-asked questions (FAQs)
- Software updates
- Owner's and installation manuals
- Service alerts
- Video
- Contact numbers and addresses

Inserting Memory Cards

You can use optional memory cards in the chartplotter. Map cards allow you to view high-resolution satellite imagery and aerial reference photos of ports, harbors, marinas, and other points of interest. You can use blank memory cards to record sonar data and transfer data such as waypoints, routes, and tracks to another compatible Garmin chartplotter or a computer.

1 Open the access flap or door on the front of the chartplotter.
2 Insert the memory card.
3 Press the card in until it clicks.

4 Close the door.

Loading the New Software on a Memory Card

1 Insert a memory card into the card slot on the computer.
2 Go to www.garmin.com/support/software/marine.html.
3 Select **Download** next to **echoMAP Series with SD Card**.
4 Read and agree to the terms.
5 Select **Download**.
6 Select **Run**.
7 Select the drive associated with the memory card, and select **Next** > **Finish**.

Software Update

You may need to update the device software when you install the device or add an accessory to the device.

Updating the Device Software

Before you can update the software, you must obtain a software-update memory card or load the latest software onto a memory card.

1 Turn on the chartplotter.

2. After the home screen appears, insert the memory card into the card slot.

   NOTE: In order for the software update instructions to appear, the device must be fully booted before the card is inserted.
3. Follow the on-screen instructions.
4. Wait several minutes while the software update process completes.

   The device returns to normal operation after the software update process is complete.
5. Remove the memory card.

   NOTE: If the memory card is removed before the device restarts fully, the software update is not complete.

GPS Satellite Signals

When you turn on the chartplotter, the GPS receiver must collect satellite data and establish the current location. When the chartplotter acquires satellite signals, appears at the top of the Home screen. When the chartplotter loses satellite signals, disappears and a flashing question mark appears over on the chart.

For more information about GPS, go to www.garmin.com/aboutGPS.

Selecting the GPS Source

You can select your preferred source for GPS data, if you have more than one GPS source.

1. Select **Settings** > **System** > **GPS**.
2. Select the source for GPS data.

Adjusting the Backlight

1. Select **Settings** > **System** > **Display** > **Backlight**.

   TIP: Press from any screen to open the backlight settings.
2. Adjust the backlight.

Adjusting the Color Mode

1. Select **Settings** > **System** > **Display** > **Color Mode**.

   TIP: Press from any screen to access the color settings.
2. Select an option.

Customizing the Home Screen

You can add items to and rearrange items on the Home screen.

1. From the Home screen, select **Customize Home**.
2. Select an option:
   - To rearrange an item, select **Rearrange**, select the item to move, and select the new location.
   - To add an item to the Home screen, select **Add**, and select the new item.
   - To remove an item you have added to the Home screen, select **Remove**, and select the item.

Charts and 3D Chart Views

The charts and 3D chart views that are available depend on the map data and accessories used.

You can open the charts and 3D chart views by selecting Charts.

Navigation Chart: Shows navigation data available on your pre-loaded maps and from supplemental maps, if available. The data includes buoys, lights, cables, depth soundings, marinas, and tide stations in an overhead view.

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

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

NOTE: Mariner's Eye 3D and Fish Eye 3D chart views are available with premium charts, in some areas.

Fish Eye 3D: Provides an underwater view that visually represents the sea floor according to the chart information. When a sonar transducer is connected, suspended targets (such as fish) are indicated by red, green, and yellow spheres. Red indicates the largest targets and green indicates the smallest.

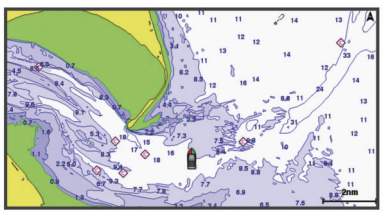
Fishing Chart: Provides a detailed view of the bottom contours and depth soundings on the chart. This chart removes navigational data from the chart, provides detailed bathymetric data, and enhances bottom contours for depth recognition. This chart is best for offshore deep-sea fishing.

Navigation Chart and Offshore Fishing Chart

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

The Navigation and Fishing charts allow you to plan your course, view map information, and follow a route. The Fishing chart is for offshore fishing.

To open the Navigation chart, select **Charts** > **Navigation Chart**.



To open the Fishing chart, select **Charts** > **Fishing Chart**.

Zooming In and Out of the Chart

The zoom level is indicated by the scale number at the bottom of the chart. The bar under the scale number represents that distance on the chart.

- Select to zoom out.
- Select to zoom in.

Panning the Chart with the Keys

You can move the chart to view an area other than your present location.

1. From the chart, use the arrow keys.
2. Select **BACK** to stop panning and return the screen to your present location.

   NOTE: To pan from a combination screen, select SELECT.

Selecting an Item on the Map Using the Device Keys

1. From a chart or 3D chart view, select , , , or to move the cursor.
2. Select **SELECT**.

Measuring a Distance on the Chart

Select **Measure Distance**.

A push pin appears on the screen at your present location. The distance and angle from the pin is listed in the corner.

TIP: To reset the pin and measure from the current location of the cursor, select SELECT.

Chart Symbols

This table contains some of the common symbols you might see on the detailed charts.

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

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

Navigating to a Point on the Chart

⚠ CAUTION

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

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

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

NOTE: Auto Guidance is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a location.
2. If necessary, select **SELECT**.
3. Select **Navigate To**.
4. Select an option:
   - To navigate directly to the location, select **Go To**.
   - To create a route to the location, including turns, select **Route To**.
   - To use Auto Guidance, select **Guide To**.
5. Review the course indicated by the magenta line.

   NOTE: When using Auto Guidance, a gray segment within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and minimum safe obstacle height.
6. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

Viewing Location and Object Information on a Chart

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

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a location or object.

   A list of options appears along the right side of the chart. The options that appear vary based on the location or object you selected.
2. Select an option:
   - To navigate to the selected location, select **Navigate To**.
   - To mark a waypoint at the cursor location, select **New Waypoint**.
   - To view the distance and bearing of the object from your current location, select **Measure Distance**.

     The distance and bearing appear on the screen. Select **SELECT** to measure from a location other than your current location.
   - To view tide, current, celestial, chart notes, or local services information near the cursor, select **Information**.

Viewing Details about Navaids

From the Navigation chart, Fishing chart, Perspective 3D chart view, or Mariner's Eye 3D chart view, you can view details about various types of navigation aids, including beacons, lights, and obstructions.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

NOTE: Mariner's Eye 3D and Fish Eye 3D chart views are available with premium charts, in some areas.

1. From a chart or 3D chart view, select a navaid.
2. Select the name of the navaid.

Heading Line and Angle Markers

The heading line is an extension drawn on the map from the bow of the boat in the direction of travel. Angle markers indicate where you should navigate and are helpful for casting.

Setting the Heading and Course Over Ground Lines

You can show the heading line and the course over ground (COG) line on the chart.

COG is your direction of movement. Heading is the direction the bow of the boat is pointed, when a heading sensor is connected.

1. From a chart view, select **MENU** > **Chart Setup** > **Chart Appearance** > **Heading Line**.
2. If necessary, select **Source**, and select an option:
   - To automatically use the source available, select **Auto**.
   - To use the GPS antenna heading for COG, select **GPS Heading (COG)**.
   - To use data from a connected heading sensor, select **Heading**.
   - To use data from both a connected heading sensor and the GPS antenna, select **COG and Heading**.

     This displays both the heading line and the COG line on the chart.
3. Select **Display**, and select an option:
   - Select **Distance** > **Distance**, and enter the length of the line shown on the chart.
   - Select **Time** > **Time**, and enter the time used to calculate the distance your boat will travel in the specified time at your present speed.

Turning on Angle Markers

You can add angle markers to the map along the heading line. Angle markers can be helpful for casting when fishing.

1. Set the heading line (*Setting the Heading and Course Over Ground Lines*, page 3).
2. Select **Angle Markers**.

Premium Charts

⚠ CAUTION

The Auto Guidance feature is based on electronic chart information. That data does not ensure obstacle and bottom clearance. Carefully compare the course to all visual sightings,

and avoid any land, shallow water, or other obstacles that may be in your path.

NOTE: Not all models support all charts.

Optional premium charts, such as BlueChart® g2 Vision®, allow you to get the most out of your chartplotter. In addition to detailed marine charting, premium charts may contain these features, which are available in some areas.

Mariner's Eye 3D: Provides a view from above and behind the boat for a three-dimensional navigation aid.

Fish Eye 3D: Provides an underwater, three-dimensional view that visually represents the sea floor according to the information on the chart.

Fishing Charts: Shows 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 (*Showing Satellite Imagery on the Navigation Chart*, page 4).

Aerial Photos: Shows marinas and other navigationally significant aerial photos to help you visualize your surroundings (*Viewing Aerial Photos of Landmarks*, page 4).

Detailed Roads and POI data: Shows detailed road and point of interest (POI) data, which includes highly detailed coastal roads and POIs such as restaurants, lodging, and local attractions.

Auto Guidance: Uses specified safe depth, safe height, and chart data to determine the best course to your destination.

Viewing Tide Station Information

⚓ on the chart indicates a tide station. You can view a detailed graph for a tide station to help predict the tide level at different times or on different days.

NOTE: This feature is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a tide station.

   Tide direction and tide level information appear near ⚓.
2. Select the station name.

Animated Tide and Current Indicators

NOTE: This feature is available with premium charts, in some areas.

You can view indicators for animated tide station and current direction on the Navigation chart or the Fishing chart. You must also enable animated icons in the chart settings (*Showing Tides and Current Indicators*, page 4).

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

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

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

Showing Tides and Current Indicators

NOTE: This feature is available with premium charts, in some areas.

You can show static or animated tide and current station indicators on the Navigation chart or Fishing chart.

1. From the Navigation or Fishing chart, select **MENU** > **Chart Setup** > **Tides & Currents**.
2. Select an option:
   - To show current station indicators and tide station indicators on the chart, select **On**.
   - To show animated tide station indicators and animated current direction indicators on the chart, select **Animated**.

Showing Satellite Imagery on the Navigation Chart

NOTE: This feature is available with premium charts, in some areas.

You can overlay high-resolution satellite images on the land or on both land and sea portions of the Navigation chart.

NOTE: When enabled, high-resolution satellite images are present only at lower zoom levels. If you cannot see high-resolution images in your optional chart region, you can select ✚ to zoom in. You also can set the detail level higher by changing the map zoom detail.

1. From the Navigation chart, select **MENU** > **Chart Setup** > **Satellite Photos**.
2. Select an option:
   - Select **Land Only** to show standard chart information on the water, with photos overlaying the land.
   - Select **Photo Map Blend** to show photos on both the water and the land at a specified opacity. Use the slider bar to adjust the photo opacity. The higher you set the percentage, the more the satellite photos cover both land and water.

Viewing Aerial Photos of Landmarks

Before you can view aerial photos on the Navigation chart, you must turn on the Photo setting in the chart setup.

NOTE: This feature is available with premium charts, in some areas.

You can use aerial photographs of landmarks, marinas, and harbors to help orient yourself to your surroundings or to acquaint yourself with a marina or a harbor prior to arrival.

1. From the Navigation chart, select a camera icon:
   - To view an overhead photo, select 📷.
   - To view a perspective photo, select 📷. The photo was taken from the location of the camera, pointed in the direction of the cone.
2. Select **Aerial Photo**.

Garmin Quickdraw™ Contours Mapping

The Garmin Quickdraw Contours mapping feature allows you to create maps with contours and depth labels to increase the accuracy of existing maps.

When you record data using Garmin Quickdraw Contours mapping, you should use a Speed Class 10 memory card to ensure that your device has enough processing speed. The amount of saved data depends on the size of your memory card, your sonar source, and the speed of your boat as you record data. You can record longer when you use a single-beam sonar.

When Garmin Quickdraw Contours records data, a colored circle surrounds the vessel icon. This circle represents the approximate area of the map that is scanned by each pass. A green circle indicates good depth and a good GPS position. A red circle indicates that the depth or GPS position data is unavailable.

You can view Garmin Quickdraw Contours in a combination screen or as a single view on the map.

When you record data on a memory card in your chartplotter, the new data is added to your existing Garmin Quickdraw Contours map, and is saved on the memory card. When you insert a new memory card, the existing data does not transfer onto the new card.

Mapping a Body of Water Using the Garmin Quickdraw Contours Feature

Before you can use the Garmin Quickdraw Contours feature, you must have a supported chartplotter with upgraded software, sonar depth, your GPS position, and a memory card with free space.

NOTE: This feature is not available on all models.

1. From a chart view, select **MENU** > **Quickdraw Contours** > **Start Recording**.
2. When recording is complete, select **Stop Recording**.
3. Select **Manage** > **Name**, and enter a name for the map.

Adding a Label to a Garmin Quickdraw Contours Map

You can add labels to a Garmin Quickdraw Contours map to mark hazards or points of interest.

1. Select a location.
2. Select **SELECT** > **Add Quickdraw Label**.
3. Enter text for the label, and select **Done**.

Garmin Quickdraw Contours Settings

From the chart, select **MENU** > **Quickdraw Contours** > **Settings**.

Recording Offset: Sets the distance between the sonar depth and the contour recording depth. For example, a sonar depth of 3.6 m (12 ft.) with a recording offset of -0.5 m (-1.5 ft.) creates contours at a depth of 3.1 m (10.5 ft.).

Display Offset: Sets differences in contour depths and depth labels on a Garmin Quickdraw Contours map to compensate for changes in the water level of a body of water, or for depth errors in recorded maps.

Survey Coloring: Sets the color of the Garmin Quickdraw Contours display. When the setting is turned on, successfully recorded areas appear green, and unsuccessfully recorded areas appear red. When the setting is turned off, the contour areas use standard map colors.

Automatic Identification System

The Automatic Identification System (AIS) enables you to identify and track other vessels, and 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), location, GPS speed, GPS heading, time that has elapsed since the last position of the vessel was reported, nearest approach, and time to the nearest approach.

Some chartplotter models also support Blue Force Tracking. Vessels being tracked with Blue Force Tracking are indicated on the chartplotter with a blue-green color.

AIS Targeting Symbols

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

NOTE: Vessels being tracked with the Blue Force Tracking feature are indicated with a blue-green color regardless of their status.

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. If an activated AIS target is not transmitting speed information, or if the vessel is not moving, a projected course line does not appear. Changes in the speed, course over ground, or rate of turn information transmitted by the vessel can impact the calculation of the projected course line.

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

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 3D Chart View

Before you can use AIS, you must connect the chartplotter to an external AIS device and receive 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.

1. From a chart or 3D chart view, select **MENU** > **Other Vessels** > **AIS Display Setup**.
2. Select an option:
   - To indicate the distance from your location in which AIS vessels appear, select **AIS Display Range**, and select a distance.
   - To show details about AIS-activated vessels, select **Details** > **Show**.
   - To set the projected heading time for AIS-activated vessels, select **Projected Heading**, and enter the time.
   - To show the tracks of AIS vessels, select **Trails**, and select the length of the track that appears using a trail.

Activating a Target for an AIS Vessel

1. From a chart or a 3D chart view, select an AIS vessel.
2. 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 a chart or a 3D chart view, select an AIS vessel.
2. Select **AIS Vessel**.

Deactivating a Target for an AIS Vessel

1. From a chart or a 3D chart view, select an AIS vessel.
2. Select **AIS Vessel** > **Deactivate Target**.

Viewing a List of AIS Threats

From a chart or 3D chart view, select **MENU** > **Other Vessels** > **AIS List**.

Setting the Safe-Zone Collision Alarm

Before you can set a safe-zone collision alarm, you must have a compatible chartplotter connected to an AIS device.

The safe-zone collision alarm is used only with AIS. The safe zone is used for collision avoidance, and can be customized.

1. Select **Settings** > **Alarms** > **AIS** > **AIS Alarm** > **On**.

   A message banner appears and an alarm sounds when an AIS-activated vessel enters the safe-zone area around your boat. The object is also labeled as dangerous on the screen. When the alarm is off, the message banner and audible alarm are disabled, but the object is still labeled as dangerous on the screen.
2. Select **Range**.
3. Select a distance for the safe-zone radius around your vessel.
4. Select **Time To**.
5. Select a time at which the alarm will sound if a target is determined to intersect the safe zone.

   For example, to be notified of a pending intersection 10 minutes before it will likely occur, set Time To to 10, and the alarm will sound 10 minutes before the vessel intersects the safe zone.

AIS Distress Signals

Self-contained AIS distress signal devices transmit emergency position reports when activated. The chartplotter can receive signals from Search and Rescue Transmitters (SART), Emergency Position Indicating Radio Beacons (EPIRB), and other man overboard signals. Distress signal transmissions are different than standard AIS transmissions, so they appear differently on the chartplotter. Instead of tracking a distress signal transmission for collision avoidance, you track a distress signal transmission to locate and assist a vessel or person.

Navigating to a Distress Signal Transmission

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

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

AIS Distress Signal Device Targeting Symbols

Symbol	Description
	AIS distress signal device transmission. Select to see more information about the transmission and begin navigation.
	Transmission lost.
	Transmission test. Appears when a vessel initiates a test of their distress signal device, and does not represent a true emergency.
	Transmission test lost.

Enabling AIS Transmission Test Alerts

To avoid a large number of test alerts and symbols in crowded areas such as marinas, you can select to receive or ignore AIS test messages. To test an AIS emergency device, you must enable the chartplotter to receive test alerts.

1. Select **Settings** > **Alarms** > **AIS**.
2. Select an option:
   - To receive or ignore Emergency Position Indicating Radio Beacon (EPRIB) test signals, select **AIS-EPIRB Test**.
   - To receive or ignore Man Overboard (MOB) test signals, select **AIS-MOB Test**.
   - To receive or ignore Search and Rescue Transponder (SART) test signals, select **AIS-SART Test**.

Turning Off AIS Reception

AIS signal reception is turned on by default.

Select **Settings** > **Other Vessels** > **AIS** > **Off**.

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

Chart and 3D Chart View Settings

NOTE: Not all settings apply to all charts and 3D chart views. Some options require premium maps or connected accessories.

These settings apply to the charts and 3D chart views, except Fish Eye 3D (*Fish Eye 3D Settings*, page 8).

From a chart or a 3D chart view, select MENU.

Waypoints & Tracks: See *Waypoints and Tracks Settings on the Charts and Chart Views*, page 7.

Other Vessels: See *Other Vessels Settings on the Charts and Chart Views*, page 8.

Navaids: Shows navigational aids on the Fishing chart.

Chart Setup: See *Navigation and Fishing Chart Setup*, page 6.

Overlay Numbers: See *Overlay Numbers Settings*, page 7. This might appear in the Chart Setup menu.

Chart Appearance: See *Chart Appearance Settings*, page 7. This might appear in the Chart Setup menu.

Navigation and Fishing Chart Setup

NOTE: Not all settings apply to all charts and 3D chart views. Some settings require external accessories or applicable premium charts.

From the Navigation chart or Fishing chart, select **MENU** > **Chart Setup**.

Satellite Photos: Shows high-resolution satellite images on the land or on both land and sea portions of the Navigation chart,

when certain premium maps are used (*Showing Satellite Imagery on the Navigation Chart*, page 4).

Water Overlay: Enables relief shading, which shows the gradient of the bottom with shading, or sonar imagery, which helps identify the density of the bottom. This feature is available only with some premium maps.

Tides & Currents: Shows current station indicators and tide station indicators on the chart (*Showing Tides and Current Indicators*, page 4) and enables the tides and current slider, which sets the time for which tides and currents are reported on the map.

Roses: Shows a compass rose around your boat, indicating compass direction oriented to the heading of the boat. A true wind direction or apparent wind direction indicator appears if the chartplotter is connected to a compatible marine wind sensor. When in sailing mode, true and apparent wind are shown on the wind rose.

Lake Level: Sets the present water level of the lake. This feature is available only with some premium maps.

Overlay Numbers: See *Overlay Numbers Settings*, page 7.

Weather: Sets which weather items are shown on the chart, when the chartplotter is connected to a compatible weather receiver with an active subscription. Requires a compatible, connected antenna and an active subscription.

Chart Appearance: See *Chart Appearance Settings*, page 7.

Waypoints and Tracks Settings on the Charts and Chart Views

From a chart or a 3D chart view, select **MENU** > **Waypoints & Tracks**.

Tracks: Shows tracks on the chart or 3D chart view.

Waypoints: Shows the list of waypoints (*Viewing a List of all Waypoints*, page 10).

New Waypoint: Creates a new waypoint.

Waypoint Display: Sets how to display waypoints on the chart.

Active Tracks: Shows the active track options menu.

Saved Tracks: Shows the list of saved tracks (*Viewing a List of Saved Tracks*, page 11).

Tracks Display: Sets which tracks to display on the chart based on track color.

Overlay Numbers Settings

From a chart, 3D chart view, the Radar screen, or a Combinations screen, select **MENU** > **Overlay Numbers**.

Edit Layout: Sets the layout of the data overlay, or data fields. You can select the data to be shown within each data field.

Navigation Inset: Shows the navigation inset when the vessel is navigating to a destination.

Navigation Inset Setup: Allows you to configure the navigation inset to show Route Leg Details, and to control when the inset appears before a turn or destination.

Compass Tape: Shows the compass tape data bar when the vessel is navigating to a destination.

Editing the Data Fields

You can change the data shown in the overlay numbers displayed on the charts and other screens.

1. From a screen that supports overlay numbers, select **MENU**.
2. If necessary, select **Chart Setup**.
3. Select **Overlay Numbers** > **Edit Layout**.
4. Select a layout.
5. Select a data field.
6. Select the type of data shown in the field.

Showing a Navigation Inset

You can control whether a navigation inset appears on some chart views. The navigation inset is shown only when the boat is navigating to a destination.

1. From a chart or 3D chart view, select **MENU**.
2. If necessary, select **Chart Setup**.
3. Select **Overlay Numbers** > **Navigation Inset** > **Auto**.
4. Select **Navigation Inset Setup**.
5. Complete an action:
   - To show waypoint velocity made good (VMG) when navigating a route with more than one leg, select **Route Leg Details** > **On**.
   - To show next-turn data based on distance, select **Next Turn** > **Distance**.
   - To show next-turn data based on time, select **Next Turn** > **Time**.
   - To indicate how the destination data appears, select **Destination**, and select an option.

Chart Appearance Settings

You can adjust the appearance of the different charts and 3D chart views. Each setting is specific to the chart or chart view being used.

NOTE: Not all settings apply to all charts and 3D chart views and chartplotter models. Some options require premium maps or connected accessories.

From a chart or 3D chart view, select **MENU** > **Chart Setup** > **Chart Appearance**.

Orientation: Sets the perspective of the map.

Detail: Adjusts the amount of detail shown on the map, at different zoom levels.

Heading Line: Shows and adjusts the heading line, which is a line drawn on the map from the bow of the boat in the direction of travel, and sets the data source for the heading line.

Panoptix Area: Shows and hides the area being scanned by the Panoptix™ transducer. The attitude and heading reference system (AHRS) must be calibrated use this feature (*Transducer Installation Settings*, page 16).

World Map: Uses either a basic world map or a shaded relief map on the chart. These differences are visible only when zoomed out too far to see the detailed charts.

Spot Depths: Turns on spot soundings and sets a dangerous depth. Spot depths that are equal to or more shallow than the dangerous depth are indicated by red text.

Shallow Shading: Sets the shades from the shoreline to the specified depth.

Depth Range Shading: Specifies an upper and lower depth to shade between.

Symbols: Shows and configures the appearance of various symbols on the chart, such as the vessel icon, navaid symbols, land POIs, and light sectors.

Style: Sets how the chart appears over 3D terrain.

Hazard Colors: Shows shallow water and land with a color scale. Blue indicates deep water, yellow is shallow water, and red is very shallow water.

Safe Depth: Sets the appearance of a safe depth for the Mariner's Eye 3D chart view.

NOTE: This setting affects only the appearance of hazard colors for the Mariner's Eye 3D chart view. It does not affect the safe water depth Auto Guidance setting or the sonar shallow water alarm setting.

Range Rings: Shows and configures the appearance of range rings, which help you to visualize distances in some chart views.

Lane Width: Specifies the width of the navigation lane, which is the magenta line in some chart views that indicates the course to your destination.

Setting the Heading and Course Over Ground Lines

You can show the heading line and the course over ground (COG) line on the chart.

COG is your direction of movement. Heading is the direction the bow of the boat is pointed, when a heading sensor is connected.

1. From a chart view, select **MENU** > **Chart Setup** > **Chart Appearance** > **Heading Line**.
2. If necessary, select **Source**, and select an option:
   - To automatically use the source available, select **Auto**.
   - To use the GPS antenna heading for COG, select **GPS Heading (COG)**.
   - To use data from a connected heading sensor, select **Heading**.
   - To use data from both a connected heading sensor and the GPS antenna, select **COG and Heading**.

     This displays both the heading line and the COG line on the chart.
3. Select **Display**, and select an option:
   - Select **Distance** > **Distance**, and enter the length of the line shown on the chart.
   - Select **Time** > **Time**, and enter the time used to calculate the distance your boat will travel in the specified time at your present speed.

Other Vessels Settings on the Charts and Chart Views

NOTE: These options require connected accessories, such as an AIS receiver or VHF radio.

From a chart or 3D chart view, select **MENU** > **Other Vessels**.

AIS List: Shows the AIS list (*Viewing a List of AIS Threats*, page 6).

DSC List: Shows the DSC list (*DSC List*, page 20).

AIS Display Setup: See *AIS Display Settings*, page 8.

DSC Trails: Shows the tracks of DSC vessels, and selects the length of the track that appears using a trail.

AIS Alarm: Sets the safe-zone collision alarm (*Setting the Safe-Zone Collision Alarm*, page 6).

AIS Display Settings

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

From a chart or 3D chart view, select **MENU** > **Other Vessels** > **AIS Display Setup**.

AIS Display Range: Indicates the distance from your location within which AIS vessels appear.

Details: Shows details about AIS-activated vessels.

Projected Heading: Sets the projected heading time for AIS-activated vessels.

Trails: Shows the tracks of AIS vessels, and select the length of the track that appears using a trail.

Fish Eye 3D Settings

NOTE: This feature is available with premium charts, in some areas.

From the Fish Eye 3D chart view, select MENU.

View: Sets the perspective of the 3D chart view.

Tracks: Shows tracks.

Sonar Cone: Shows a cone that indicates the area covered by the transducer.

Fish Symbols: Shows suspended targets.

Navigation with a Chartplotter

⚠ CAUTION

If your vessel has an autopilot system, a dedicated autopilot control display must be installed at each steering helm in order to disable the autopilot system.

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

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

NOTE: Auto Guidance is available with premium charts, in some areas.

NOTE: Mariner's Eye 3D and Fish Eye 3D chart views are available with premium charts, in some areas.

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

To navigate, you must choose a destination, set a course or create a route, and follow the course or route. You can follow the course or the route on the Navigation chart, Fishing chart, Perspective 3D chart view, or Mariner's Eye 3D chart view.

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

Go To: Takes you directly to the destination. This is the standard option for navigating to a destination. The chartplotter creates a straight-line course or navigation line to the destination. The path may run over land and other obstacles.

Route To: Creates a route from your location to a destination, allowing you to add turns along the way. This option provides a straight-line course to the destination, but allows you to add turns into the route to avoid land and other obstacles.

Guide To: Creates a path to a destination using Auto Guidance. This option is available only when using a compatible premium chart in a compatible chartplotter. It provides a turn-by-turn navigation line to the destination, avoiding land and other obstacles. The navigation line is based on the chart data and the safe depth, safe height, and shoreline distance user-defined chartplotter settings. Using these settings and chart data, the chartplotter creates a navigation line that avoids all areas that cannot be navigated between the present location and the destination.

When you are using a compatible Garmin autopilot connected to the chartplotter using NMEA 2000®, the autopilot follows the Auto Guidance route.

Basic Navigation Questions

Question	Answer
How do I make the chartplotter point me in the direction in which I want to go (bearing)?	Navigate using Go To. See *Setting and Following a Direct Course Using Go To*, page 9.
How do I make the device guide me along a straight line (minimizing cross track) to a location using the shortest distance from the present location?	Build a single-leg route and navigate it using Route To. See *Creating and Navigating a Route From Your Present Location*, page 10.

Question	Answer
How do I make the device guide me to a location while avoiding charted obstacles?	Build a multi-leg route and navigate it using Route To. See *Creating and Navigating a Route From Your Present Location*, page 10.
How do I make the device steer my automatic pilot?	Navigate using Route To. See *Creating and Navigating a Route From Your Present Location*, page 10.
Can the device create a path for me?	If you have premium maps that support Auto Guidance and are in an area covered by Auto Guidance, navigate using Auto Guidance. See *Setting and Following an Auto Guidance Path*, page 12.
How do I change the Auto Guidance settings for my boat?	See *Auto Guidance Line Configurations*, page 13.

Destinations

You can select destinations using various charts and 3D chart views or using the lists.

Searching for a Destination by Name

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

1. Select **Navigation Info** > **Search by Name**.
2. Enter at least a portion of the name of your destination.
3. If necessary, select **Done**.

   The 50 nearest destinations that contain your search criteria appear.
4. Select the destination.

Selecting a Destination Using the Navigation Chart

From the Navigation chart, select a destination.

Searching for Destination Using User Data

1. Select **User Data**.
2. Select an option:
   - To view a list of preloaded locations and previously marked locations, select **Waypoints**.
   - To view a list of previously saved routes, select **Routes**.
   - To view a list of recorded tracks, select **Tracks**.
   - To view a list of slips, moorings, and other offshore points of interest, select **Offshore Services**.
   - To view a list of marinas and other inland points of interest, select **Inland Services**.
   - To search for a destination by name, select **Search by Name**.
3. Select a destination.

Searching for a Marine Services Destination

NOTE: This feature is available with premium charts, in some areas.

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

1. Select **Navigation Info**.
2. Select **Offshore Services** or **Inland Services**.
3. If necessary, select the marine service category.

   The chartplotter shows a list of the nearest locations and the distance and bearing to each.
4. Select a destination.

   You can select ❮ or ❯ to view additional information or to show the location on a chart.

Courses

⚠ CAUTION

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

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

NOTE: Auto Guidance is available with premium charts, in some areas.

⚠ CAUTION

Garmin recommends using Guide To only under motor power. Using Guide To while under sail can cause an unexpected gybe, risking damage to the sailboat. Unattended sails and rigging can be damaged or cause injury to any crew or passengers during an unexpected gybe maneuver.

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

Go To: Takes you directly to the destination. This is the standard option for navigating to a destination. The chartplotter creates a straight line course or navigation line to the destination. The path may run over land and other obstacles.

Route To: Creates a route from your location to a destination, allowing you to add turns along the way. This option provides a straight line course to the destination, but allows you to add turns into the route that avoid land and other obstacles.

Guide To: Creates a path to a destination using Auto Guidance. This option is available only when using a compatible premium chart in a compatible chartplotter. It provides a turn-by-turn navigation line to the destination, avoiding land and other obstacles. The navigation line is based on the chart data and the safe depth, safe height, and shoreline distance user-defined chartplotter settings. Using these settings and chart data, the chartplotter creates a navigation line that avoids all areas that cannot be navigated between the present location and the destination. When you are using a compatible Garmin autopilot connected to the chartplotter using NMEA 2000, the autopilot follows the Auto Guidance route.

Setting and Following a Direct Course Using Go To

⚠ CAUTION

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

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

1. Select a destination (*Destinations*, page 9).
2. Select **Navigate To** > **Go To**.

   A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your current location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
3. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.
4. If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

Stopping Navigation

From the Navigation chart or Fishing chart, select **MENU** > **Stop Navigation**.

Waypoints

Waypoints are locations you record and store in the device. Waypoints can mark where you are, where you are going, or where you have been. You can add details about the location, such as name, elevation, and depth.

Marking Your Present Location as a Waypoint

From any screen, select **MARK**.

Creating a Waypoint at a Different Location

1. Select **User Data** > **Waypoints** > **New Waypoint**.
2. Select an option:
   - To create the waypoint by entering position coordinates, select **Enter Coordinates**, and enter the coordinates.
   - To create the waypoint using a chart, select **Route Using Chart**, select the location, and select **SELECT**.

Marking an MOB or SOS Location

From the Home screen, select **Man Overboard** > **Yes**.

An international man overboard (MOB) symbol marks the active MOB point and the chartplotter sets a direct course back to the marked location.

Viewing a List of all Waypoints

Select **User Data** > **Waypoints**.

Editing a Saved Waypoint

1. Select **User Data** > **Waypoints**.
2. Select a waypoint.
3. Select **Edit Waypoint**.
4. Select an option:
   - To add a name, select **Name**, and enter a name.
   - To change the symbol, select **Symbol**.
   - To change the depth, select **Depth**.
   - To change the water temperature, select **Water Temp.**.
   - To change the comment, select **Comment**.
   - To move the position of the waypoint, select **Position**.

Browsing for and Navigating to a Saved Waypoint

⚠ CAUTION

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

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

NOTE: Auto Guidance is available with premium charts, in some areas.

Before you can navigate to a waypoint, you must create a waypoint.

1. Select **User Data** > **Waypoints**.
2. Select a waypoint.
3. Select **Navigate To**.
4. Select an option:
   - To navigate directly to the location, select **Go To**.
   - To create a route to the location, including turns, select **Route To**.
   - To use Auto Guidance, select **Guide To**.
5. Review the course indicated by the magenta line.

   NOTE: When using Auto Guidance, a gray segment within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and minimum safe obstacle height.
6. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

Deleting a Waypoint or an MOB

1. Select **User Data** > **Waypoints**.
2. Select a waypoint or an MOB.
3. Select **Delete**.

Deleting All Waypoints

Select **User Data** > **Manage Data** > **Clear User Data** > **Waypoints** > **All**.

Routes

A route is a sequence of waypoints or locations that leads you to your final destination.

Creating and Navigating a Route From Your Present Location

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

NOTE: The offshore Fishing chart is available with premium charts, in some areas.

1. From the Navigation chart or Fishing chart, select a destination.
2. Select **Navigate To** > **Route To**.
3. Select the location of the last turn before the destination.
4. Select **Add Turn**.
5. If necessary, repeat step 3 and 4 to add additional turns, working backward from the destination to the present location of your vessel.

   The last turn you add should be the first turn you make, starting from your present location. It should be the turn closest to your vessel.
6. If necessary, select **MENU**.
7. Select **Navigate Route**.
8. Review the course indicated by the magenta line.
9. Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

Creating and Saving a Route

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

1. Select **User Data** > **Routes** > **New** > **Route Using Chart**.
2. Select the starting location of the route.
3. Follow the onscreen instructions to add a turn.
4. If necessary, repeat step 3 to add more turns.
5. Select the final destination.

Viewing a List of Routes

Select **User Data** > **Routes**.

Editing a Saved Route

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

1. Select **User Data** > **Routes**.
2. Select a route.
3. Select **Edit Route**.

4. Select an option:
   - To change the name, select **Name**, and enter the name.
   - To select a waypoint from the turn list, select **Edit Turns** > **Use Turn List**, and select a waypoint from the list.
   - To select a turn using the chart, select **Edit Turns** > **Route Using Chart**, and select a location on the chart.

Browsing for and Navigating a Saved Route

Before you can browse a list of routes and navigate to one of them, you must create and save at least one route.

1. Select **User Data** > **Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Select an option:
   - To navigate the route from the starting point used when the route was created, select **Forward**.
   - To navigate the route from the destination point used when the route was created, select **Backward**.

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

Browsing for and Navigating Parallel to a Saved Route

Before you can browse a list of routes and navigate to one of them, you must create and save at least one route.

1. Select **User Data** > **Routes**.
2. Select a route.
3. Select **Navigate To**.
4. Select **Offset** to navigate parallel to the route, offset from it by a specific distance.
5. Indicate how to navigate the route:
   - To navigate the route from the starting point used when the route was created, to the left of the original route, select **Forward – Port**.
   - To navigate the route from the starting point used when the route was created, to the right of the original route, select **Forward – Starboard**.
   - To navigate the route from the destination point used when the route was created, to the left of the original route, select **Backward – Port**.
   - To navigate the route from the destination point used when the route was created, to the right of the original route, select **Backward – Starboard**.

   A magenta line appears. In the center of the magenta line is a thinner purple line that represents the corrected course from your present location to the destination. The corrected course is dynamic, and it moves with your boat when you are off course.
6. Review the course indicated by the magenta line.
7. Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.
8. If you are off course, follow the purple line (corrected course) to go to your destination, or steer back to the magenta line (direct course).

Deleting a Saved Route

1. Select **User Data** > **Routes**.
2. Select a route.
3. Select **Delete**.

Deleting All Saved Routes

Select **User Data** > **Manage Data** > **Clear User Data** > **Routes**.

Tracks

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

Showing Tracks

From a chart or a 3D chart view, select **MENU** > **Waypoints & Tracks** > **Tracks** > **On**.

A trailing line on the chart indicates your track.

Setting the Color of the Active Track

1. Select **User Data** > **Tracks** > **Active Track Options** > **Track Color**.
2. Select a track color.

Saving the Active Track

The track currently being recorded is called the active track.

1. Select **User Data** > **Tracks** > **Save Active Track**.
2. Select an option:
   - Select the time the active track began.
   - Select **Entire Log**.

Viewing a List of Saved Tracks

Select **User Data** > **Tracks** > **Saved Tracks**.

Editing a Saved Track

1. Select **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Edit Track**.
4. Select an option:
   - Select **Name**, and enter the new name.
   - Select **Track Color**, and select a color.

Saving a Track as a Route

1. Select **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Edit Track** > **Save Route**.

Browsing for and Navigating a Recorded Track

Before you can browse a list of tracks and navigate to them, you must record and save at least one track (*Tracks*, page 11).

1. Select **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.
3. Select **Follow Track**.
4. Select an option:
   - To navigate the track from the starting point used when the track was created, select **Forward**.
   - To navigate the track from the destination point used when the track was created, select **Backward**.
5. Review the course indicated by the colored line.
6. Follow the line along each leg in the route, steering to avoid land, shallow water, and other obstacles.

Deleting a Saved Track

1. Select **User Data** > **Tracks** > **Saved Tracks**.
2. Select a track.

3 Select **Delete**.

Deleting All Saved Tracks

Select **User Data** > **Manage Data** > **Clear User Data** > **Saved Tracks**.

Retracing the Active Track

The track currently being recorded is called the active track.

1 Select **User Data** > **Tracks** > **Follow Active Track**.
2 Select an option:
   - Select the time the active track began.
   - Select **Entire Log**.
3 Review the course indicated by the colored line.
4 Follow the colored line, steering to avoid land, shallow water, and other obstacles.

Clearing the Active Track

Select **User Data** > **Tracks** > **Clear Active Track**.

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

Managing the Track Log Memory During Recording

1 Select **User Data** > **Tracks** > **Active Track Options**.
2 Select **Record Mode**.
3 Select an option:
   - To record a track log until the track memory is full, select **Fill**.
   - To continuously record a track log, replacing the oldest track data with new data, select **Wrap**.

Configuring the Recording Interval of the Track Log

You can indicate the frequency at which the track plot is recorded. Recording more frequent plots is more accurate but fills the track log faster. The resolution interval is recommended for the most efficient use of memory.

1 Select **User Data** > **Tracks** > **Active Track Options** > **Record Interval** > **Interval**.
2 Select an option:
   - To record the track based on a distance between points, select **Distance** > **Change**, and enter the distance.
   - To record the track based on a time interval, select **Time** > **Change**, and enter the time interval.
   - To record the track plot based on a variance from your course, select **Resolution** > **Change**, and enter the maximum error allowed from the true course before recording a track point.

Deleting All Saved Waypoints, Routes, and Tracks

Select **User Data** > **Manage Data** > **Clear User Data** > **All** > **OK**.

Auto Guidance

⚠ CAUTION

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

NOTE: Auto Guidance is available with premium charts, in some areas.

You can use Auto Guidance to plot the best path to your destination. Auto Guidance uses your chartplotter to scan chart data, such as water depth and known obstacles, to calculate a suggested path. You can adjust the path during navigation.

Setting and Following an Auto Guidance Path

1 Select a destination (*Destinations*, page 9).
2 Select **Navigate To** > **Guide To**.
3 Review the path, indicated by the magenta line.
4 Select **Start Navigation**.
5 Follow the magenta line, steering to avoid land, shallow water, and other obstacles.

   NOTE: When using Auto Guidance, a gray segment within any part of the magenta line indicates that Auto Guidance cannot calculate part of the Auto Guidance line. This is due to the settings for minimum safe water depth and minimum safe obstacle height.

Creating an Auto Guidance Path

1 Select **Navigation** > **Routes & Auto Guidance Paths** > **New** > **Auto Guidance**.
2 Select **SELECT**, and choose a destination point.

Filtering a List of Routes and Auto Guidance Paths

You can filter a list of routes and Auto Guidance paths to quickly find a saved destination.

1 Select **MENU** > **Filter**.
2 Select an option.

Reviewing an Auto Guidance Path

1 From the Navigation chart, select a path.
2 Select an option:
   - To view a hazard and adjust the hazard path, select **Hazard Review**.
   - To change the path name, or to adjust or recalculate the path, select **Edit**.
   - To delete a path, select **Delete**.
   - To navigate the selected path, select **Navigate To**.

Adjusting an Auto Guidance Path

1 From the Navigation chart, follow the on-screen instructions or use the arrow keys to move the destination point to the new location.
2 Select **SELECT** > **Move Point**.
3 Select **BACK** to return to the navigation screen.

Canceling an Auto Guidance Calculation in Progress

From the Navigation chart, select **MENU** > **Cancel**.

TIP: You can select BACK to quickly cancel the calculation.

Setting a Timed Arrival

You can use this feature on a route or an Auto Guidance path to get feedback about when you should arrive at a selected point. This allows you to time your arrival at a location, such as a bridge opening or a race starting line.

1 From the Navigation chart, select **MENU**.
2 If necessary, select **Navigation Options**.
3 Select **Timed Arrival**.

   TIP: You can quickly open the Timed Arrival menu by selecting a point on the path or route.

Adjusting the Distance from Shore

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 are relative, not absolute. To ensure the Auto Guidance line is placed the appropriate distance from shore, you can assess the placement of the Auto Guidance line using one or more familiar destinations that require navigation through a narrow waterway.

1. Dock your vessel or drop the anchor.
2. Select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Normal**.
3. Select a destination that you have navigated to previously.
4. Select **Navigate To** > **Guide To**.
5. Review the placement of the Auto Guidance line, and determine whether the line safely avoids known obstacles and the turns enable efficient travel.
6. Select an option:
   - If the placement of the Auto Guidance line is satisfactory, select **MENU** > **Stop Navigation**, and proceed to step 10.
   - If the Auto Guidance line is too close to known obstacles, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Far**.
   - If the turns in the Auto Guidance line are too wide, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Near**.
7. If you selected **Near** or **Far** in step 6, review the placement of the Auto Guidance line, and determine whether the line safely avoids known obstacles and the turns enable efficient travel.

   Auto Guidance maintains a wide clearance from obstacles in open water, even if you set the Shoreline Distance setting to Near or Nearest. As a result, the chartplotter may not reposition the Auto Guidance line, unless the destination selected requires navigation through a narrow waterway.
8. Select an option:
   - If the placement of the Auto Guidance line is satisfactory, select **MENU** > **Stop Navigation**, and proceed to step 10.
   - If the Auto Guidance line is too close to known obstacles, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Farthest**.
   - If the turns in the Auto Guidance line are too wide, select **Settings** > **Navigation** > **Auto Guidance** > **Shoreline Distance** > **Nearest**.
9. If you selected **Nearest** or **Farthest** in step 8, review the placement of the **Auto Guidance** line, and determine whether the line safely avoids known obstacles and the turns enable efficient travel.

   Auto Guidance maintains a wide clearance from obstacles in open water, even if you set the Shoreline Distance setting to Near or Nearest. As a result, the chartplotter may not reposition the Auto Guidance line, unless the destination selected requires navigation through a narrow waterway.
10. Repeat steps 3 through 9 at least once more, using a different destination each time, until you are familiar with the functionality of the Shoreline Distance setting.

Auto Guidance Line Configurations

⚠ CAUTION

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

NOTE: Auto Guidance is available with premium charts, in some areas.

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

Safe Depth: Sets the minimum depth (chart depth datum) the chartplotter uses when calculating an Auto Guidance line.

NOTE: The minimum safe depth for the premium charts is 3 feet. If you enter a Safe Depth value of less than 3 feet, the charts only use depths of 3 feet for Auto Guidance route calculations.

Safe Height: Sets the minimum height (chart height datum) of a bridge that your boat can safely travel under.

Shoreline Distance: Sets 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 this setting are relative, not absolute. To ensure that the Auto Guidance line is placed the 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 (*Adjusting the Distance from Shore*, page 12).

Boundaries

Boundaries allow you to avoid or remain in designated areas in a body of water. You can set an alarm to alert you when you enter or exit a boundary.

You can create boundary areas, lines, and circles using the map. You can also create boundary areas by converting saved tracks or routes into boundary lines. You can create a boundary area using waypoints by creating a route from the waypoints, and converting the route into a boundary line.

You can select a boundary to act as the active boundary. Data about the active boundary appears in the data fields on the chart.

Creating a Boundary

1. Select **User Data** > **Boundaries** > **New Boundary**.
2. Select a boundary shape.
3. Follow the on-screen instructions.

Boundary Display Settings

Select **User Data** > **Boundaries** > **Display Options**.

Distance/Bearing: Allows you to hide or display the bearing and distance to your destination for the active boundary.

Chart Display: Allows you to hide or display boundaries on the chart.

Color: Sets the color of boundaries on the chart.

Converting a Route to a Boundary

Before you can convert a route to a boundary, you must create and save at least one route (*Creating and Saving a Route*, page 10).

1. Select **User Data** > **Routes**.
2. Select a route.
3. Select **Edit Route** > **Save as Boundary**.

Converting a Track to a Boundary

Before you can convert a track to a boundary, you must record and save at least one track (*Saving the Active Track*, page 11).

1. Select **User Data** > **Tracks**.
2. Select a track.
3. Select **Edit Track** > **Save as Boundary**.

Editing a Boundary

1. Select **User Data** > **Boundaries**.
2. Select a boundary.
3. Select **Edit Boundary**.
4. Select an option:
   - To edit the appearance of the boundary on the chart, select **Display Options**.

- To change the boundary lines or name, select **Edit Boundary**.
- To edit the boundary alarm, select **Alarm**.

Setting a Boundary Alarm

Boundary alarms alert you when you are within a specified distance of a set boundary.

1. Select **User Data** > **Boundaries**.
2. Select a boundary.
3. Select **Alarm** > **On**.
4. Enter a distance.
5. Select an option.
   - To set an alarm to sound when your boat is a specified distance from the boundary of an area that you want to stay within, select **Exiting**.
   - To set an alarm to sound when your boat is a specified distance from the boundary of an area that you want to avoid, select **Entering**.

Deleting a Boundary

1. Select **User Data** > **Boundaries**.
2. Select a boundary.
3. Select **Edit Boundary** > **Delete**.

Autopilot

⚠ WARNING

You can use the autopilot feature only at a station installed next to a helm, throttle, and helm control device.

You are responsible for the safe and prudent operation of your vessel. The autopilot is a tool that enhances your capability to operate your boat. It does not relieve you of the responsibility of safely operating your boat. Avoid navigational hazards and never leave the helm unattended.

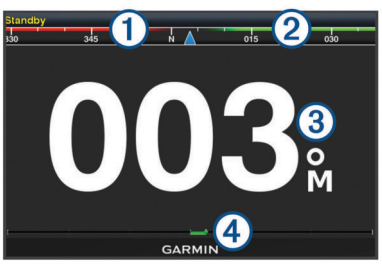
Always be prepared to promptly regain manual control of your boat.

Learn to operate the autopilot on calm and hazard-free open water.

Use caution when operating the autopilot near hazards in the water, such as docks, pilings, and other boats.

The autopilot system continuously adjusts the steering of your boat to maintain a constant heading (heading hold). The system also allows manual steering and several modes of automatic-steering functions and patterns.

Autopilot Screen



①	Actual heading
②	Intended heading (heading the autopilot is steering toward)
③	Actual heading (when in standby mode) Intended heading (when engaged)
④	Rudder position indicator (This functionality is available only when a rudder sensor is connected.)

Adjusting the Step Steering Increment

1. From the Autopilot screen, select **MENU** > **Autopilot Setup** > **Step Turn Size**.
2. Select an increment.

Setting the Power Saver

You can adjust the level of rudder activity.

1. From the autopilot screen, select **MENU** > **Autopilot Setup** > **Power Mode Setup** > **Power Saver**.
2. Select a percentage.

   Selecting a higher percentage reduces rudder activity and heading performance. The higher the percentage, the more the course deviates before the autopilot corrects it.

   TIP: In choppy conditions at low speeds, increasing the Power Saver percentage reduces rudder activity.

Steering Patterns

⚠ WARNING

You are responsible for the safe operation of your boat. Do not begin a pattern until you are certain that the water is clear of obstacles.

The autopilot can steer the boat in preset patterns for fishing, and it can also perform other specialty maneuvers such as U-turns and Williamson turns.

Following the U-Turn Pattern

You can use the u-turn pattern to turn the boat around 180 degrees and maintain the new heading.

1. From the autopilot screen, select **MENU** > **Pattern Steering** > **U-Turn**.
2. Select **Engage Port** or **Engage Starboard**.

Setting Up and Following the Circles Pattern

You can use the circles pattern to steer the boat in a continuous circle, in a specified direction, and at a specified time interval.

1. From the autopilot screen, select **MENU** > **Pattern Steering** > **Circles**.
2. If necessary, select **Time**, and select a time for the autopilot to steer one complete circle.
3. Select **Engage Port** or **Engage Starboard**.

Setting Up and Following the Zigzag Pattern

You can use the zigzag pattern to steer the boat from port to starboard and back, over a specified time and angle, across your present heading.

1. From the autopilot screen, select **MENU** > **Pattern Steering** > **Zigzag**.
2. If necessary, select **Amplitude**, and select a degree.
3. If necessary, select **Period**, and select a length of time.
4. Select **Engage Zigzag**.

Following the Williamson Turn Pattern

You can use the Williamson turn pattern to steer the boat around with the intent of running alongside the location where the Williamson turn pattern was initiated. The Williamson turn pattern can be used in man overboard situations.

1. From the autopilot screen, select **MENU** > **Pattern Steering** > **Williamson Turn**.
2. Select **Engage Port** or **Engage Starboard**.

Combinations

The Combination screen shows a combination of different screens at the same time. The number of options available on the Combination screen depends on the optional devices you

have connected to your chartplotter and whether you are using premium maps.

Selecting a Combination

1. Select **Combinations**.
2. Select a combination.

Customizing a Combination Screen

Not all options are available on all chartplotter models.

1. Select **Combinations**.
2. Select a combination.
3. Select **MENU** > **Configure Combination**.
4. Select an option:
   - To change the name, select **Name**, and enter a new name.
   - To change the number of windows shown in the combination screen, select **Functions**, and select the new number.
   - To change the split orientation, select **Split**.
   - To customize the numbers shown on the screen, select **Overlay Numbers**.
   - To change the data shown in the combination, select the screen to change, and select the new data.
   - To resize the windows, drag the arrows.

Adding a Custom Combination Screen

You can create a custom combination screen to suit your needs.

1. Select **Combinations** > **MENU** > **Add**.
2. Select an option:
   - To change the name, select **Name**, enter a new name, and select **Done**.
   - To change the number of functions shown, select **Functions**, and select a number.
   - To change the function of the portion of the screen, select the area to change, and select a function from the list on the right.
   - To change the vertical or horizontal split orientation of a multi-function display, select **Split**, and select an option.
   - To change how data appears on the page, select **Overlay Numbers**, and select an option.
   - To change the type of data shown, select **Overlay Numbers**, select a data field, and select the new data type.

Sonar

Sonar Views

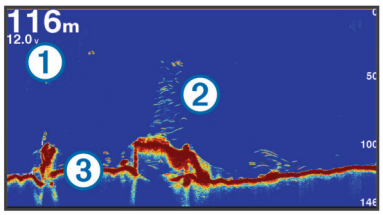
The sonar views available vary depending on the type of transducer and optional sounder module connected to the chartplotter. For example, you can view the Split Frequency view only if you have a dual-frequency transducer connected.

There are four basic styles of sonar views available: a full-screen view, a split-screen view that combines two or more views, a split-zoom view, and a split-frequency view that displays two different frequencies. You can customize the settings for each view in the screen. For example, if you are viewing the split-frequency view, you can separately adjust the gain for each frequency.

Traditional Sonar View

There are several full-screen views available, depending on the equipment connected.

The full-screen Traditional sonar view show a large image of the sonar readings from a transducer. The range scale along the right side of the screen shows the depth of detected objects as the screen scrolls from the right to the left.



①	Depth information
②	Suspended targets or fish
③	Bottom of the body of water

DownVü Sonar View

NOTE: Not all models support DownVü sonar technology and transducers.

NOTE: To receive DownVü scanning sonar, you need a compatible chartplotter or fishfinder and a compatible transducer.

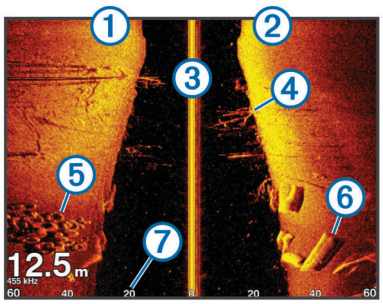
DownVü high-frequency sonar provides a clearer picture below the boat, providing a more detailed representation of structures the boat is passing over.

Traditional transducers emit a conical beam. The DownVü scanning sonar technology emits a narrow beam, similar to the shape of the beam in a copying machine. This beam provides a clearer, picture-like image of what is beneath the boat.

SideVü Sonar View

NOTE: Not all models support SideVü sonar and scanning transducers.

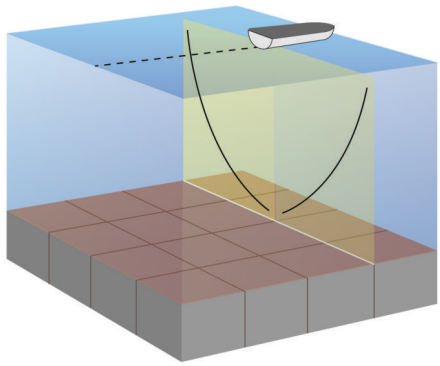
SideVü scanning sonar technology shows you a picture of what lies to the sides of the boat. You can use this as a search tool to find structures and fish.



①	Left side of the boat
②	Right side of the boat
③	The transducer on your vessel
④	Trees
⑤	Old tires
⑥	Logs
⑦	Distance from the side of the boat

SideVü/DownVü Scanning Technology

Instead of a more common conical beam, the SideVü/DownVü transducer uses a flat beam to scan the water and ground to the sides of your boat.



Split-Screen Sonar Views

The split-screen sonar views enable you to view different combinations of sonar data simultaneously. For example, you can view traditional sonar and DownVü sonar views in one screen. You can edit the layout of a split-screen sonar view to resize the window and rearrange the data.

The scroll rates of the traditional and DownVü sonar views are synchronized to make the split-screen views easier to read.

Split-Zoom Sonar View

The split-zoom sonar view shows a full-view graph of sonar readings, and a magnified portion of that graph, on the same screen.

Split-Frequency Sonar View

In the split-frequency sonar view, one side of the screen shows a full-view graph of high frequency sonar data, and the other side of the screen shows a full-view graph of lower frequency sonar data.

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

Selecting the Transducer Type

Before you can select the transducer type, you must know what kind of transducer you have.

If you are connecting a transducer that was not included with the chartplotter, you may need to set the transducer type to make the sonar function properly. If the device automatically detected your transducer, this option does not appear.

1. From a sonar view, select **MENU** > **Sonar Setup** > **Installation** > **Transducer Type**.
2. Select an option:
   - If you have a 200/77 kHz, dual-beam transducer, select **Dual Beam (200/77 kHz)**.
   - If you have a 200/50 kHz, dual-frequency transducer, select **Dual Frequency (200/50 kHz)**.
   - If you have another type of transducer, select it from the list.

Calibrating the Compass

Before you can calibrate the compass, the transducer must be installed far enough away from the trolling motor to avoid magnetic interference, and deployed in the water. Calibration must be of sufficient quality to enable the internal compass.

NOTE: Compass calibration is available only for transducers with an internal compass.

You can begin turning your boat before calibrating, but you must fully rotate your boat 1.5 times during calibration.

1. From the LiveVü Forward sonar page, select **MENU** > **Sonar Setup** > **Installation**.
2. If necessary, select **Use AHRS**.
3. Select **Calibrate Compass**.
4. Follow the on-screen instructions.

Transducer Installation Settings

From a sonar view, select **MENU** > **Sonar Setup** > **Installation**.

Transmit Rate: Sets the length of time between sonar pings. Increasing the transmit rate increases the scroll speed, but it may also increase self-interference.

Reducing the transmit rate increases the spacing between transmit pulses and can resolve self-interference.

Transmit Power: Reduces transducer ringing near the surface. A lower transmit power value reduces transducer ringing, but can also reduce the strength of the returns.

Filter Width: Defines the edges of the target. A shorter filter more clearly defines the edges of the targets but may allow more noise. A longer filter creates softer target edges and may also reduce noise.

Transducer Diagnostics: Shows details about the transducer.

Flip Left/Right: Switches the SideVü view orientation from left to right.

Install Depth: Sets the depth below the water line where the Panoptix transducer is mounted. Entering the actual depth at which the transducer is mounted results in a more accurate visual presentation of what is in the water.

Flipped: Sets the orientation of the Panoptix sonar view when the down view transducer is installed with the cables pointing toward the port side of the boat.

Beam Width: Sets the width of the Panoptix transducer beam.

Narrow beam widths are better for high-speed operation and rough sea conditions. They also can improve bottom definition and thermocline definition.

Wider beam widths generate larger arches for fish target returns, making them ideal for locating fish. Wider beam widths perform better in deep water. They can generate more surface noise and reduce bottom signal continuity during rough sea conditions.

Use AHRS: Enables the internal attitude heading and reference system (AHRS) sensors to detect the installation angle of the Panoptix transducer automatically. When this setting is turned off, you can enter the specific installation angle for the transducer using the Pitch Angle setting. Many forward view transducers are installed at a 45-degree angle and down view transducers are installed at a zero-degree angle.

Creating a Waypoint on the Sonar Screen Using the Device Keys

1. From a sonar view, use the arrow keys to select a location to save.
2. Select **SELECT**.
3. If necessary, edit the waypoint information.

Pausing the Sonar Display

From a sonar view, select **MENU** > **Pause Sonar**.

Viewing Sonar History

You can scroll the sonar display to view historical sonar data.

NOTE: Not all transducers save historical sonar data.

1. From a sonar view, select **MENU** > **Pause Sonar**.
2. Use the arrow keys.

Customizing the Overlay Numbers

You can customize the data shown on the sonar screen of some chartplotter models.

NOTE: Not all options are available on all models.

1. From a sonar view, select **MENU** > **Sonar Setup** > **Overlay Numbers**.
2. If necessary, select the numbers to customize.
3. Select the toggle to show or hide each data item.
4. Select **BACK** to customize more data.

   NOTE: You can also show or hide the compass tape and navigation inset.
5. Select **Done**.

Adjusting the Level of Detail

You can control the level of detail and noise shown on the sonar screen either by adjusting the gain for traditional transducers or by adjusting the brightness for DownVü transducers.

If you want to see the highest intensity signal returns on the screen, you can lower the gain or brightness to remove lower intensity returns and noise. If you want to see all return information, you can increase the gain or brightness to see more information on the screen. This also increases noise, and can make it more difficult to recognize actual returns.

1. From a sonar view, select **MENU**.
2. Select **Gain** or **Brightness**.
3. Select an option:
   - To increase or decrease the gain or brightness manually, select **Up** or **Down**.
   - To allow the chartplotter to adjust the gain or brightness automatically, select an automatic option.

Adjusting the Color Intensity

You can adjust the intensity of colors and highlight areas of interest on the sonar screen by adjusting the color gain for traditional transducers or the contrast for DownVü and SideVü/DownVü transducers. This setting works best after you have adjusted the level of detail shown on the screen using the gain or brightness settings.

If you want to highlight smaller fish targets or create a higher intensity display of a target, you can increase the color gain or contrast setting. This causes a loss in the differentiation of the high intensity returns at the bottom. If you want to reduce the intensity of the return, you can reduce the color gain or contrast.

1. From a sonar view, select **MENU**.
2. Select an option:
   - While in the DownVü or SideVü sonar view, select **Contrast**.
   - While in a Panoptix LiveVü sonar view, select **Color Gain**.
   - While in another sonar view, select **Sonar Setup** > **Advanced** > **Color Gain**.
3. Select an option:
   - To increase or decrease the color intensity manually, select **Up** or **Down**.
   - To use the default setting, select **Default**.

Adjusting the Range of the Depth or Width Scale

You can adjust the range of the depth scale traditional and DownVü sonar views and the range of the width scale for the SideVü sonar view.

Allowing the device to adjust the range automatically keeps the bottom within the lower or outer third of the sonar screen, and can be useful for tracking a bottom that has minimal or moderate terrain changes.

Manually adjusting the range enables you to view a specified range, which can be useful for tracking a bottom that has large terrain changes, such as a drop-offs or cliffs. The bottom can appear on the screen as long as it appears within the range you have set.

1. From a sonar view, select **MENU** > **Range**.
2. Select an option:
   - To allow the chartplotter to adjust the range automatically, select **Auto**.
   - To increase or decrease the range manually, select **Up** or **Down**.

   TIP: From the sonar screen, you can select + or − to manually adjust the range.

   TIP: When viewing multiple sonar screens, you can select SELECT to choose the active screen.

Setting the Zoom Level on the Sonar Screen

1. From a sonar view, select **MENU** > **Zoom**.
2. Select an option:
   - To zoom in on the sonar data from the bottom depth, select **Bottom Lock**.
   - To set the depth range of the magnified area manually, select **Manual**, select **View Up** or **View Down** to set the depth range of the magnified area, and select **Zoom In** or **Zoom Out** to increase or decrease the magnification of the magnified area.
   - To set the depth and zoom automatically, select **Auto**.
   - To cancel the zoom, select **No Zoom**.

Setting the Scroll Speed

You can set the rate at which the sonar image moves across the screen. A higher scroll speed shows more detail, especially while moving or trolling. A lower scroll speed displays sonar information on the screen longer. Setting the scroll speed on one sonar view applies to all the sonar views.

1. From a sonar view, select **MENU** > **Sonar Setup** > **Scroll Speed**.
2. Select an option:
   - To adjust the scroll speed automatically using speed-over-ground or water speed data, select **Auto**.

     The Auto setting selects a scroll rate to match the boat speed, so targets in the water are drawn with the correct aspect ratio and appear less distorted. When viewing DownVü or SideVü sonar views, it is recommend to use the Auto setting.
   - To use a very fast scroll speed, select **Ultrascroll®**.

     The Ultrascroll option quickly scrolls new sonar data, but with a reduced image quality. For most situations, the Fast option provides a good balance between a quickly scrolling image and targets that are less distorted.

Sonar Frequencies

NOTE: The frequencies available depend on the transducer being used.

Adjusting the frequency helps adapt the sonar for your particular goals and the present depth of the water.

Higher frequencies use narrow beam widths, and are better for high-speed operation and rough sea conditions. Bottom definition and thermocline definition can be better when using a higher frequency.

Lower frequencies use wider beam widths, which cover a larger area and can allow you to see more targets, but which also could generate more surface noise and reduce bottom signal continuity during rough sea conditions. Wider beam widths generate larger arches for fish target returns, making them ideal for locating fish. Wider beam widths also perform better in deep water, because the lower frequency has better deep water

penetration. They can be used to search for structures such as brush piles.

A CHIRP frequency has a better resolution than traditional sonar frequencies, and displays some smaller targets more clearly. When the CHIRP frequency is set to high, the screen displays reduced thermocline. When the CHIRP frequency is set to low, larger targets are more visible.

Viewing two frequencies at the same time using the split frequency view allows you to see deeper with the lower frequency return and to see more detail with the higher frequency return.

Selecting Frequencies

NOTE: You cannot adjust the frequency for all sonar views and transducers.

You can indicate which frequencies appear on the sonar screen.

1. From a sonar view, select **MENU** > **Frequency**.
2. Select a frequency suited to your needs and water depth.

   For more information on frequencies, see *Sonar Frequencies*, page 17.

Creating a Frequency Preset

NOTE: Not available with all transducers.

You can create a preset to save a specific sonar frequency, which allows you to change frequencies quickly.

1. From a sonar view, select **MENU** > **Frequency**.
2. Select **Add**.
3. Enter a frequency.

Turning On the A-Scope

NOTE: This feature is not available in all sonar views.

The a-scope is a vertical flasher along the right side of the full-screen sonar view. This feature expands the most recently received sonar data so that it is easier to see. It can also be helpful for detecting fish that are close to the bottom.

From a sonar view, select **MENU** > **Sonar Setup** > **Appearance** > **A-Scope**.

Sonar Setup

Sonar Settings

NOTE: Not all options and settings apply to all models, sounder modules, and transducers.

From a sonar view, select **MENU** > **Sonar Setup**.

Depth Line: Shows a quick-reference depth line.

Scroll Speed: Sets the rate at which the sonar scrolls from right to left.

In shallow water you might want to slow the scroll speed to extend the length of time the information is displayed on screen. In deeper water you can increase the scroll speed.

Range Lines: Shows the vertical lines indicating the distance to the right and left of the boat. This setting is available for SideVü sonar view.

Color Scheme: Sets the color scheme of the sonar view. This setting might be available in the Appearance menu.

The high contrast color schemes provide darker color assignments to the low intensity returns. The low contrast color schemes provide color assignments to the low intensity returns that are similar to the background color.

Appearance: See *Sonar Appearance Settings*, page 18.

Overlay Numbers: Sets the data shown on the sonar screen.

Advanced: See *Advanced Sonar Settings*, page 18.

Installation: Restores the default sonar settings.

Sonar Appearance Settings

From a sonar view, select **MENU** > **Sonar Setup** > **Appearance**.

Color Scheme: Sets the color scheme.

Edge: Highlights the strongest signal from the bottom to help define the hardness or softness of the signal.

A-Scope: Displays a vertical flasher along the right side of the screen that shows instantaneously the range to targets along a scale.

Pic. Advance: Allows the sonar picture to advance faster by drawing more than one column of data on the screen for each column of sounder data received. This is especially helpful when you are using the sounder in deep water, because the sonar signal takes longer to travel to the water bottom and back to the transducer.

The 1/1 setting draws one column of information on the screen per sounder return. The 2/1 setting draws two columns of information on the screen per sounder return, and so on for the 4/1 and 8/1 settings.

Fish Symbols: Sets how the sonar interprets suspended targets.

Advanced Sonar Settings

From a sonar view, select **MENU** > **Sonar Setup** > **Advanced**.

Interference: Adjusts the sensitivity to reduce the effects of interference from nearby sources of noise.

The lowest interference setting that achieves the desired improvement should be used to remove interference from the screen. Correcting installation issues that cause noise is the best way to eliminate interference.

Surface Noise: Hides surface noise to help reduce clutter. Wider beam widths (lower frequencies) can show more targets, but can generate more surface noise.

Color Gain: See *Adjusting the Level of Detail*, page 17.

TVG: Adjusts the appearance of returns to compensate for weakened sonar signals in deeper water, and reduces the appearance of noise near the surface. When the value of this setting is increased, the colors associated with low-level noise and fish targets appear more consistent through various water depths. This setting also reduces the noise near the surface of the water.

Transducer Installation Settings

From a sonar view, select **MENU** > **Sonar Setup** > **Installation**.

Restore Sonar Defaults: Restores the factory default settings for the sonar view.

Transducer Type: Allows you to select the type of transducer that is connected to the device.

Shift: Allows you to set the depth range on which the sonar is focused. This enables you to zoom in to an area within the focused depth.

Flip Left/Right: Changes the orientation of the SideVü sonar view when the transducer is installed backward.

Flipped: Sets the orientation of the Panoptix sonar view when the transducer is installed with the cables pointing toward the port side of the boat.

Beam Width: Sets the width of the Panoptix transducer beam.

Narrow beam widths are better for high-speed operation and rough sea conditions. They also can improve bottom definition and thermocline definition.

Wider beam widths generate larger arches for fish target returns, making them ideal for locating fish. Wider beam widths also perform better in deep water, because the lower

frequency has better deep water penetration. Wider beam widths can also generate more surface noise and reduce bottom signal continuity during rough sea conditions.

Use AHRS: Allows the internal attitude heading and reference system (AHRS) sensors to detect the installation angle of the Panoptix transducer. When this setting is turned off, it is assumed the transducer is installed at a 45-degree angle.

Sonar Alarm Settings

NOTE: Some settings require external accessories.

Select **Settings** > **Alarms** > **Sonar**.

Shallow Water: Sets an alarm to sound when the depth is less than the specified value.

Deep Water: Sets an alarm to sound when the depth is greater than the specified value.

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

Fish: Sets an alarm to sound when the device detects a suspended target.

- sets the alarm to sound when fish of all sizes are detected.
- sets the alarm to sound only when medium or large fish are detected.
- sets the alarm to sound only when large fish are detected.

Sonar Recordings

Recording the Sonar Display

NOTE: Not all models support sonar recording.

1. Insert a memory card into the card slot.
2. From a sonar view, select **MENU** > **Sonar Setup** > **Sonar Recording** > **Record Sonar**.

   15 minutes of sonar recording uses approximately 200 MB of space of the inserted memory card. You can record sonar until the card reaches capacity.

Stopping the Sonar Recording

Before you can stop recording sonar, you must begin recording it (*Recording the Sonar Display*, page 19).

From a sonar view, select **MENU** > **Sonar Setup** > **Sonar Recording** > **Stop Recording**.

Deleting a Sonar Recording

1. Insert a memory card into the card slot.
2. From a sonar view, select **MENU** > **Sonar Setup** > **Sonar Recordings** > **View Recordings**.
3. Select a recording.
4. Select **Delete**.

Playing Sonar Recordings

Before you can play back the sonar recordings, you must download and install the HomePort™ application and record sonar data onto a memory card.

1. Remove the memory card from the device.
2. Insert the memory card into a card reader attached to a computer.
3. Open the HomePort application.
4. Select a sonar recording from your device list.
5. Right-click the sonar recording in the lower pane.
6. Select **Playback**.

Gauges and Almanac Data

Gauges provide various information about the trip, environment, and wind. Some data requires connection to compatible sensors.

The chartplotters also provide almanac information about tides, currents, and the sun and moon, such as rise and set times.

Viewing the Compass

You can view information about your bearing, heading, and route using the compass.

Select **Navigation Info** > **Compass**.

Viewing Trip Gauges

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

Select **Navigation Info** > **Trip**.

Resetting Trip Gauges

1. Select **Navigation Info** > **Trip & Graphs** > **Trip**.
2. Select an option:
   - To set all the readings for the present trip to zero, select **Reset Trip**.
   - To set the maximum speed reading to zero, select **Reset Maximum Speed**.
   - To set the odometer reading to zero, select **Reset Odometer**.
   - To set all the readings to zero, select **Reset All**.

Tide, Current, and Celestial Information

Tide Station Information

You can view information about a tide station for a specific date and time, including the tide height, and when the next high and low tides will occur. By default, the chartplotter shows tide information for the most recently viewed tide station and for the present date and time.

Select **Navigation Info** > **Tides & Currents** > **Tides**.

Current Station Information

NOTE: Current station information is available with certain detailed maps.

You can view information about a current station for a specific date and time, including the current speed and level of the current. By default, the chartplotter shows current information for the most recently viewed current station and for the present date and time.

Select **Navigation Info** > **Tides & Currents** > **Currents**.

Celestial Information

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

Select **Navigation Info** > **Tides & Currents** > **Celestial**.

Viewing Tide Station, Current Station, or Celestial Information for a Different Date

1. Select **Navigation Info** > **Tides & Currents**.
2. Select **Tides**, **Currents**, or **Celestial**.
3. Select an option.
   - To view information for a different date, select **Change Date** > **Manual**, and enter a date.
   - To view information for today, select **Change Date** > **Current**.

- If available, to view information for the day after the date shown, select **Next Day**.
- If available, to view information for the day before the date shown, select **Previous Day**.

Viewing Information for a Different Tide or Current Station

1. Select **Navigation Info** > **Tides & Currents**.
2. Select **Tides** or **Currents**.
3. Select **Nearby Stations**.
4. Select a station.

Digital Selective Calling

Chartplotter and NMEA® 0183 VHF Radio Functionality

When your chartplotter is connected to a NMEA 0183 VHF radio, these features are enabled.

- The chartplotter can transfer your GPS position to your radio. If your radio is capable, GPS position information is transmitted with DSC calls.
- The chartplotter can receive digital selective calling (DSC) distress and position information from the radio.
- The chartplotter can track the positions of vessels sending position reports.

Turning On DSC

Select **Settings** > **Other Vessels** > **DSC**.

DSC List

The DSC list is a log of the most recent DSC calls and other DSC contacts you have entered. The DSC list can contain up to 100 entries. The DSC list shows the most recent call from a boat. If a second call is received from the same boat, it replaces the first call in the call list.

Viewing the DSC List

Before you can view the DSC list, the chartplotter must be connected to a VHF radio that supports DSC.

Select **Navigation Info** > **Other Vessels** > **DSC List**.

Adding a DSC Contact

You can add a vessel to your DSC list. You can make calls to a DSC contact from the chartplotter.

1. Select **Navigation Info** > **Other Vessels** > **DSC List** > **Add Contact**.
2. Enter the Maritime Mobile Service Identity (MMSI) of the vessel.
3. Enter the name of the vessel.

Incoming Distress Calls

If your compatible chartplotter and VHF radio are connected using NMEA 0183, 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.

▧ designates a distress call in the DSC list and marks the position of the vessel on the Navigation chart at the time of the DSC distress call.

Navigating to a Vessel in Distress

▧ designates a distress call in the DSC list and marks the position of a vessel on the Navigation chart at the time of the DSC distress call.

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Navigate To**.
4. Select **Go To** or **Route To**.

Position Tracking

When you connect the chartplotter to a VHF radio using NMEA 0183, you can track vessels that send position reports.

This feature is also available with NMEA 2000, when the vessel sends the correct PGN data (PGN 129808; DSC Call Information).

Every position report call received is logged in the DSC list (*DSC List*, page 20).

Viewing a Position Report

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select an option:
   - To switch to position report details, select ❯.
   - To switch to a Navigation chart marking the location, select ❮.
   - To switch to a Navigation chart marking the location, select **Next Page**.
   - To view the position report details, select **Previous Page**.

Navigating to a Tracked Vessel

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Navigate To**.
4. Select **Go To** or **Route To**.

Creating a Waypoint at the Position of a Tracked Vessel

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **New Waypoint**.

Editing Information in a Position Report

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Edit**.
   - To enter the name of the vessel, select **Name**.
   - To select a new symbol, select **Symbol**, if available.
   - To enter a comment, select **Comment**.
   - To show a trail line for the vessel if your radio is tracking the position of the vessel, select **Trail**.
   - To select a color for the trail line, select **Trail Line**.

Deleting a Position-Report Call

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a position-report call.
3. Select **Edit** > **Clear Report**.

Viewing Vessel Trails on the Chart

You can view trails for all tracked vessels on some chart views. By default, a black line indicates the path of the vessel, a black dot indicates each previously reported position of a tracked vessel, and a blue flag indicates the last reported position of the vessel.

1. From a chart or 3D chart view, select **MENU** > **Other Vessels** > **DSC Trails**.
2. Select the number of hours to show tracked vessels on the chart.

   For example, if you select 4 Hours, all trail points that are less than four hours old appear for all tracked vessels.

Individual Routine Calls

When you connect the chartplotter to a Garmin VHF radio, you can use the chartplotter interface to set up an individual routine call.

When setting up an individual routine call from your chartplotter, you can select the DSC channel on which you want to communicate. The radio transmits this request with your call.

Selecting a DSC Channel

NOTE: The selection of a DSC channel is limited to those channels that are available in all frequency bands. The default channel is 72. If you select a different channel, the chartplotter uses that channel for subsequent calls until you call using another channel.

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a vessel or a station to call.
3. Select **Call with Radio** > **Channel**.
4. Select an available channel.

Making an Individual Routine Call

NOTE: When initiating a call from the chartplotter, if the radio does not have an MMSI number programmed, the radio will not receive call information.

1. Select **Navigation Info** > **Other Vessels** > **DSC List**.
2. Select a vessel or a station to call.
3. Select **Call with Radio**.
4. If necessary, select **Channel**, and select a new channel.
5. Select **Send**.

   The chartplotter sends information about the call to the radio.
6. On your Garmin VHF radio, select **Call**.

Making an Individual Routine Call to an AIS Target

1. From a chart or 3D chart view, select an AIS target.
2. Select **AIS Vessel** > **Call with Radio**.
3. If necessary, select **Channel**, and select a new channel.
4. Select **Send**.

   The chartplotter sends information about the call to the radio.
5. On your Garmin VHF radio, select **Call**.

Chartplotter Data Management

Copying Waypoints, Routes, and Tracks from HomePort to a Chartplotter

Before you can copy data to the chartplotter, you must have the latest version of the HomePort software program loaded on your computer and a memory card installed in the chartplotter.

Copy the data from HomePort to the prepared memory card.

For more information, see the HomePort help file.

Copying Data from a Memory Card

1. Insert a memory card into the card slot.
2. Select **User Data** > **Manage Data** > **Data Transfer**.
3. If necessary, select the memory card to copy data to.
4. Select an option:
   - To transfer data from the memory card to the chartplotter and combine it with existing user data, select **Merge from Card**.
   - To transfer data from the memory card to the chartplotter and overwrite existing user data, select **Replace from Card**.
5. Select the file name.

Copying Waypoints, Routes, and Tracks to a Memory Card

1. Insert a memory card into the card slot.
2. Select **User Data** > **Manage Data** > **Data Transfer** > **Save to Card**.
3. If necessary, select the memory card to copy data to.
4. Select an option:
   - To create a new file, select **Add New File**, and enter a name. The file name is saved with an .adm extension.
   - To add the information to an existing file, select the file from the list.

Selecting a File Type for Third-Party Waypoints and Routes

You can import and export waypoints and routes from third-party devices.

1. Select **Navigation Info** > **User Data** > **Data Transfer** > **File Type**.
2. Select **GPX**.

To transfer data with Garmin devices again, select the ADM file type.

Sharing Waypoints and Routes Across Devices

Before you can share waypoints and routes, you must connect the devices using a data sharing cable. The data sharing cable is an optional accessory you can purchase.

You can share waypoint and route data between two compatible chartplotters installed on your boat. You must turn on user data sharing for both devices to share data.

Select **User Data** > **User Data Sharing** > **On** on both devices.

Copying Built-In Maps to a Memory Card

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

1. Insert a memory card into the card slot.
2. Select **User Data** > **Manage Data** > **Data Transfer**.
3. Select **Copy Built-In Map**.

Backing Up Data to a Computer

1. Insert a memory card into the card slot.
2. Select **User Data** > **Manage Data** > **Data Transfer** > **Save to Card**.
3. Select a file name from the list, or select **Add New File**.
4. Select **Save to Card**.

   The file name is saved with an .adm extension.
5. Remove the memory card, and insert it into a card reader attached to a computer.
6. Open the Garmin\UserData folder on the memory card.
7. Copy the backup file on the card and paste it to any location on the computer.

Restoring Backup Data to a Chartplotter

1. Insert a memory card into a card reader that is attached to the computer.
2. Copy a backup file from the computer to the memory card, into a folder named Garmin\UserData.
3. Insert a memory card into the card slot.
4. Select **User Data** > **Manage Data** > **Data Transfer** > **Replace from Card**.

Saving System Information to a Memory Card

You can save system information to a memory card as a troubleshooting tool. A product support representative may ask you to use this information to retrieve data about the network.

1. Insert a memory card into the card slot.
2. Select **Settings** > **System** > **System Information** > **Garmin Devices** > **Save to Card**.
3. If necessary, select the memory card to save system information to.
4. Remove the memory card.

Device Configuration

Turning On the Chartplotter Automatically

You can set the chartplotter to turn on automatically when the power is applied. Otherwise, you must turn on the chartplotter by pressing ⏻.

Select **Settings** > **System** > **Auto Power**.

NOTE: When Auto Power is On, and the chartplotter is turned off using ⏻, and power is removed and reapplied within less than two minutes, you may need to press ⏻ to restart the chartplotter.

System Settings

Select **Settings** > **System**.

Display: Adjusts the backlight brightness and color scheme.

Beeper: Turns on and off the tone that sounds for alarms and selections.

GPS: Provides information about the GPS satellite settings and fix.

Auto Power: Turns on the device automatically when power is applied (*Turning On the Chartplotter Automatically*, page 22).

Language: Sets the on-screen text language.

Speed Sources: Sets the source of the speed data used to calculate true wind speed or fuel economy. Water speed is the speed reading from a water-speed sensor, and GPS speed is calculated from your GPS position.

System Information: Provides information about the device and the software version.

Simulator: Turns on the simulator and allows you to set the speed and simulated location.

Display Settings

Not all options are available on all models.

Select **Settings** > **System** > **Display**.

Backlight: Sets the backlight level.

Color Mode: Sets the device to display day or night colors.

Screenshot Capture: Allows the device to save images of the screen.

GPS Settings

Select **Settings** > **System** > **GPS**.

Skyview: Shows the relative position of GPS satellites in the sky.

WAAS/EGNOS: Turns on or off WAAS (in North America) or EGNOS (in Europe), which can provide more-accurate GPS position information. When using WAAS or EGNOS, the device may take longer to acquire satellites.

Speed Filter: Averages the speed of your vessel over a short period of time for smoother speed values.

Source: Allows you to select the preferred source for GPS.

Viewing the Event Log

The event log shows a list of system events.

Select **Settings** > **System** > **System Information** > **Event Log**.

Viewing System Software Information

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

Select **Settings** > **System** > **System Information** > **Software Information**.

My Vessel Settings

NOTE: Some settings and options require additional charts or hardware.

Select **Settings** > **My Vessel**.

Keel Offset: Offsets 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 (*Setting the Keel Offset*, page 22).

Temp. Offset: Compensates for the water temperature reading from a NMEA 0183 water-temperature sensor or a temperature-capable transducer (*Setting the Water Temperature Offset*, page 23).

Calibrate Water Speed: Calibrates the speed-sensing transducer or sensor *Calibrating a Water Speed Device*, page 23.

Fuel Capacity: Sets the combined fuel capacity of all the fuel tanks on your vessel (*Setting the Fuel Capacity of the Vessel*, page 23).

Vessel Type: Enables some chartplotter features based on the boat type.

Fill Up All Tanks: Sets the tank levels to full (*Synchronizing the Fuel Data with the Actual Vessel Fuel*, page 23).

Add Fuel to Boat: Allows you to enter the quantity of fuel you added to your tank, when you did not entirely fill up the tank (*Synchronizing the Fuel Data with the Actual Vessel Fuel*, page 23).

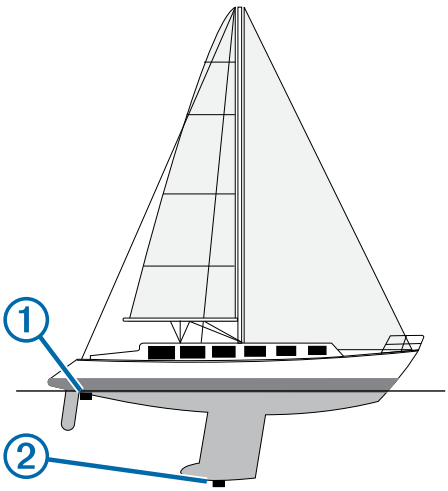
Set Total Fuel Onboard: Sets the combined amount of fuel in all the fuel tanks on your vessel (*Synchronizing the Fuel Data with the Actual Vessel Fuel*, page 23).

Set Gauge Limits: Sets the upper and lower limits of various gauges (*Customizing Engine Gauge and Fuel Gauge Limits*, page 23).

Setting the Keel Offset

You can enter a keel offset to compensate the surface reading for the depth of a keel, making it possible to measure depth from the bottom of the keel instead of from the transducer location. Enter a positive number to offset for a keel. You can enter a negative number to compensate for a large vessel that may draw several feet of water.

1. Complete an action, based on the location of the transducer:
   - If the transducer is installed at the water line ①, measure the distance from the transducer location to the keel of the boat. Enter this value in steps 3 and 4 as a positive number.
   - If the transducer is installed at the bottom of the keel ②, measure the distance from the transducer to the water line. Enter this value in steps 3 and 4 as a negative number.



2 Select **Settings** > **My Vessel** > **Keel Offset**.
3 Select + or − based on the location of the transducer.
4 Enter the distance measured in step 1.

Setting the Water Temperature Offset

Before you can set the water temperature offset, you must have a NMEA 0183 water-temperature sensor or a temperature-capable transducer to measure water temperature.

The temperature offset compensates for the temperature reading from a temperature sensor.

1 Measure the water temperature using the temperature sensor or temperature-capable transducer that is connected to the chartplotter.
2 Measure the water temperature using a different temperature sensor or a thermometer that is known to be accurate.
3 Subtract the water temperature measured in step 1 from the water temperature measured in step 2.

   This is the temperature offset. Enter this value in step 5 as a positive number if the sensor connected to the chartplotter measures the water temperature as being colder than it actually is. Enter this value in step 5 as a negative number if the sensor connected to the chartplotter measures the water temperature as being warmer than it actually is.
4 Select **Settings** > **My Vessel** > **Temp. Offset**.
5 Enter the temperature offset calculated in step 3.

Calibrating a Water Speed Device

If you have a speed-sensing transducer connected to the chartplotter, you can calibrate that speed-sensing device to improve the accuracy of water-speed data displayed by the chartplotter.

1 Select **Settings** > **My Vessel** > **Calibrate Water Speed**.
2 Follow the on-screen instructions.

   If the boat is not moving fast enough or the speed sensor is not registering a speed, a message appears.
3 Select **OK**, and safely increase the boat speed.
4 If the message appears again, stop the boat, and ensure the speed-sensor wheel is not stuck.
5 If the wheel turns freely, check the cable connections.
6 If you continue to get the message, contact Garmin product support.

Setting the Fuel Capacity of the Vessel

1 Select **Settings** > **My Vessel** > **Fuel Capacity**.
2 Enter the combined total capacity of the fuel tanks.

Synchronizing the Fuel Data with the Actual Vessel Fuel

You can synchronize the fuel levels in the chartplotter with the actual fuel in the vessel when you add fuel to your vessel.

1 Select **Navigation Info** > **Engine** > **MENU**.
2 Select an option:
   - After you have filled up all the fuel tanks on the vessel, select **Fill Up All Tanks**. The fuel level is reset to maximum capacity.
   - After you have added less than a full tank of fuel, select **Add Fuel to Boat**, and enter the amount added.
   - To specify the total fuel in the vessel tanks, select **Set Total Fuel Onboard**, and enter the total amount of fuel in the tanks.

Customizing Engine Gauge and Fuel Gauge Limits

You can configure the upper and lower limits and the range of desired standard operation of a gauge. When a value exceeds the range of standard operation, the gauge becomes red.

NOTE: Not all options are available for all gauges.

1 Select a gauge.
2 Select **Gauge Limits** > **Custom** > **Edit Limits**.
3 Select an option:
   - To set the minimum value of the standard operating range, select **Rated Min**.
   - To set the maximum value of the standard operating range, select **Rated Max**.
   - To set the lower limit of the gauge lower than the rated minimum, select **Scale Min**.
   - To set the upper limit of the gauge higher than the rated maximum, select **Scale Max**.
4 Select the limit value.
5 Repeat steps 4 and 5 to set additional gauge limits.

Communications Settings

NOTE: Some settings and options require additional charts or hardware.

Select **Settings** > **Communications**.

Serial Port: Sets the input/output format for the serial port to use when connecting the chartplotter to external NMEA devices, computers, or other Garmin devices.

NMEA 0183 Setup: Sets the NMEA 0183 sentences the chartplotter transmits, how many digits to the right of the decimal point are transmitted in a NMEA output, and how waypoints are identified (*NMEA 0183 Settings*, page 24).

NMEA 2000 Setup: Allows you to view and label the devices on the NMEA 2000 network (*NMEA 2000 Settings*, page 24).

Marine Network: Allows you to view the devices with which you are sharing maps, sonar, or radar. Not available on all chartplotter models.

NOTE: You can only view networked data on a model that supports that data. For example, you cannot view networked radar on model that does not support radar.

NMEA 0183

The chartplotters support the NMEA 0183 standard, which is used to connect various NMEA 0183 devices, such as VHF radios, NMEA instruments, autopilots, wind sensors, and heading sensors.

To connect the chartplotter to optional NMEA 0183 devices, see the chartplotter installation instructions.

The approved NMEA 0183 sentences for the chartplotter are GPAPB, GPBOD, GPBWC, GPGGA, GPGLL, GPGSA, GPGSV,

GPRMB, GPRMC, GPRTE, GPVTG, GPWPL, GPXTE, and Garmin proprietary sentences PGRME, PGRMM, and PGRMZ.

This chartplotter also includes support for the WPL sentence, DSC, and sonar NMEA 0183 input with support for the DPT (depth) or DBT, MTW (water temperature), and VHW (water temperature, speed, and heading) sentences.

NMEA 0183 Settings

Select **Settings** > **Communications** > **NMEA 0183 Setup**.

Sounder: Enables NMEA 0183 output sentences for the sounder (if applicable).

Route: Enables NMEA 0183 output sentences for routes.

System: Enables NMEA 0183 output sentences for system information.

Garmin: Enables NMEA 0183 output sentences for Garmin proprietary sentences.

Posn Precision: Adjusts the number of digits to the right of the decimal point for transmission of NMEA output.

Waypoint IDs: Sets the device to transmit waypoint names or numbers via NMEA 0183 while navigating. Using numbers may resolve compatibility issues with older NMEA 0183 autopilots.

Diagnostics: Displays NMEA 0183 diagnostic information.

Defaults: Restores the NMEA 0183 settings to the original factory defaults.

NMEA 2000 Settings

Select **Settings** > **Communications** > **NMEA 2000 Setup**.

Device List: Displays the devices connected to the network.

Label Devices: Changes the labels for available connected devices.

Setting Alarms

Navigation Alarms

Select **Settings** > **Alarms** > **Navigation**.

Arrival: Sets an alarm to sound when you are within a specified distance or time from a turn or a destination.

Anchor Drag: Sets an alarm to sound when you exceed a specified drift distance while anchored.

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

System Alarms

Alarm Clock: Sets an alarm clock.

Device Voltage: Sets an alarm to sound when the battery reaches a specified low voltage.

GPS Accuracy: Sets an alarm to sound when the GPS location accuracy falls outside the user-defined value.

Units Settings

Select **Settings** > **Units**.

System Units: Sets the unit format for the device.

Variance: Sets the magnetic declination, the angle between magnetic north and true north, for your present location.

North Reference: Sets the direction references used in calculating heading information. True sets geographic north as the north reference. Grid sets grid north as the north reference (000º). Magnetic sets the magnetic north as the north reference.

Position Format: Sets the position format in which a given location reading appears. Do not change this setting unless you are using a map or chart that specifies a different position format.

Map Datum: Sets the coordinate system on which the map is structured. Do not change this setting unless you are using a map or chart that specifies a different map datum.

Pressure Ref. Time: Sets the reference time used to calculate the barometer trend. The trend is indicated in the barometer field.

Time Format: Sets a 12-hour, 24-hour, or UTC time format.

Time Zone: Sets the time zone, or allows automatic selection based on GPS location.

Navigation Settings

NOTE: Some settings and options require additional charts or hardware.

Select **Settings** > **Navigation**.

Route Labels: Sets the type of labels shown with route turns on the map.

Auto Guidance: Sets the measurements for the Safe Depth, Safe Height, and Shoreline Distance, when you are using some premium maps.

Turn Transition Activ.: Sets the turn transition to be calculated based on time or distance.

Turn Transition Time: Sets how many minutes before the turn that you transition to it as the next leg, when Time is selected for the Turn Transition Activ.. You can raise this value to help improve the accuracy of the autopilot when navigating a route or an Auto Guidance line with many frequent turns or at higher speeds. For straighter routes or slower speeds, lowering this value can improve autopilot accuracy.

Turn Transition Dist.: Sets how far before the turn that you transition to it as the next leg, when Distance is selected for the Turn Transition Activ.. You can raise this value to help improve the accuracy of the autopilot when navigating a route or an Auto Guidance line with many frequent turns or at higher speeds. For straighter routes or slower speeds, lowering this value can improve autopilot accuracy.

Route Start: Selects a starting point for route navigation.

Other Vessel Settings

When your compatible chartplotter is connected to an AIS device or VHF radio, you can set up how other vessels are displayed on the chartplotter.

Select **Settings** > **Other Vessels**.

AIS: Enables and disables AIS signal reception.

DSC: Enables and disables digital selective calling (DSC).

AIS Alarm: Sets the collision alarm (*Setting the Safe-Zone Collision Alarm*, page 6 and *Enabling AIS Transmission Test Alerts*, page 6).

Restoring the Original Chartplotter Factory Settings

NOTE: This procedure deletes all settings information you have entered.

Select **Settings** > **System** > **System Information** > **Factory Settings**.

Appendix

Registering Your Device

Help us better support you by completing our online registration today.

- Go to www.garmin.com/express.
- Keep the original sales receipt, or a photocopy, in a safe place.

Cleaning the Screen

NOTICE

Cleaners containing ammonia will harm the anti-reflective coating.

The device is coated with a special anti-reflective coating which is very sensitive to skin oils, waxes, and abrasive cleaners.

1. Apply an eyeglass lens cleaner specified as safe for anti-reflective coatings to the cloth.
2. Gently wipe the screen with a soft, clean, lint-free cloth.

Screenshots

You can capture a screenshot of any screen shown on your chartplotter as a bitmap (.bmp) file. You can transfer the screenshot to your computer.

Capturing Screenshots

1. Insert a memory card into the card slot.
2. Select **Settings** > **System** > **Display** > **Screenshot Capture** > **On**.
3. Go to a screen you want to capture.
4. Hold **HOME** for at least six seconds.

Copying Screenshots to a Computer

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

Troubleshooting

My device will not acquire GPS signals

If the device is not acquiring satellite signals, there could be a few causes. If the device has moved a large distance since the last time it has acquired satellites or has been turned off for longer than a few weeks or months, the device may not be able to acquire the satellites correctly.

- Ensure the device is using the latest software. If not, update the device software (*Updating the Device Software*, page 1).
- If the device is using an internal GPS antenna, make sure the device has a clear view of the sky so the internal antenna can receive the GPS signal. If it is mounted inside of a cabin, it should be close to a window so it can receive the GPS signal. If the device is mounted inside a cabin and cannot be placed in a location where the device can acquire satellites, use an external GPS antenna.

My device will not turn on or keeps turning off

Devices erratically turning off or not turning on could indicate an issue with the power supplied to the device. Check these items to attempt to troubleshoot the cause of the power issue.

- Make sure the power source is generating power.

  You can check this several ways. For example, you can check whether other devices powered by the source are functioning.
- Check the fuse in the power cable.

  The fuse should be located in a holder that is part of the red wire of the power cable. Check that the proper size fuse is installed. Refer to the label on the cable or the installation instructions for the exact fuse size needed. Check the fuse to make sure there is still a connection inside of the fuse. You can test the fuse using a multimeter. If the fuse is good, the multimeter reads 0 ohm.
- Check to make sure the device is receiving is at least 10 V, but 12 V is recommended.

  To check the voltage, measure the female power and ground sockets of the power cable for DC voltage. If the voltage is less than 10 V, the device will not turn on.
- If the device is receiving enough power but does not turn on, contact Garmin product support at www.garmin.com/support.

My device is not creating waypoints in the correct location

You can manually enter a waypoint location to transfer and share data from one device to the next. If you have manually entered a waypoint using coordinates, and the location of the point does not appear where the point should be, the map datum and position format of the device may not match the map datum and position format originally used to mark the waypoint.

Position format is the way in which the GPS receiver's position appears on the screen. Commonly displayed as latitude/longitude in degrees and minutes, with options for degrees, minutes and second, degrees only, or one of several grid formats.

Map datum is a math model which depicts a part of the surface of the earth. Latitude and longitude lines on a paper map are referenced to a specific map datum.

1. Find out which map datum and position format was used when the original waypoint was created.

   If the original waypoint was taken from a map, there should be a legend on the map that lists the map datum and position format used to create that map. Most often this is found near the map key.
2. On the chartplotter, select **Settings** > **Units**.
3. Select the correct map datum and position format settings.
4. Create the waypoint again.

NMEA 0183 Information

Type	Sentence	Description
Transmit	GPAPB	APB: Heading or track controller (autopilot) sentence "B"
	GPBOD	BOD: Bearing (origin to destination)
	GPBWC	BWC: Bearing and distance to waypoint
	GPGGA	GGA: Global positioning system fix data
	GPGLL	GLL: Geographic position (latitude and longitude)
	GPGSA	GSA: GNSS DOP and active satellites
	GPGSV	GSV: GNSS satellites in view
	GPRMB	RMB: Recommended minimum navigation information
	GPRMC	RMC: Recommended minimum specific GNSS data
	GPRTE	RTE: Routes
	GPVTG	VTG: Course over ground and ground speed
	GPWPL	WPL: Waypoint location
	GPXTE	XTE: Cross track error
	PGRME	E: Estimated error
	PGRMM	M: Map datum
	PGRMZ	Z: Altitude
	SDDBT	DBT: Depth below transducer
	SDDPT	DPT: Depth
	SDMTW	MTW: Water temperature

Type	Sentence	Description
	SDVHW	VHW: Water speed and heading
Receive	DPT	Depth
	DBT	Depth below transducer
	MTW	Water temperature
	RMC/GGA/GLL	GPS position
	VHW	Water speed and heading
	WPL	Waypoint location
	DSC	Digital selective calling information
	DSE	Expanded digital selective calling
	HDG	Heading, deviation, and variation
	HDM	Heading, magnetic
	MWD	Wind direction and speed
	MDA	Meteorological composite
	MWV	Wind speed and angle
	VDM	AIS VHF data-link message
You can purchase complete information about National Marine Electronics Association (NMEA) format and sentences from: NMEA, Seven Riggs Avenue, Severna Park, MD 21146 USA (www.nmea.org)		

NMEA 2000 PGN Information

Type	PGN	Description
Transmit and receive	059392	ISO acknowledgment
	059904	ISO request
	060928	ISO address claim
	126208	NMEA: Command, request, and acknowledge group function
	126996	Product information
	127250	Vessel heading
	128259	Speed: Water referenced
	128267	Water depth
	129539	GNSS DOPs
	129799	Radio frequency, mode, and power
	130306	Wind data
	130312	Temperature
Transmit	126464	Transmit and receive PGN list group function
	127258	Magnetic Variance
	129025	Position: Rapid update
	129026	COG and SOG: Rapid update
	129029	GNSS position data
	129283	Cross track error
	129284	Navigation data
	129285	Navigation route and waypoint info
	129540	GNSS satellites in view
Receive	127245	Rudder
	127250	Vessel heading
	127488	Engine parameters: Rapid update
	127489	Engine parameters: Dynamic
	127493	Transmission parameters: Dynamic
	127498	Engine parameters: Static
	127505	Fluid level
	129038	AIS class A position report
	129039	AIS class B position report
	129040	AIS class B extended position report
	129794	AIS class A static and voyage related data
	129798	AIS SAR aircraft position report
	129802	AIS safety-related broadcast message
	129808	DSC call information
	130310	Environmental parameters
	130311	Environmental parameters (obsolete)
	130313	Humidity
	130314	Actual pressure
	130576	Small craft status
This data applies only to NMEA 2000-compatible products.		

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1800 235 822	+43 (0) 820 220230
+ 32 2 672 52 54	0800 770 4960
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+420 221 985466 +420 221 985465	+ 45 4810 5050
+ 358 9 6937 9758	+ 331 55 69 33 99
+ 39 02 36 699699	(+52) 001-855-792-7671
0800 427 652	0800 0233937
+47 815 69 555	00800 4412 454 +44 2380 662 915
+35 1214 447 460	+386 4 27 92 500
0861 GARMIN (427 646) +27 (0)11 251 9800	+34 93 275 44 97
+ 46 7744 52020	+886 2 2642-9199 ext 2
0808 238 0000 +44 870 850 1242	+49 (0) 89 858364880 zum Ortstarif - Mobilfunk kann abweichen
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