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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.

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the navaids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

NOTE: Not all features are available on all models.

The Garmin® website at support.garmin.com presents up-to-date information about your product. The support pages will provide answers to frequently asked support questions, and you can download software and chart updates. There is also contact information to Garmin support should you have any questions.

Device Overview

1. Touchscreen
2. Power key
3. Automatic backlight sensor
4. GPSMAP 7x07 models have two microSD® card slots. Other models have two SD® card slots. The max. card size is 32 GB.

Connector View

The connectors and locations vary based upon the model. This image and table are representative of a GPSMAP 7410xsv model.

<table>
<thead>
<tr>
<th>Connector</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVI-D video out</td>
<td>DVI-D video out</td>
</tr>
<tr>
<td>Ground screw</td>
<td>Ground screw</td>
</tr>
<tr>
<td>Composite video in</td>
<td>Composite video in</td>
</tr>
<tr>
<td>Power and NMEA® 0183 network</td>
<td>Power and NMEA® 0183 network</td>
</tr>
<tr>
<td>8-pin transducer</td>
<td>8-pin transducer</td>
</tr>
<tr>
<td>Engine or J1939 network</td>
<td>Engine or J1939 network</td>
</tr>
<tr>
<td>NMEA 2000® network</td>
<td>NMEA 2000® network</td>
</tr>
</tbody>
</table>

Locking and Unlocking the Touchscreen

You can lock the touchscreen to prevent inadvertent screen touches.

1. Select ↪ > Lock Touchscreen to lock the screen.
2. Select ↪ to unlock the screen.

Tips and Shortcuts (MFD models)

- Press ↪ to turn on the chartplotter.
- From any screen, press ↪ repeatedly to scroll through the brightness levels, if available. This can be helpful when the brightness is so low you cannot see the screen.
- Select Home from any screen to return to the Home screen.
- Select Menu to open additional settings about that screen.
- Select Menu to close the menu when finished.
- Press ↪ to open additional options, such as locking the touchscreen.
- Press ↪, and select Power > Turn Off System, or hold ↪ until the Turn Off System bar fills to turn off the chartplotter, when available.
- Press ↪, and select Power > Sleep Station to set the chartplotter to standby mode, when available.
• On the home screen of some models, swipe up or down on the category buttons along the right side of the screen to view the additional buttons.

On some models, not all category buttons are visible. The arrows at the top or bottom of the buttons indicate not all buttons are visible.

• On some menu buttons, select the button 1 to enable the option.

A green light on an option indicates the option is enabled 2.

• When available, select the arrow 3 to open the menu.

Protective Cover

**NOTICE**

Before moving the vessel, you should remove the protective cover. Leaving the sun cover in place while the boat is moving could result in the cover becoming detached and possibly becoming lost or falling into the water.

The protective cover protects the screen when the device is not in use.

To remove the cover, hold the edge, and pull forward.

Accessing Owner’s Manuals on the Chartplotter

1 Select Info > Owner’s Manual.
2 Select a manual.
3 Select Open.

Downloading the Manuals from the Web

You can get the latest owner’s manual and translations of manuals from the Garmin website.

1 Go to www.garmin.com/manuals/GPSMAP7400-7600.
2 Download the manual.

Garmin Support Center

Go to support.garmin.com for help and information, such as product manuals, frequently asked questions, videos, software updates, and customer support.

Inserting Memory Cards

You can use optional memory cards with 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 Garmin Quickdraw™ Contours mapping, record sonar (with a compatible transducer), transfer data such as waypoints and routes to another compatible chartplotter or a computer, and use the ActiveCaptain® app.

This device supports two SD memory cards, up to a 32 GB, formatted to FAT32. Speed class 4 or greater required.

1 Open the access flap or door 1 on the front of the chartplotter.

2 Insert the memory card 2.
3 Press the card in until it clicks.
4 Clean and dry the gasket and door.

**NOTICE**

To prevent corrosion, be sure the memory card, gasket, and door are thoroughly dry before closing the door.

5 Close the door.

Acquiring GPS Satellite Signals

The device may need a clear view of the sky to acquire satellite signals. The time and date are set automatically based on the GPS position.

1 Turn on the device.
2 Wait while the device locates satellites.

It may take 30 to 60 seconds to acquire satellite signals.

When the device acquires satellite signals, 🗺️ appears at the top of the Home screen.

If the device loses satellite signals, 🗺️ disappears and a flashing question mark appears over 🗺️ on the chart.

For more information about GPS, go to garmin.com/aboutGPS. For help acquiring satellite signals, see My device will not acquire GPS signals, page 62.

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 > Source.
2 Select the source for GPS data.

Customizing the Chartplotter

Home Screen

The chartplotter home screen provides access to all of the features in the chartplotter. The features are dependant on the accessories you have connected to the chartplotter. You may not have all of the options and features discussed in this manual.

When viewing another screen, you can return to the home screen by selecting Home.
Customizing the Chartplotter

1 Select the item to remove.

To remove an item you have added to the Combination Page

Adding an Item to Favorites

Customizing the Layout of a SmartMode or Combination Page

You can customize the layout and data shown in the combination pages and SmartMode layouts. When you change the layout of a page in a display you are interacting with, the change appears only on that display, except for the SmartMode name and symbol. When you change the SmartMode name or symbol for the layout, the new name or symbol appears on all displays in the station.

1 Open a page to customize.

2 Select Menu.
3 Select Edit Layout or Edit Combo.
4 Select an option:
   - To change the name, select Name or Name & Symbol > Name, enter a new name, and select Done.
   - To change the SmartMode symbol, select Name & Symbol > Symbol, and select a new symbol.
   - To change the number of functions shown and the layout of the screen, select Layout, and select an option.
   - To change the function of a portion of the screen, select the window to change, and select a function from the list on the right.
   - To change how the screens are split, drag the arrows to a new location.
   - To change the data shown on the page and additional data bars, select Overlays, and select an option.

TIP: While viewing a screen with data overlay, hold an overlay box to quickly change the data in it.

To assign a preset to a portion of the SmartMode screen, select Presets > Include, and select a preset from the list on the right.

Customizing the Startup Screen

You personalize the image that is displayed when the chartplotter is turning on. For the best fit, the image should be 50 MB or less conform to the recommended dimensions (Recommended Startup Image Dimensions, page 3).

1 Insert a memory card that contains the image you want to use.
2 Select Settings > System > Sounds and Display > Startup Image > Select Image.
3 Select the memory card slot.
4 Select the image.
5 Select Set as Startup Image.

The new image is shown then turning on the chartplotter.

Recommended Startup Image Dimensions

For the best fit for the startup images, use an image that has the following dimensions, in pixels.

<table>
<thead>
<tr>
<th>Display resolution</th>
<th>Image width</th>
<th>Image height</th>
</tr>
</thead>
<tbody>
<tr>
<td>WVGA</td>
<td>680</td>
<td>200</td>
</tr>
<tr>
<td>WSVGGA</td>
<td>880</td>
<td>270</td>
</tr>
<tr>
<td>WXGA</td>
<td>1080</td>
<td>350</td>
</tr>
<tr>
<td>HD</td>
<td>1240</td>
<td>450</td>
</tr>
<tr>
<td>WUXGA</td>
<td>1700</td>
<td>650</td>
</tr>
</tbody>
</table>

Adding a SmartMode Layout

You can add SmartMode layouts to suit your needs. Each customization made to one SmartMode layout for the home screen in a station appears on all displays in the station.

1 From the home screen, select SmartMode™ > Menu > Add Layout.
2 Select an option:
   - To change the name, select Name & Symbol > Name, enter a new name, and select Done.
   - To change the SmartMode symbol, select Name & Symbol > Symbol, and select a new symbol.
   - To change the number of functions shown and the layout of the screen, select Layout, and select an option.
   - To change the function of a portion of the screen, select the window to change, and select a function from the list on the right.
   - To change how the screens are split, drag the arrows to a new location.

The categories along the right of the screen provide quick access to the main features of your chartplotter. For example, the Sonar category displays the views and pages related to the sonar feature. You can save items you commonly access to the Favorites category.

TIP: If your home screen has been customized by the boat manufacturer, you can open the original home page category tabs by dragging the bar on the right side of the screen to the left.

The SmartMode items are geared toward an activity, such as cruising or docking. When a SmartMode button is selected from the home screen, each display in the station can show unique information. For example, when Cruising is selected from the home screen, one display can show the navigation chart and another display can show the radar screen.

All of the options along the bottom of the home screen are visible on all other screens, except for the Settings button. The Settings button is accessible only from the home screen.

When multiple displays are installed on the Garmin Marine Network, you can group them together into a station. A station enables the displays to work together, instead of as several separate displays. You can customize the layout of the pages on each display, making each page different on each display. When you change the layout of a page in one display, the changes appear on only that display. When you change the name and symbol of the layout, those changes appear on all displays in the station, to maintain a consistent appearance.

Adding an Item to Favorites

You can add items such as a chart, combo screen, or gauge to the Favorites category.

NOTE: If your home screen has been customized by the boat manufacturer, you cannot add an item to the Favorites category.

1 From the home screen, select a category from the right.
2 Hold a button on the left.

The item is added to the Favorites home screen category.

To remove an item you have added to the Favorites category, open the Favorites category, select Menu > Remove Favorite, and select the item to remove.

Customizing Pages

Customizing the Layout of a SmartMode or Combination Page

You can customize the layout and data shown in the combination pages and SmartMode layouts. When you change the layout of a page in a display you are interacting with, the change appears only on that display, except for the SmartMode name and symbol. When you change the SmartMode name or symbol for the layout, the new name or symbol appears on all displays in the station.

1 Open a page to customize.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Status bar</td>
</tr>
<tr>
<td>2</td>
<td>Pages bar</td>
</tr>
<tr>
<td>3</td>
<td>Categories bar</td>
</tr>
<tr>
<td>4</td>
<td>Menu bar</td>
</tr>
</tbody>
</table>
Deleting a Combination Page

To change the data shown on the page and additional data bars, select **Overlays**, and select an option.

To assign a preset to a portion of the SmartMode screen, select **Presets > Include**, and select a preset from the list on the right.

Creating a New Combination Page

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

1. Select **Combos > Menu > Add Combo**.
2. Select a window.
3. Select a function for the window.
4. Repeat these steps for each window of the page.
5. Drag the arrows to resize the windows.
6. Hold a window to rearrange it.
7. Hold a data field to select new data.
8. Select **Layout**, and select a layout.
9. Select **Name**, enter a name for the page, and select **Done**.
10. Select **Overlays**, and select which data to show.
11. Select **Done** when you have finished customizing the page.

Deleting a Combination Page

1. Select **Combos > Menu > Delete Combo**.
2. Select a combination.

Customizing the Data Overlays

You can customize the data in the data overlays shown on a screen.

1. Select an option based on the type of screen you are viewing:
   - From a full screen view, select **Menu > Edit Overlays**.
   - From a combination screen, select **Menu > Edit Combo > Overlays**.
   - From a SmartMode screen, select **Menu > Edit Layout > Overlays**.

   **TIP:** To quickly change the data shown in an overlay box, hold the overlay box.

2. Select an item to customize the data and data bar:
   - To change the data shown in an overlay box, select the overlay box, select the new data to show, and select **Back**.
   - To select the location and layout of the data overlay bar, select **Data**, and select an option.
   - To customize the information shown when navigating, select **Navigation**, and select an option.
   - To turn on other data bars, like the media controls, select **Top Bar** or **Bottom Bar**, and select the necessary options.
3. Select **Done**.

Resetting the Station Layouts

You can restore the layouts in this station to the factory default settings.

Select **Settings > System > Station Information > Reset Layouts**.

**Presets**

A preset is a collection of settings that optimize the screen or view. You can use particular presets to optimize groups of settings for your activity. For example, some settings might be optimal for when you are fishing, and others might be optimal for when you are cruising. Presets are available on some screens, such as charts, sonar views, and radar views.

- To select a preset for a compatible screen, select **Menu > : ★**, and select the preset.

When you are using a preset and you make changes to the settings or view, you can save the changes to the preset or create a new preset based on the new customizations.

Saving a New Preset

After you have customized the settings and view of a screen, you can save the customization as a new preset.

1. From a compatible screen, change the settings and view.
2. Select **Menu > : ★ > Save > New**.
3. Enter a name, and select **Done**.

Managing Presets

You can customize the pre-loaded presets and edit presets you created.

1. From a compatible screen, select **Menu > : ★ > Manage**.
2. Select a preset.
3. Select an option:
   - To rename the preset, select **Rename**, enter a name, and select **Done**.
   - To edit the preset, select **Edit**, and update the preset.
   - To delete the preset, select **Delete**.
   - To reset all presets to factory settings, select **Reset All**.

Setting the Vessel Type

You can select your boat type to configure the chartplotter settings and to use features customized for your boat type.

1. Select **Settings > My Vessel > Vessel Type**.
2. Select an option.

Adjusting the Backlight

1. Select **Settings > System > Display > Backlight**.
2. Adjust the backlight.

   **TIP:** From any screen, press the back button repeatedly to scroll through the brightness levels. This can be helpful when the brightness is so low you cannot see the screen.

Adjusting the Color Mode

1. Select **Settings > System > Sounds and Display > Color Mode**.
   - **TIP:** Select the **Color Mode** from any screen to access the color settings.
2. Select an option.
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 Up.

NOTE: When Auto Power Up 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.

Automatically Turning Off the System

You can set the chartplotter and the whole system to turn off automatically after it has been asleep for the selected length of time. Otherwise, you must press and hold to turn off the system manually.
1 Select Settings > System > Auto Power Off.
2 Select an option.

ActiveCaptain App

⚠️ CAUTION

This feature allows users to submit information. Garmin makes no representations about the accuracy, completeness, or timeliness of information submitted by users. Any use or reliance on the information submitted by users is at your own risk.

The ActiveCaptain app provides a connection to your GPSMAP device, charts, maps, and the community for a connected boating experience.

On your mobile device with the ActiveCaptain app, you can download, purchase, and update maps and charts. You can use the app to easily and quickly transfer user data, such as waypoints and routes, connect to the Garmin Quickdraw Contours Community, and update device software. You can also plan your trip, and view and control the GPSMAP device from the app.

You can connect to the ActiveCaptain community for up-to-date feedback on marinas and other points of interest. The app can push smart notifications, such as calls and texts, to your chartplotter display when paired.

ActiveCaptain Roles

Your level of interaction with the GPSMAP device using the ActiveCaptain app depends on your role.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Owner</th>
<th>Guest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register device, built-in maps, and supplemental map cards to account</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Update software</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Automatically transfer Garmin Quickdraw contours you have downloaded or created</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Push smart notifications</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Automatically transfer user data, such as waypoints and routes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Begin navigating to a specific waypoint or navigating a specific route, and send that waypoint or route to the GPSMAP device</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Getting Started with the ActiveCaptain App

You can connect a mobile device to the GPSMAP device using the ActiveCaptain app. The app provides a quick and easy way for you to interact with your GPSMAP device and complete such tasks as sharing data, registering, updating the device software, and receiving mobile device notifications.
1 From the GPSMAP device, select A/V, Gauges, Controls > ActiveCaptain.

2 From the ActiveCaptain page, select Wi-Fi Network > Wi-Fi > On.
3 Enter a name and password for this network.
4 Insert a memory card in the GPSMAP device’s card slot (Inserting Memory Cards, page 2).
5 Select Set ActiveCaptain Card.

NOTICE

You might be prompted to format the memory card. Formatting the card deletes all information saved on the card. This includes any saved user data, such as waypoints. Formatting the card is recommended, but not required. Before formatting the card, you should save the data from the memory card onto the device internal memory (Copying User Data from a Memory Card, page 60). After formatting the card for the ActiveCaptain app, you can transfer the user data back to the card (Copying User Data to a Memory Card, page 60).

Be sure the card is inserted each time you want to use the ActiveCaptain feature.
6 From the application store on your mobile device, install and open the ActiveCaptain app.
7 Bring the mobile device within 32 m (105 ft.) of the GPSMAP device.
8 From your mobile device settings, open the Wi-Fi® connections page and connect to the Garmin device, using the name and password you entered in the Garmin device.

Enabling Smart Notifications

⚠️ WARNING

Do not read or reply to notifications while operating the vessel. Failure to pay attention to the conditions on the water can result in vessel damage, personal injury, or death.

Before your GPSMAP device can receive notifications, you must connect it to your mobile device and to the ActiveCaptain app.
1 From the GPSMAP device, select ActiveCaptain > Smart Notifications > Enable Notifications.
2 Turn on Bluetooth® technology in the mobile device settings.
3 Bring the devices within 10 m (33 ft.) of each other.
4 From the ActiveCaptain app on the mobile device, select Smart Notifications > Pair with Chartplotter.
5 Follow the on-screen instructions to pair the app to the GPSMAP device.
6 When prompted, enter the key on your mobile device.
7 If necessary, adjust which notifications you receive in your mobile device settings.

Receiving Notifications

⚠️ WARNING

Do not read or reply to notifications while operating the vessel. Failure to pay attention to the conditions on the water can result in vessel damage, personal injury, or death.

Before your GPSMAP device can receive notifications, you must connect it to your mobile device and enable the Smart Notifications feature (Enabling Smart Notifications, page 5).

When the Smart Notifications feature is enabled and your mobile device receives a notification, a pop-up notification appears on the GPSMAP screen briefly.

NOTE: The available actions depend on the type of notification and your phone operating system.

• To answer a phone call on your phone, select Answer.

TIP: Have your phone nearby. The phone call is answered on your mobile phone, not on the chartplotter.
Managing Notifications

**WARNING**

Do not read or reply to notifications while operating the vessel. Failure to pay attention to the conditions on the water can result in vessel damage, personal injury, or death.

Before you can manage the notifications, you must enable the Smart Notifications feature (*Enabling Smart Notifications*, page 5).

When the Smart Notifications feature is enabled and your mobile device receives a notification, a pop-up notification appears on the GPSMAP screen briefly. You can access and manage the notifications from the ActiveCaptain screen.

1. Select **ActiveCaptain > Smart Notifications > Messages**. A list of notifications appears.
2. Select a notification.
3. Select an option:
   - **NOTE**: The available options vary based on your mobile device and the notification type.
   - To dismiss and remove the notification from the chartplotter and your mobile device, select **Clear** or **Delete**.
   - **NOTE**: This does not delete the message from the mobile device. This only dismisses and removes the notification.
   - To call the phone number back, select **Call Back** or **Dial**.

Making Notifications Private

You can turn off the pop-up notifications and disable the messages list on specific chartplotters for privacy. For example, the captain could disable pop-up notifications and messages on the chartplotter used for fishing, but allow notifications on the chartplotter used at the helm.

1. From the chartplotter you want notifications to be private, select **ActiveCaptain > Smart Notifications**.
2. Select an option:
   - To turn off pop-up notifications on this chartplotter, select **Popups**.
   - To turn off pop-up notifications and disable access to the messages list on this chartplotter, select **Visibility**.

Updating Software with the ActiveCaptain App

If your device has Wi-Fi technology, you can use the ActiveCaptain app to download and install the latest software updates for your device.

**NOTICE**

Software updates may require the app to download large files. Regular data limits or charges from your Internet service provider apply. Contact your Internet service provider for more information about data limits or charges.

1. Connect the mobile device to the GPSMAP device (*Getting Started with the ActiveCaptain App*, page 5).
2. When a chart update is available and you have internet access on your mobile device, select **Software Updates > Download**.

Communication with Wireless Devices

The chartplotters can create a wireless network to which you can connect wireless devices.

Setting Up the Wi-Fi Wireless Network

The chartplotters can create a Wi-Fi network to which you can connect wireless devices. The first time you access the wireless network settings, you are prompted to set up the network.

1. Select **Settings > Communications > Wi-Fi Network > Wi-Fi > On > OK**.
2. If necessary, enter a name for this wireless network.
3. Enter a password.
   - You will need this password to access the wireless network from a wireless device. The password is case-sensitive.

Connecting a Wireless Device to the Chartplotter

Before you can connect a wireless device to the chartplotter wireless network, you must configure the chartplotter wireless network (*Setting Up the Wi-Fi Wireless Network*, page 5).
You can connect multiple wireless devices to the chartplotter to share data.

1. From the wireless device, turn on the Wi-Fi technology and search for wireless networks.
2. Select the name of your chartplotter wireless network (*Setting Up the Wi-Fi Wireless Network*, page 6).
3. Enter the chartplotter password.

**Changing the Wireless Channel**

You can change the wireless channel if you have trouble finding or connecting to a device, or if you experience interference.

1. Select *Settings > Communications > Wi-Fi Network > Advanced > Channel*.
2. Enter a new channel.
3. The chartplotter begins searching for and connecting to the wireless sensor.

To view data from the sensor, add the data to a data field or gauge.

**Adjusting the Wind Sensor Orientation**

You should adjust this setting if the sensor does not face the front of the boat, exactly parallel to the center line.

1. Estimate the angle, in degrees clockwise around the mast, by which the sensor points away from the center of the front of the boat:
   - If the sensor is facing starboard, the angle should be between 1 and 180 degrees.
   - If the sensor is facing port, the angle should be between -1 and -180 degrees.
2. Select *Settings > Communications > Wireless Devices*.
3. Select the wind sensor.
4. Select *Wind Angle Offset*.
5. Enter the angle observed in step 1.
6. Select *Done*.

**Viewing Boat Data on a Garmin Watch**

You can connect a compatible Garmin watch to a compatible chartplotter to view data from the chartplotter.

1. Bring the Garmin watch within range (3 m) of the chartplotter.
2. From the watch clock screen, select *START > Boat Data > START*.
   - NOTE: If you have already connected to a chartplotter, and would like to connect to a different chartplotter, open the Boat Data screen, hold UP, and select Pair new.
3. On the chartplotter, select *Communications > Wireless Devices > Connect IQ™ Apps > Boat Data > Enable > New Connection*.
   - The chartplotter begins searching for and connecting to the wearable device.
4. Compare the code shown on the chartplotter with the one shown on the watch.
5. If the codes match, select *Yes* to complete the pairing process.

**Viewing Boat Data on a Garmin Nautix™ Device**

You can connect a Garmin Nautix device to the chartplotter to view chartplotter data on the Garmin Nautix device.

- NOTE: You can connect a Garmin Nautix device to multiple compatible devices for better coverage on larger vessels.
1. Bring the a Garmin Nautix device within range (3 m) of the chartplotter.
   - The device automatically looks for all compatible devices within range.
2. If necessary, from the wearable device menu, select *Device Connections > Pair New Device*.
3. On the chartplotter, select *Settings > Communications > Wireless Devices > Connect IQ™ Apps > Boat Data > Enable Connections > New Connection*.
   - The chartplotter begins searching for and connecting to the wearable device.

**Connecting a Wireless Sensor to the Chartplotter**

You can view data from a compatible wireless sensor on the chartplotter.

1. Select *Settings > Communications > Wireless Devices*.
2. Select the wind sensor.
3. Select *Enable*.

**Turning On and Off the Remote Backlight**

Turning off the remote backlight can significantly increase the battery life.

1. On the chartplotter, select *Settings > Communications > Wireless Devices > Remote > GPSMAP® Remote > Backlight*.
2. Follow the on-screen instructions.

**Disabling the Remote from All Chartplotters**

1. On the chartplotter, select *Settings > Communications > Wireless Devices > Remote > GPSMAP® Remote > Disconnect All*.
2. Follow the on-screen instructions.

**Wireless Wind Sensor**

**Connecting a Wireless Sensor to the Chartplotter**

You can view data from a compatible wireless sensor on the chartplotter.

1. Select *Settings > Communications > Wireless Devices*.
2. Select the wind sensor.
3. Select *Enable*.

The chartplotter begins searching for and connecting to the wireless sensor.

**NOTE:** The opening where the cable connects to the pole indicates the front of the sensor.

1. Estimate the angle, in degrees clockwise around the mast, by which the sensor points away from the center of the front of the boat:
   - If the sensor is facing starboard, the angle should be between 1 and 180 degrees.
   - If the sensor is facing port, the angle should be between -1 and -180 degrees.
2. Select *Settings > Communications > Wireless Devices*.
3. Select the wind sensor.
4. Select *Wind Angle Offset*.
5. Enter the angle observed in step 1.
6. Select *Done*.

**Viewing Boat Data on a Garmin Nautix™ Device**

You can connect a Garmin Nautix device to the chartplotter to view chartplotter data on the Garmin Nautix device.

- NOTE: You can connect a Garmin Nautix device to multiple compatible devices for better coverage on larger vessels.
1. Bring the a Garmin Nautix device within range (3 m) of the chartplotter.
   - The device automatically looks for all compatible devices within range.
2. If necessary, from the wearable device menu, select *Device Connections > Pair New Device*.
3. On the chartplotter, select *Settings > Communications > Wireless Devices > Connect IQ™ Apps > Boat Data > Enable Connections > New Connection*.
   - The chartplotter begins searching for and connecting to the wearable device.

After the devices are paired, they connect automatically when they are turned on and within range.
Charts and 3D Chart Views

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

NOTE: 3D chart views are available with premium charts, in some areas.

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

Nav. 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.

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.

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

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.

3D Chart: 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.

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.

Relief Shading: Provides high resolution elevation shading of lakes and coastal waters. This chart can be helpful for fishing and diving.

NOTE: The Relief Shading chart is available with premium charts, in some areas.

Navigation Chart and Fishing Chart

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

The Nav. Chart is optimized for navigation. You can plan a course, view map information, and use the chart as a navigational aid. To open the Nav. Chart, select Charts > Nav. Chart.

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

You can access the charts and 3D chart views by selecting Charts > Fishing Chart.

Zooming In and Out Using the Touchscreen

You can quickly zoom in and out of many screens, such as the charts and sonar views.

• Pinch two fingers together to zoom out.

WARNING

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the nav aids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

Chart Symbols

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

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🛥️</td>
<td>Buoy</td>
</tr>
<tr>
<td>🛥️</td>
<td>Information</td>
</tr>
<tr>
<td>🛥️</td>
<td>Marine services</td>
</tr>
<tr>
<td>🛥️</td>
<td>Tide station</td>
</tr>
<tr>
<td>🛥️</td>
<td>Current station</td>
</tr>
<tr>
<td>🛥️</td>
<td>Overhead photo available</td>
</tr>
<tr>
<td>🛥️</td>
<td>Perspective photo available</td>
</tr>
</tbody>
</table>

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.

Measuring a Distance on the Chart

1 From a chart, select a location.
2 Select Measure.
   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 Set Reference.

Creating a Waypoint on the Chart

1 From a chart, select a location or object.
2 Select 📍.

Viewing Location and Object Information on a Chart

You can view information, such as tide, current, celestial, chart notes, or local services, about a location or an object on the Navigation chart or the Fishing chart.

1 From the Navigation chart or Fishing chart, select a location or object.
   A list of options appears along the top of the chart. The options that appear vary based on the location or object you selected.
2 If necessary, select ►.
3 Select Information.

Viewing Details about Nav aids

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 Fishing chart is available with premium charts, in some areas.

NOTE: 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.

Navigating to a Point on the Chart
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 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 Navigate To.

3 Select an option:
   • To navigate directly to the location, select Go To or $\Rightarrow$.
   • To create a route to the location, including turns, select Route To or $\Rightarrow$.
   • To use Auto Guidance, select Auto Guidance or $\Rightarrow$.

4 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.

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

**Premium Charts**

**WARNING**

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the navaids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

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® g3 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 10).

**Aerial Photos:** Shows marinas and other navigationally significant aerial photos to help you visualize your surroundings (Viewing Aerial Photos of Landmarks, page 10).

**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 information about your vessel and chart data to determine the best path to your destination.

**Fish Eye 3D Chart View**

Using the depth contour lines of the premium charts, such as BlueChart g3 Vision, the Fish Eye 3D chart view provides an underwater view of the sea floor or lake bottom. Suspended targets, such as fish, are indicated by red, green, and yellow spheres. Red indicates the largest targets and green indicates the smallest.

**Viewing Tide Station Information**

\(\diamond\) 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 \(\diamond\).

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 9).

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.

<table>
<thead>
<tr>
<th>Color</th>
<th>Current Speed Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>0 to 1 knot</td>
</tr>
<tr>
<td>Orange</td>
<td>1 to 2 knots</td>
</tr>
<tr>
<td>Red</td>
<td>2 or more knots</td>
</tr>
</tbody>
</table>

**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 > Layers > Chart > Tides & Currents.
2 Select an option:
   • To show animated tide station indicators and animated current direction indicators on the chart, select **Animated**.
   • To enables the tides and current slider, which sets the time for which tides and currents are reported on the map, select **Slider**.

### 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 > Layers > Chart > Satellite Photos**.
2. Select an option:
   • Select **Land Only** to show standard chart information on the water, with photos overlaying the land.
     **NOTE:** This setting must be enabled to view Standard Mapping charts.
   • Select **Photo Map** 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 Points 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 ![Overhead photo](image.png).
   • To view a perspective photo, select ![Perspective photo](image.png). The photo was taken from the location of the camera, pointed in the direction of the cone.
2. Select **Photo**.

### 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

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="AIS vessel" /></td>
<td>AIS vessel. The vessel is reporting AIS information. The direction in which the triangle is pointing indicates the direction in which the AIS vessel is moving.</td>
</tr>
<tr>
<td><img src="image.png" alt="Target is selected." /></td>
<td>Target is selected.</td>
</tr>
</tbody>
</table>

**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.

### 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**.
**Deactivating a Target for an AIS Vessel**

Before you can set a collision alarm, you must have an AIS vessel.

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 > Deactivate.

**Setting the Safe-Zone Collision Alarm**

Before you can set a collision alarm, you must have a compatible chartplotter connected to an AIS device or radar. The safe-zone collision alarm is used only with AIS and MARPA compatible chartplotter connected to an AIS device or radar. The safe zone is used for collision avoidance and can be customized.

   - A message banner appears and an alarm sounds when a MARPA-tagged object or 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, and select a distance for the safe-zone radius around your vessel.
3. Select Time To, and 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.
4. Select MARPA Alarm, and select an option for when the alarm sounds for MARPA-tagged objects.

**AIS Aids to Navigation**

An AIS aid to navigation (ATON) is any kind of navigational aid that is transmitted over the AIS radio. ATONs are displayed on the charts and have identifying information, such as position and type.

There are three main kinds of AIS ATONs. Real ATONs physically exist and send their identifying and location information from their actual location. Synthetic ATONs physically exist, and their identifying and location information is sent from another location. Virtual ATONs do not actually exist, and their identifying and location information is sent from another location.

You can view AIS ATONs on the chart when the chartplotter is connected to a compatible AIS radio. To show AIS ATONs, from a chart, select Menu > Layers > Chart > Navaid > ATONs. You can view more information about an ATON if you select the ATON on the chart.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫</td>
<td>Real or synthetic ATON: Topmark Danger</td>
</tr>
<tr>
<td>⚫</td>
<td>Real or synthetic ATON: Topmark Safe</td>
</tr>
<tr>
<td>⚫</td>
<td>Virtual ATON: Topmark North</td>
</tr>
<tr>
<td>⚫</td>
<td>Virtual ATON: Topmark South</td>
</tr>
<tr>
<td>⚫</td>
<td>Virtual ATON: Topmark East</td>
</tr>
<tr>
<td>⚫</td>
<td>Virtual ATON: Topmark West</td>
</tr>
<tr>
<td>⚫</td>
<td>Virtual ATON: Topmark Safe</td>
</tr>
<tr>
<td>⚫</td>
<td>Virtual ATON: Topmark Special</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚫</td>
<td>AIS distress signal device transmission. Select to see more information about the transmission and begin navigation.</td>
</tr>
<tr>
<td>⚫</td>
<td>Transmission lost.</td>
</tr>
<tr>
<td>⚫</td>
<td>Transmission test. Appears when a vessel initiates a test of their distress signal device, and does not represent a true emergency.</td>
</tr>
<tr>
<td>⚫</td>
<td>Transmission test lost.</td>
</tr>
</tbody>
</table>

**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 (EPIRB) 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 Menu

NOTE: Not all settings apply to all charts. Some options require premium maps or connected accessories, such as radar.

NOTE: The menus may contain some settings that are not supported by your installed charts or your present location. If you make changes to those settings, the changes will not impact the chart view.

From a chart, select Menu.

Layers: Adjusts the appearance of the different items on the charts (Chart Layers, page 12).

Quickdraw Contours: Turns on bottom contour drawing, and allows you to create fishing map labels (Garmin Quickdraw Contours Mapping, page 14).

Settings: Adjusts the chart settings (Chart Settings, page 13).

Edit Overlays: Adjusts the data shown on the screen (Customizing the Data Overlays, page 4).

Chart Layers

You can turn on and off chart layers and customize features of the charts. Each setting is specific to the chart or chart view being used.

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

NOTE: The menus may contain some settings that are not supported by your installed charts or your present location. If you make changes to those settings, the changes will not impact the chart view.

From a chart, select Menu > Layers.

Chart: Shows and hides chart-related items (Chart Layer Settings, page 12).

My Vessel: Shows and hides items relating to the boat (My Vessel Layer Settings, page 12).

User Data: Shows and hides user data, such as waypoints, boundaries, and tracks, and opens user data lists (User Data Layer Settings, page 12).

Other Vessels: Adjust how other vessels are shown (Other Vessels Layer Settings, page 13).

Water: Shows and hides depth items (Water Layer Settings, page 13).

Quickdraw Contours: Shows and hides Garmin Quickdraw Contours data (Garmin Quickdraw Contours Settings, page 15).

Weather: Shows and hides weather-related items (Weather Layer Settings, page 13).

Chart Layer Settings

From a chart, select Menu > Layers > Chart.

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 10).

NOTE: This setting must be enabled to view Standard Mapping charts.

Tides & Currents: Shows current station indicators and tide station indicators on the chart (Showing Tides and Current Indicators, page 9) and enables the tides and current slider, which sets the time for which tides and currents are reported on the map.

Land POIs: Shows points of interest on land.

Navaid: Shows navigational aids, such as ATONs and flashing lights, on the chart. Allows you to select NOAA or IALA navaid type.

Service Points: Shows locations for marine services.

Depth: Adjusts the items on the depth layer (Depth Layer Settings, page 12).

Restricted Areas: Shows information about restricted areas on the chart.

Photo Points: Shows camera icons for aerial photos (Viewing Aerial Photos of Landmarks, page 10).

Depth Layer Settings

From a chart, select Menu > Layers > Chart > Depth.

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

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

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.

Fishing Contours: Sets the zoom level for a detailed view of bottom contours and depth soundings and simplifies map presentation for optimal use while fishing.

My Vessel Layer Settings

From a chart, select Menu > Layers > My Vessel.

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 (Setting the Heading Line and Angle Markers, page 23).

Active Tracks: Shows the active track on the chart and opens the Active Track Options menu.

Wind Rose: Shows a visual representation of the wind angle or direction provided by the connected wind sensor and sets the wind source.

Compass Rose: Shows a compass rose around your boat, indicating compass direction oriented to the heading of the boat. Enabling this option disables the Wind Rose option.

Vessel Icon: Sets the icon that represents your present location on the chart.

Laylines Settings

To use the laylines features, you must connect a wind sensor to the chartplotter.

When in sailing mode (Setting the Vessel Type, page 4), you can display laylines on the navigation chart. Laylines can be very helpful when racing.

From the navigation chart, select Menu > Laylines.

Display: Sets how the laylines and vessel appear on the chart, and sets the length of the laylines.

Sailing Ang.: Allows you to select how the device calculates laylines. The Actual option calculates the laylines using the measured wind angle from the wind sensor. The Manual option calculates the laylines using manually entered windward and leeward angles.

Windward Ang.: Allows you to set a layline based on the windward sailing angle.

Leeward Ang.: Allows you to set a layline based on the leeward sailing angle.

Tide Correction: Corrects the laylines based on the tide.

Layline Filter: Filters the layline data based on the time interval entered. For a smoother layline that filters out some of the changes in the boat's heading or true wind angle, enter a higher number. For laylines that display a higher sensitivity to changes in the boat's heading or true wind angle, enter a lower number.

User Data Layer Settings

You can show user data, such as waypoints, boundaries, and tracks, on the charts.

From a chart, select Menu > Layers > User Data.
**Waypoints:** Shows waypoints on the chart and opens the list of waypoints.

**Boundaries:** Shows boundaries on the chart and opens the list of boundaries.

**Tracks:** Shows tracks on the chart.

**Other Vessels Layer Settings**

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

From a chart, select **Menu > Layers > Other Vessels.**

**DSC:** Shows how DSC vessels and trails appear on the chart, and shows the DSC list.

**AIS:** Shows how AIS vessels and trails appear on the chart, and shows the AIS list.

**Details:** Shows other vessel details on the chart.

**Proj. Heading:** Sets the projected heading time for AIS-activated and MARPA-tagged vessels.

**Collision Alarm:** Sets the safe-zone collision alarm (**Setting the Safe-Zone Collision Alarm, page 11**).

**Water Layer Settings**

From a chart, select **Menu > Layers > Water.**

**NOTE:** The menu may contain some settings that are not supported by your installed charts or your present location. If you make changes to those settings, the changes will not impact the chart view.

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

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

**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.

**Fishing Contours:** Sets the zoom level for a detailed view of bottom contours and depth soundings and simplifies map presentation for optimal use while fishing.

**Relief Shading:** Shows the gradient of the bottom with shading. This feature is available only with some premium maps.

**Sonar Imagery:** Shows sonar imagery to help show the density of the bottom. This feature is available only with some premium maps.

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

**Depth Range Shading**

You can set color ranges on your map to show the water depths where your target fish are currently biting. You can set deeper ranges to monitor how quickly the bottom depth changes within a specific depth range. You can create up to ten depth ranges. For inland fishing, a maximum of five depth ranges can help reduce map clutter. The depth ranges apply to all charts and all bodies of water.

Some Garmin LakeVu™ and premium supplemental charts have multiple depth range shading by default.

**Weather Layer Settings**

From the Navigation or Fishing chart, select **Menu > Layers > Chart > Weather > Weather.**

**Observed Layers:** Sets which observed weather items are shown. Observed weather is the present weather condition that are visible now.

**Forecast Layers:** Sets which forecasted weather items are shown.

**Layer Mode:** Shows forecasted or observed weather information.

**Loop:** Shows a loop of forecasted or observed weather information.

**Legend:** Shows a legend of the weather conditions increasing from left to right.

**Weather Subscription:** Shows weather subscription information.

**Restore Defaults:** Resets the weather settings to factory default values.

**Edit Overlays:** Adjusts the data shown on the screen (**Customizing the Data Overlays, page 4**).

**Radar Overlay Settings**

From the Navigation or Fishing chart, select **Menu > Layers > Radar > Radar.**

From a radar screen, select **Menu.**

**Radar To Standby:** Stops radar transmission.

**Gain:** Adjusts the gain (**Adjusting Gain on the Radar Screen Automatically, page 35**).

**Sea Clutter:** Adjusts the sea clutter (**Adjusting Gain on the Radar Screen Automatically, page 35**).

**Radar Options:** Opens the radar options menu (**Radar Options Menu, page 36**).

**Other Vessels:** Sets how other vessels are displayed on the radar view (**Other Vessels Layer Settings, page 13**).

**Radar Setup:** Opens the radar display settings (**Radar Setup Menu, page 37**).

**Edit Overlays:** Adjusts the data shown on the screen (**Customizing the Data Overlays, page 4**).

**Chart Settings**

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

From a chart, select **Menu > Settings.**

**Orientation:** Sets the perspective of the map.

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

**Chart Size:** Sets the visible size of the chart.

**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.

**Start Line:** Sets the starting line for the sailing race (**Setting the Starting Line, page 22**)

**Inset Map:** Shows a small map centered on your present location.
**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.

**Supported Maps**

To help you have a safe and enjoyable time on the water, Garmin devices only support official maps produced by Garmin or an approved third party producer.

You can purchase maps from Garmin. If you purchase maps from a seller other than Garmin, investigate the seller before purchasing. Be extra cautious with online sellers. If you have purchased an unsupported map, return it to the seller.

**Garmin Quickdraw Contours Mapping**

**WARNING**

The Garmin Quickdraw Contours mapping feature allows users to generate maps. Garmin makes no representations about the accuracy, reliability, completeness or timeliness of the maps generated by third parties. Any use or reliance on the maps generated by third parties is at your own risk.

The Garmin Quickdraw Contours mapping feature allows you to instantly create maps with contours and depth labels for any body of water.

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 GPS position, and a speed under 16 km/h (10 mph). A yellow circle indicates good depth and GPS position, and a speed between 16 and 32 km/h (10 and 20 mph). A red circle indicates poor depth or GPS position, and a speed above 32 km/h (20 mph).

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

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. It is estimated that you might be able to record about 1,500 hours of data onto a 2 GB memory card.

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 sonar depth, your GPS position, and a memory card with free space.

1. From a chart view, select **Menu > Quickdraw Contours > Start Recording**.
2. When recording is complete, select **Menu > Quickdraw Contours > 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. From the Navigation chart, select a location.
2. Select **Quickdraw Lbl.**.
3. Enter text for the label, and select **Done**.

**Garmin Quickdraw Community**

The Garmin Quickdraw Community is a free, public, online community that enables you to share your Garmin Quickdraw Contours maps with others. You can also download maps other users have created.

If your device has Wi-Fi technology, you can use the ActiveCaptain app to access the Garmin Quickdraw Community (Connecting to the Garmin Quickdraw Community with ActiveCaptain, page 14).

If your device does not have Wi-Fi technology, you can use the Garmin Connect™ website to access the Garmin Quickdraw Community (Connecting to the Garmin Quickdraw Community with Garmin Connect, page 15).

**Connecting to the Garmin Quickdraw Community with ActiveCaptain**

1. From your mobile device, open the ActiveCaptain app and connect to the GPSMAP device (Getting Started with the ActiveCaptain App, page 5).
2. From the app, select **Quickdraw Community**.

You can download contours from others in the community (Downloading Garmin Quickdraw Community Maps Using ActiveCaptain, page 14) and share the contours you have created (Sharing Your Garmin Quickdraw Contours Maps with the Garmin Quickdraw Community Using ActiveCaptain, page 15).

**Downloading Garmin Quickdraw Community Maps Using ActiveCaptain**

You can download Garmin Quickdraw Contours maps that other users have created and shared with the Garmin Quickdraw Community.

1. From the ActiveCaptain app on your mobile device, select **Quickdraw Community > Search for Contours**.
2. Use the map and search features to locate an area to download.

   The red dots represent Garmin Quickdraw Contours maps that have been shared for that area.
3. Select **Select Download Region**.
4. Drag the box to select the area to download.
5. Drag the corners to change the download area.
6. Select **Download Area**.

The next time you connect the ActiveCaptain app to the GPSMAP device, the downloaded contours are transferred to the device automatically.
Sharing Your Garmin Quickdraw Contours Maps with the Garmin Quickdraw Community Using ActiveCaptain

You can share Garmin Quickdraw Contours maps that you have created with others in the Garmin Quickdraw Community. When you share a contour map, only the contour map is shared. Your waypoints are not shared. When you set up your ActiveCaptain app, you may have selected to share your contours with the community automatically. If not, follow these steps to enable sharing.

From the ActiveCaptain app on your mobile device, select Sync with Plotter > Contribute to Community.

The next time you connect the ActiveCaptain app to the GPSMAP device, your contour maps are transferred to the community automatically.

Connecting to the Garmin Quickdraw Community with Garmin Connect

2. Select Getting Started > Quickdraw Community > Getting Started.
3. If you do not have a Garmin Connect account, create one.
4. Sign in to your Garmin Connect account.
5. Select Marine in the upper-right to open the Garmin Quickdraw widget.

TIP: Make sure you have a memory card in your computer to share Garmin Quickdraw Contours maps.

Sharing Your Garmin Quickdraw Contours Maps with the Garmin Quickdraw Community Using Garmin Connect

You can share Garmin Quickdraw Contours maps that you have created with others in the Garmin Quickdraw Community. When you share a contour map, only the contour map is shared. Your waypoints are not shared.

1. Insert a memory card into the card slot (Inserting Memory Cards, page 2).
2. Insert the memory card into your computer.
3. Access the Garmin Quickdraw Community (Connecting to the Garmin Quickdraw Community with Garmin Connect, page 15).
4. Select Share Your Contours.
5. Browse to your memory card, and select the /Garmin folder.
6. Open the Quickdraw folder, and select the file named ContoursLog.svy.

After the file is uploaded, delete the ContoursLog.svy file from your memory card to avoid issues with future uploads. Your data will not be lost.

Downloading Garmin Quickdraw Community Maps Using Garmin Connect

You can download Garmin Quickdraw Contours maps that other users have created and shared with the Garmin Quickdraw Community.

If your device does not have Wi-Fi technology, you can access the Garmin Quickdraw Community using the Garmin Connect website.

If your device has Wi-Fi technology, you should access the Garmin Quickdraw Community using the ActiveCaptain app (Connecting to the Garmin Quickdraw Community with ActiveCaptain, page 14).

1. Insert the memory card into your computer.
2. Access the Garmin Quickdraw Community (Connecting to the Garmin Quickdraw Community with Garmin Connect, page 15).
3. Select Search for Contours.

4. Use the map and search features to locate an area to download.
   The red dots represent Garmin Quickdraw Contours maps that have been shared for that region.
5. Select Select an Area to Download.
6. Drag the edges of the box to select the area to download.
7. Select Start Download.
8. Save the file to your memory card.
   TIP: If you cannot find the file, look in the "Downloads" folder. The browser may have saved the file there.
9. Remove the memory card from your computer.
10. Insert the memory card into the card slot (Inserting Memory Cards, page 2).

The chartplotter automatically recognizes the contours maps. The chartplotter may take a few minutes to load the maps.

Garmin Quickdraw Contours Settings

From a chart, select Menu > Quickdraw Contours > Settings.

Recording Offset: Sets the distance between the sonar depth and the contour recording depth. If the water level has changed since your last recording, adjust this setting so the recording depth is the same for both recordings.

For example, if the last time you recorded had a sonar depth of 3.1 m (10.5 ft.), and today’s sonar depth is 3.6 m (12 ft.), enter -0.5 m (-1.5 ft.) for the a Recording Offset value.

User Display Offset: Sets differences in contour depths and depth labels on your own contours maps to compensate for changes in the water level of a body of water, or for depth errors in recorded maps.

Comm. Display Offset: Sets differences in contour depths and depth labels on the community contours maps 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 this setting is turned on, the colors indicate the quality of the recording. When this setting is turned off, the contour areas use standard map colors.

Green indicates good depth and GPS position, and a speed under 16 km/h (10 mph). Yellow indicates good depth and GPS position, and a speed between 16 and 32 km/h (10 and 20 mph). Red indicates poor depth or GPS position, and a speed above 32 km/h (20 mph).

Depth Shading: Specifies the minimum and maximum depths of a depth range and a color for that depth range.

Navigation with a Chartplotter

⚠️ WARNING

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the nav aids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

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.
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.

**NOTE:** Some chart views are 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 Auto Guidance.

**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.

**Auto Guidance:** Uses the specified information about your vessel and chart data to determine the best path to your destination. This option is available only when using a compatible premium chart in a compatible chartplotter. It provides a turn-by-turn navigation path to the destination, avoiding land and other obstacles (*Auto Guidance*, page 19).

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

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

### Basic Navigation Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do I make the chartplotter point me in the direction in which I want to go (bearing)?</td>
<td>Navigate using Go To (<em>Setting and Following a Direct Course Using Go To</em>, page 16).</td>
</tr>
<tr>
<td>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?</td>
<td>Build a single-leg route and navigate it using Route To (<em>Creating and Navigating a Route From Your Present Location</em>, page 17).</td>
</tr>
<tr>
<td>How do I make the device guide me to a location while avoiding charted obstacles?</td>
<td>Build a multi-leg route and navigate it using Route To (<em>Creating and Navigating a Route From Your Present Location</em>, page 17).</td>
</tr>
<tr>
<td>How do I make the device steer my automatic pilot?</td>
<td>Navigate using Route To (<em>Creating and Navigating a Route From Your Present Location</em>, page 17).</td>
</tr>
<tr>
<td>Can the device create a path for me?</td>
<td>If you have premium maps that support Auto Guidance and are in an area covered by Auto Guidance, navigate using Auto Guidance (<em>Setting and Following an Auto Guidance Path</em>, page 19).</td>
</tr>
</tbody>
</table>

### 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 *Info > Services > 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 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 *Info > Services*.
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 Next Page or Previous Page to view additional information or to show the location on a chart.

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

**WARNING**

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 16).
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).

   You can also use the orange course-to-steer arrow, which shows a proposed turning radius to return your boat to the course.

**WARNING**

Review the path for obstacles before negotiating the turn. If the path is unsafe, reduce your boat speed and determine a safe path back to the course.

**Stopping Navigation**

While navigating, from an applicable chart, select an option:
- Select *Menu > Stop Navigation*.
- When navigating with Auto Guidance, select *Menu > Navigation Options > Stop Navigation*.
- Select .
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 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 Use Chart, select the location, and select Select.
   - To create the waypoint using a range (distance) and bearing, select Enter Range/Bearing, and enter the information.

Marking an SOS Location

You can mark an SOS or MOB (man overboard) location.
1. Hold SOS for one second.
2. Select the SOS type.
3. If necessary, select OK to navigate to the man overboard location.

If you selected OK, the chartplotter sets a direct course back to the location. If you selected another type of SOS, the call details are sent to the VHF radio. You must send the call using the radio.

Projecting a Waypoint

You can create a new waypoint by projecting the distance and bearing from a different location. This can be helpful when creating sail racing start and finish lines.
1. Select Waypoints > New Waypoint > Enter Range/Bearing.
2. If necessary, select a reference point on the chart.
3. Select Enter Range/Bearing.
4. Enter the distance, and select Done.
5. Enter the bearing, and select Done.

Viewing a List of all Waypoints

Select Info > User Data > Waypoints.

Editing a Saved Waypoint

1. Select Info > User Data > Waypoints.
2. Select a 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.

Moving a Saved Waypoint

1. Select Waypoints.
2. Select a waypoint.
4. Indicate a new location for the waypoint:
   - To move the waypoint while using the chart, select Use Chart, select a new location on the chart, and select Move.
   - To move the waypoint using coordinates, select Enter Coordinates, and enter the new coordinates.
   - To move the waypoint using a range (distance) and bearing, select Enter Range/Bearing, and enter the information.

Browsing for and Navigating to a Saved Waypoint

WARNING

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the navaids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

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 Info > 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 Auto Guidance.
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 Info > User Data > Waypoints.
2. Select a waypoint or an MOB.

Deleting All Waypoints

Select Info > User Data > Delete User Data > Waypoints > All.

Routes

A route is a path from one location to one or more destinations.

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 method does not save the route or the waypoint data.
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 to add 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 Done.
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. You can add up to 250 waypoints, or turns, to one route.
1 Select Info > User Data > Routes & Auto Guidance Paths > New > Route Using Chart.
2 Select the starting location of the route.
3 Select Add Turn.
4 Select the location of the next turn on the chart.
5 Select Add Turn.
The chartplotter marks the location of the turn with a waypoint.
6 If necessary, repeat steps 4 and 5 to add more turns.
7 Select the final destination.

Viewing a List of Routes and Auto Guidance Paths
1 Select Info > User Data > Routes & Auto Guidance Paths.
2 If necessary, select Filter to see routes only or Auto Guidance paths only.

Editing a Saved Route
You can change the name of a route or change the turns the route contains.
1 Select Info > User Data > Routes & Auto Guidance Paths.
2 Select a route.
3 Select Review > 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 > Use 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 Info > User Data > Routes & Auto Guidance Paths.
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 Info > User Data > Routes & Auto Guidance Paths.
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.
6 If necessary, select Done.
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.
7 Review the course indicated by the magenta line.
8 Follow the magenta line along each leg in the route, steering to avoid land, shallow water, and other obstacles.
9 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).

Initiating a Search Pattern
You can initiate a search pattern to search an area. Different patterns are better suited for different search situations.
1 Select Info > User Data > Routes & Auto Guidance Paths.
2 Select a pattern:
   • Select Sector Search when the location of the object is fairly known, the search area is small, and an intensive search is needed.
   • Select Expanding Square when the location of the object is somewhat doubtful, the search area is small, and an intensive search is needed.
   • Select Creeping/Parallel Line when the location of the object is approximate, the search area is small, and a consistent search is needed.
3 Enter the search parameters.
4 Select Done.
5 If necessary, select Engage.

Deleting a Saved Route
1 Select Info > User Data > Routes & Auto Guidance Paths.
2 Select a route.
3 Select Review > Delete.

Deleting All Saved Routes
Select Info > User Data > Delete User Data > Routes & Auto Guidance Paths.

Auto Guidance

⚠️ WARNING
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.

All route and navigation lines displayed on the chartplotter are only intended to provide general route guidance or to identify proper channels, and are not intended to be precisely followed. Always defer to the navaids and conditions on the water when navigating to avoid groundings or hazards that could result in vessel damage, personal injury, or death.

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 16).
2 Select Navigate To > Auto Guidance.
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 and Saving an Auto Guidance Path
1 Select Info > User Data > Routes & Auto Guidance Paths > New > Auto Guidance.
2 Select a starting point, and select Next.
3 Select a destination, and select Next.
4 Select an option:
   - To view a hazard and adjust the path near a hazard, select Hazard Review.
   - To adjust the path, select Adjust Path, and follow the on-screen instructions.
   - To delete the path, select Cancel Auto Guidance.
   - To save the path, select Done.

Adjusting a Saved Auto Guidance Path
1 Select Info > User Data > Routes & Auto Guidance Paths.
2 Select a path, and select Review > Edit > Adjust Path.
   TIP: When navigating an Auto Guidance path, select the path on the navigation chart, and select Adjust Path.
3 Select a location on the path.
4 Drag the point to a new location.
5 If necessary, select a point, and select Remove.
6 Select Done.

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

Auto Guidance Path Configurations

⚠️ CAUTION
The Preferred Depth and Vertical Clearance settings influence how the chartplotter calculates an Auto Guidance path. If an area has an unknown water depth or an unknown obstacle height, the Auto Guidance path is not calculated in that area. If an area at the beginning or the end of an Auto Guidance path is shallower than the Preferred Depth or lower than the Vertical Clearance settings, the Auto Guidance path may not be calculated in that area, depending on the map data. On the chart, the course through those areas appears as a gray line or a magenta and gray striped line. When your boat enters one of those areas, a warning message appears.

NOTE: Auto Guidance is available with premium charts, in some areas.
NOTE: Not all settings apply to all maps.
You can set the parameters the chartplotter uses when calculating an Auto Guidance path.

Preferred Depth: Sets the minimum water depth, based on chart depth data, that your boat can safely travel over.
   NOTE: The minimum water depth for the premium charts (made before 2016) is 3 feet. If you enter a value of less than 3 feet, the charts only use depths of 3 feet for Auto Guidance path calculations.

Vertical Clearance: Sets the minimum height of a bridge or obstacle, based on chart data, that your boat can safely travel under.

Shoreline Distance: Sets how close to the shore you want the Auto Guidance path to be placed. The Auto Guidance path 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 path using one or more familiar destinations that require navigation through a narrow waterway (Adjusting the Distance from Shore, page 19).

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 > Preferences > Navigation > Auto Guidance > Shoreline Distance > Normal.
3 Select a destination that you have navigated to previously.
4 Select Navigate To > Auto Guidance.
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 > Navigation Options > Stop Navigation, and proceed to step 10.
   • If the Auto Guidance line is too close to known obstacles, select Settings > Preferences > Navigation > Auto Guidance > Shoreline Distance > Far.
   • If the turns in the Auto Guidance line are too wide, select Settings > Preferences > 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 > Navigation Options > Stop Navigation, and proceed to step 10.
   • If the Auto Guidance line is too close to known obstacles, select Settings > Preferences > Navigation > Auto Guidance > Shoreline Distance > Farthest.
   • If the turns in the Auto Guidance line are too wide, select Settings > Preferences > 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.

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

Showing Tracks
1 From a chart, select Menu > Layers > User Data > Tracks.
2 Select the tracks to display.
   A trailing line on the chart indicates your track.

Setting the Color of the Active Track
1 Select Info > 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 Info > User Data > Tracks > Save Active Track.
2 Select an option:
   • Select the time the active track began.
   • Select Entire Log.

3 Select Save.

Viewing a List of Saved Tracks
Select Info > User Data > Tracks > Saved Tracks.

Editing a Saved Track
1 Select Info > User Data > Tracks > Saved Tracks.
2 Select a track.
3 Select Review > 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 Info > User Data > Tracks > Saved Tracks.
2 Select a track.
3 Select Select > Edit Track > Save as 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 20).
1 Select Info > 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 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 Info > User Data > Tracks > Saved Tracks.
2 Select a track.
3 Select Delete.

Deleting All Saved Tracks
Select Info > User Data > Delete User Data > Saved Tracks.

Retracing the Active Track
The track currently being recorded is called the active track.
1 Select Info > 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 Info > 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 Info > 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 Info > User Data > Tracks > Active Track Options > Interval.
2. Select an option:
   - To record the track based on a distance between points, select Interval > Distance > Change, and enter the distance.
   - To record the track based on a time interval, select Interval > Time > Change, and enter the time interval.
   - To record the track plot based on a variance from your course, select Interval > Resolution > Change, and enter the maximum error allowed from the true course before recording a track point. This is the recommended recording option.

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 convert saved tracks and 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. You can add the active boundary data to the data fields on the chart.

Creating a Boundary
2. Select a boundary shape.
3. Follow the on-screen instructions.

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 18).

2. Select a route.
3. Select Review > 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 20).

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

Editing a Boundary
1. Select Info > User Data > Boundaries.
2. Select a boundary.
3. Select Review.
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.

Linking a Boundary to a SmartMode Layout
You can link a boundary to a SmartMode layout to automatically open the layout when entering or exiting the boundary. For example, you can set a boundary around your marina, and automatically open the Docking layout when you approach the marina.

1. Select Info > User Data > Boundaries.
2. Select a boundary.
3. Select Review > Link SmartMode™ > SmartMode™.
4. Select Enter, and select a layout.
5. Select Exit, and select a layout.

Setting a Boundary Alarm
Boundary alarms alert you when you are within a specified distance of a set boundary. This can be helpful when attempting to avoid certain areas or when you should be very alert in certain areas, such as shipping lanes.

1. Select Info > User Data > Boundaries.
2. Select a boundary.
4. Select an option:
   - To set an alarm for when your boat is a specified distance from the boundary, select Warning Dist., enter a distance, and select Done.
   - To set an alarm when you enter or exit the boundary, select Area to show Entering or Exiting.

Disabling all Boundary Alarms
Select Info > User Data > Boundaries > Alarms.

Deleting a Boundary
1. Select Info > User Data > Boundaries.
2. Select a boundary.

Deleting All Saved Waypoints, Tracks, Routes, and Boundaries
Select Info > User Data > Delete User Data > Delete All User Data > OK.

Sailing Features

Setting the Vessel Type
You can select your boat type to configure the chartplotter settings and to use features customized for your boat type.

1. Select Settings > My Vessel > Vessel Type.
2. Select an option.

Sail Racing
You can use the device to increase the likelihood that your boat will cross the start line of a race exactly when the race begins. When you synchronize the race timer with the official race countdown timer, you are alerted at one-minute intervals as the race start approaches. When you combine the race timer with the virtual start line, the device measures your speed, bearing, and remaining time on the countdown timer. The device uses this data to indicate whether your boat will cross the start line before, after, or at the correct time to start the race.

Starting Line Guidance
Sailing start line guidance is a visual representation of the information you need to cross the start line at the optimal time and speed.

After you set the starboard and port start line pins, and the target speed and time, and after you start the race timer, a predictor line appears. The predictor line extends from your current location toward the start line and the laylines that extend from each pin.
The end point and color of the predictor line indicate where the boat will be when the timer expires, based on your current boat speed.

When the end point is before the start line, the line is white. This indicates the boat must increase speed to reach the start line on time.

When the end point is past the start line, the line is red. This indicates the boat must reduce speed to avoid a penalty for reaching the start line before the timer expires.

When the end point is on the start line, the line is white. This indicates the boat is moving at an optimal speed to reach the start line when the timer expires.

By default, the start line guidance window and the race timer window appear in the Sail Racing combination screen.

**Setting the Starting Line**

The start line guidance window is added to the Sail Racing combination screen by default.

1. From the Sail Racing combination screen, select **Menu > Start Line Guidance > Start Line**.
2. Select an option:
   - To mark the port and starboard starting line marks as you sail past them, select **Ping Marks**.
   - To mark the port and starboard starting line marks by entering their coordinates, select **Enter Coordinates**.
   - To switch the position of the port and starboard marks after you have set them, select **Swap Port & Starbd**.

**Using the Starting Line Guidance**

You can use the starting line guidance feature to help get you cross the start line, at the optimal speed during a sailing race.

1. Mark the starting line **Setting the Starting Line, page 22**.
2. From the Sail Racing combination screen, select **Menu > Start Line Guidance > Target Line**, and select your target speed when crossing the starting line.
3. Select **Target Time**, and select the target time to cross the starting line.
4. Select **Back**.
5. Start the racing timer **Starting the Race Timer, page 22**.

**Starting the Race Timer**

The race timer is added to the Sail Racing combination screen by default.

1. From the Sail Racing combination screen, select **Start**.
   
   **NOTE:** You can also access this from the Sailing SmartMode screen and the navigation chart.
2. When necessary, select **Sync** to synchronize with the official race timer.

**Stopping the Race Timer**

From the Sail Racing combination screen, select **Stop**.

**Setting the Distance between the Bow and the GPS Antenna**

You can enter the distance between the bow of your boat and the location of your GPS antenna. This helps ensure the bow of your boat crosses the starting line at the precise start time.

1. From a navigation chart, select **Menu > Sailing > Start Line > GPS Bow Offset**.
2. Enter the distance.
3. Select **Done**.

**Laylines Settings**

To use the laylines features, you must connect a wind sensor to the chartplotter.
When in sailing mode (**Setting the Vessel Type, page 4**), you can display laylines on the navigation chart. Laylines can be very helpful when racing.

From the navigation chart, select **Menu > Laylines**.

**Display:** Sets how the laylines and vessel appear on the chart, and sets the length of the laylines.

**Sailing Ang.:** Allows you to select how the device calculates laylines. The Actual option calculates the laylines using the measured wind angle from the wind sensor. The Manual option calculates the laylines using manually entered windward and leeward angles.

**Windward Ang.:** Allows you to set a layline based on the windward sailing angle.

**Leeward Ang.:** Allows you to set a layline based on the leeward sailing angle.

**Tide Correction:** Corrects the laylines based on the tide.

**Layline Filter:** Filters the layline data based on the time interval entered. For a smoother layline that filters out some of the changes in the boat's heading or true wind angle, enter a higher number. For laylines that display a higher sensitivity to changes in the boat's heading or true wind angle, enter a lower number.

**Setting the Keel Offset**

You can enter a keel offset to compensate the water depth reading for the transducer installation location. This allows you to view the depth of the water below the keel or the true depth of the water, depending on your needs.

If you want to know the water depth below the keel or the lowest point of your boat and the transducer is installed at the water line or anywhere above the end of the keel, measure the distance from the transducer location to the keel of the boat.

If you want to know the true water depth and the transducer is installed below the water line, measure the distance from the bottom of the transducer up to the water line.

**NOTE:** This option is only available when you have valid depth data.

1. Measure the distance:
   - If the transducer is installed at the water line ① or anywhere above the end of the keel, measure the distance from the transducer location to the keel of the boat. Enter this value as a positive number.
   - If the transducer is installed at the bottom of the keel ② and you want to know the true depth of the water, measure the distance from the transducer to the water line. Enter this value in as a negative number.
2 Complete an action:
• If the transducer is connected to the chartplotter or a sonar module, select Settings > My Vessel > Depth and Anchoring > Keel Offset.
• If the transducer is connected to the NMEA 2000 network, select Settings > Communications > NMEA 2000 Setup > Device List, select the transducer, and select Review > Keel Offset.

3 Select if the transducer is installed at the water line, or select if the transducer is installed at the bottom of the keel.

4 Enter the distance measured in step 1.

Sailboat Autopilot Operation

⚠️ **CAUTION**

When engaged, the autopilot controls only the rudder. You and your crew remain responsible for the sails while the autopilot is engaged.

In addition to heading hold, you can use the autopilot to maintain a wind hold. You can also use the autopilot to control the rudder while tacking and gybing.

**Wind Hold**

You can set the autopilot to maintain a specific bearing relative to the current wind angle. Your device must be connected to a NMEA 2000 or NMEA 0183 compatible wind sensor to perform a wind hold or a wind-based tack or gybe.

**Setting the Wind Hold Type**

Before you can enable the wind hold type, you must connect a NMEA 2000 or NMEA 0183 wind sensor to the autopilot.

For advanced autopilot configuration, see the installation instructions included with your autopilot.

1 From the autopilot screen, select Menu > Autopilot Setup > Wind Hold Type.
2 Select Apparent or True.

**Engaging Wind Hold**

Before you can enable the wind hold type, you must connect a NMEA 2000 or NMEA 0183 wind sensor to the autopilot.

When the autopilot is in standby mode, select Wind Hold.

**Engaging Wind Hold from Heading Hold**

Before you can enable the wind hold type, you must connect a NMEA 2000 or NMEA 0183 wind sensor to the autopilot.

With heading hold engaged, select Menu > Wind Hold.

**Adjusting the Wind Hold Angle with the Autopilot**

You can adjust the wind hold angle on the autopilot when wind hold is engaged.
• To adjust the wind hold angle in increments of 1°, select or .
• To adjust the wind hold angle in increments of 10°, hold or .

**Tack and Gybe**

You can set the autopilot to perform a tack or gybe while heading hold or wind hold is engaged.

**Tacking and Gybing from Heading Hold**

1 Engage heading hold (Engaging the Autopilot, page 38).
2 Select Menu.
3 Select an option.
   The autopilot steers your boat through a tack or gybe.

**Tacking and Gybing from Wind Hold**

Before you can engage wind hold, you must have a wind sensor installed.

1 Engage wind hold (Engaging Wind Hold, page 23).
2 Select Menu.
3 Select an option.
   The autopilot steers your boat through a tack or gybe, and information about the progress of the tack or gybe appears on the screen.

**Setting a Tack and Gybe Delay**

The tack and gybe delay allows you to delay steering a tack and gybe after you initiate the maneuver.

1 From the autopilot screen, select Menu > Autopilot Setup > Sailing Setup > Tack Delay.
2 Select the length of the delay.
3 If necessary, select Done.

**Enabling the Gybe Inhibitor**

**NOTE:** The gybe inhibitor does not prevent you from manually performing a gybe using the helm or step steering.

The gybe inhibitor prevents the autopilot from performing a gybe.

1 From the autopilot screen, select Menu > Autopilot Setup > Sailing Setup > Gybe Inhibitor.
2 Select Enabled.

**Adjusting the Autopilot Response**

When in sailboat mode, the Response setting allows you to adjust the rudder gain quickly to account for varying wind conditions.

1 From the autopilot screen, select Menu > Response.
2 Adjust the rudder response.
   If you need the rudder to be more responsive and move quicker, increase the value. If the rudder is moving too much, decrease the value.

**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 relative position from the heading or course over ground, which are helpful for casting or finding reference points.

**Setting the 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 relative position from the heading or course over ground, which are helpful for casting or finding reference points.

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, select Menu > Layers > My Vessel > Heading Line.
2 Angle Markers
3 If necessary, select Source, and select an option:
   • To automatically use the available source, select Auto.
   • To use the GPS antenna heading for COG, select GPS Heading (COG).
   • To use data from a connected heading sensor, select North Reference.
   • 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.

4 Select Display, and select an option:
   • Select Distance > Distance, and enter the length of the line shown on the chart.
Sonar Fishfinder

When properly connected to a compatible transducer, your chartplotter can be used as a fishfinder. For more information about which transducer is best for your needs, go to garmin.com/transducers.

Different sonar views can help you view the fish in the area. The sonar views available vary depending on the type of transducer and sounder module connected to the chartplotter. For example, you can view certain Panoptix™ sonar screens only if you have a compatible Panoptix 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.

If you do not see an arrangement of sonar views to suit your needs, you can create a custom combination screen (Creating a New Combination Page, page 4) or a SmartMode layout (Adding a SmartMode Layout, page 3).

Stopping the Transmission of Sonar Signals

- To disable the active sonar, from the sonar screen, select Menu > Transmit.
- To disable all sonar transmissions, press , and select Disable All Sonar Trans.

Changing the Sonar View

1. From a combination screen or SmartMode layout with sonar, select the window to change.
2. Select Menu > Change Sonar.
3. Select a sonar view.

Traditional Sonar View

There are several full-screen views available, depending on the transducer that is connected.

The full-screen Traditional sonar view shows 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.

### 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.

Garmin ClearVü Sonar View

**NOTE:** To receive Garmin ClearVü scanning sonar, you need a compatible chartplotter or fishfinder and a compatible transducer. For information about compatible transducers, go to garmin.com/transducers.

Garmin ClearVü high-frequency sonar provides a detailed picture of the fishing environment around the boat in a detailed representation of structures the boat is passing over.

Traditional transducers emit a conical beam. The Garmin ClearVü scanning sonar technology emits two narrow beams, similar to the shape of the beam in a copying machine. These beams provide a clearer, picture-like image of what is beneath the boat.

### SideVü Sonar View

**NOTE:** Not all models provide built-in SideVü sonar support. If your model does not provide built-in SideVü sonar, you need a compatible sounder module and compatible SideVü transducer. If your model does provide built-in SideVü sonar, you need a compatible SideVü transducer.

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.

### Split-Frequency Sonar View

In the split-frequency sonar view, the two sides of the screen show a full-view graph of sonar data of different frequencies.

**NOTE:** The split-frequency sonar view requires the use of a dual-frequency transducer.
SideVü Scanning Technology
Instead of a more common conical beam, the SideVü transducer uses a flat beam to scan the water and bottom to the sides of your boat.

Measuring Distance on the Sonar Screen
You can measure the distance between two points on the SideVü sonar view.
1. From the SideVü sonar view, select Measure.
2. Select a location on the screen.
3. Select another location.
   A push pin appears on the screen at the selected location.
4. The distance and angle from the pin is listed in the upper-left corner.
TIP: To reset the pin and measure from the current location of the pin, select Set Reference.

Panoptix Sonar Views
To receive Panoptix sonar, you need a compatible transducer.
The Panoptix sonar views allow you to see all around the boat in real time. You can also watch your bait underwater and bait schools in front of or below your boat.
The LiveVü sonar views provide you a view of the live movement either in front of or below your boat. The screen updates very quickly, producing sonar views that look more like live video.
The RealVü 3D sonar views provide three-dimensional views of either what is in front of or below your boat. The screen updates with each sweep of the transducer.
To see all five Panoptix sonar views, you need one transducer to show the down views and a second transducer to show the forward views.
To access the Panoptix sonar views, select Sonar, and select a view.

LiveVü Down Sonar View
This sonar view shows a two-dimensional view of what is below the boat and can be used to see a bait ball and fish.

LiveVü Forward Sonar View
This sonar view shows a two-dimensional view of what is in front of the boat and can be used to see a bait ball and fish.

RealVü 3D Forward Sonar View
This sonar view shows a three-dimensional view of what is in front of the transducer. This view can be used when you are stationary and you need to see the bottom and the fish approaching the boat.
RealVü 3D Down Sonar View
This sonar view shows a three-dimensional view of what is below the transducer and can be used when you are stationary and want to see what is around your boat.

RealVü 3D Historical Sonar View
This sonar view provides a three-dimensional view of what is behind your boat as you are moving and shows the entire water column in 3D, from the bottom to the top of the water. This view is used for finding fish.

Panoptix LiveScope™ Sonar View
This sonar view shows a live view of what is in front of or below the boat and can be used to see fish and structures.

Perspective View
This sonar view shows a live view of what is around and ahead of your boat and can be used to see shorelines, fish, and structures. This view is best used in shallow water of 50 feet (15 meters) or less.

To see this sonar view, you must install a Panoptix LiveScope transducer on a Perspective Mode Mount (010-12970-00).

Selecting the Transducer Type
This chartplotter is compatible with a range of accessory transducers, including the Garmin ClearVü™ transducers, which are available at garmin.com/transducers.

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.

NOTE: Not all sonar modules support this feature.

1. Complete and action:
   - From a sonar view, select Menu > Sonar Setup > Installation > Transducers.
   - Select Settings > My Vessel > Transducers.

2. Select the transducer to change.

3. Select a transducer from the list.

4. Select Change Model.

Selecting a Sonar Source
This feature may not be available with all models.

When you are using more than one sonar data source for a particular sonar view, you can select the source to use for that sonar view. For example, if you have two sources for Garmin ClearVü, you can select the source to use from the Garmin ClearVü sonar view.
1 Open the sonar view for which you will change the source.
2 Select Menu > Sonar Setup > Source.
3 Select the source for this sonar view.

Renaming a Sonar Source
You can rename a sonar source to easily identify that source. For example, you use "Bow" as the name of the transducer on the bow of your boat.

To rename a source, you must be in the applicable sonar view for the source. For example, to rename the Garmin ClearVü sonar source, you must open the Garmin ClearVü sonar view.

1 From the sonar view, select Menu > Sonar Setup > Source > Rename Sources.
2 Enter the name.

Creating a Waypoint on the Sonar Screen
1 From a sonar view, drag the screen or select □.
2 Select a location.
3 Select Q.
4 If necessary, edit the waypoint information.

Pausing the Sonar Display
From a sonar view, select □.

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, drag the screen to the right.
2 Select Back to exit history.

Sonar Sharing
You can view the sonar data from all compatible sources on the Garmin Marine Network. You can view sonar data from a compatible external sonar module, such as a GCV™ sonar module. In addition, you can view the sonar data from other chartplotters that have a built-in sonar module.

Each chartplotter on the network can display sonar data from every compatible sonar module and transducer on the network, no matter where the chartplotters and transducers are mounted on your boat. For example, from one GPSMAP 7410xsv device mounted at the back of the boat, you can view the sonar data from another GPSMAP device and Garmin ClearVü transducer mounted at the front of your boat.

When sharing sonar data, the values of some sonar settings, such as Range and Gain, are synchronized across the devices on the network. The values of other sonar settings, such as the Appearance settings, are not synchronized and should be configured on each individual device. In addition, the scroll rates of the various traditional and Garmin ClearVü sonar views are synchronized to make the split views more cohesive.

NOTE: Using multiple transducers simultaneously can create cross talk, which can be removed by adjusting the Interference sonar setting.

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 Garmin ClearVü 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 Garmin ClearVü and SideVü/ClearVü 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 Garmin ClearVü or SideVü sonar view, select Contrast.
   • While in a Panoptix LiveVü sonar view, select Color Gain.
   • While in another sonar view, select Sonar Setup > Appearance > 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.

Sonar Recordings
Recording the Sonar Display
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. An individual recording automatically ends after it reaches 4 GB in size. You can record sonar data 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 27).
   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 Review > 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.

Traditional, Garmin ClearVü, and SideVü Sonar Setup

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

NOTE: These settings do not apply to Panoptix transducers.

From a sonar view, select Menu > Sonar Setup.

Scroll Speed: Sets the rate at which the sonar scrolls from right to left (Setting the Scroll Speed, page 28).

In shallow water, you can select a slower scroll speed to extend the length of time the information is displayed on screen. In deeper water, you can select a faster scroll speed. Automatic scroll speed adjusts the scrolling speed to the speed the boat is traveling.

Noise Reject: Reduces the interference and the amount of clutter shown on the sonar screen (Sonar Noise Rejection Settings, page 28).

Appearance: Configures the appearance of the sonar screen (Sonar Appearance Settings, page 29).

Alarms: Sets sonar alarms (Sonar Alarms, page 29).

Advanced: Configures various sonar display and data source settings (Advanced Sonar Settings, page 29). Not applicable to Garmin ClearVü or SideVü sonar views.

Installation: Configures the transducer (Traditional, Garmin ClearVü, and SideVü Transducer Installation Settings, page 29).

Setting the Zoom Level on the Sonar Screen

1 From a sonar view, select Menu > Zoom > [Mode].

2 Select an option:

• To set the depth and zoom automatically, select Auto.

If necessary, select Set Zoom to modify the zoom setting. 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 range of the magnified area manually, select Manual.

If necessary, select Set Zoom to modify the zoom setting. 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 magnify one particular area of the screen, select Magnify.

If necessary, select Magnify to increase or decrease the magnification level.

TIP: You can drag the magnification box to a new location on the screen.

• To zoom in on the sonar data from the bottom depth, select Bottom Lock.

If necessary, select Span to adjust the depth and placement of the bottom lock area.

To cancel the zoom, deselect the Zoom option.

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 until there is no additional detail to show, at which point it starts stretching out the existing detail. This can be useful while moving or trolling, or when you are in very deep water where the sonar is pinging very slowly. A lower scroll speed displays sonar information on the screen longer.

For most situations, the Default setting provides a good balance between a quickly scrolling image and less distorted targets.

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 Garmin ClearVü or SideVü sonar views or searching for structure, it is recommend to use the Auto setting.

• To scroll faster, select Up.

• To scroll more slowly, select Down.

Adjusting the Range of the Depth or Width Scale

You can adjust the range of the depth scale traditional and Garmin ClearVü sonar views and the range of the wide 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.

Sonar Noise Rejection Settings

From a sonar view, select Menu > Sonar Setup > Noise Reject.

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.

Color Limit: Hides part of the color palette to help eliminate fields of weak clutter.

By setting the color limit to the color of the undesired returns, you can eliminate the display of undesired returns on the screen.

Smoothing: Removes noise that is not part of a normal sonar return, and adjusts the appearance of returns, such as the bottom.

When smoothing is set to high, more of the low-level noise remains than when using the interference control, but the noise is more subdued because of averaging. Smoothing can remove speckle from the bottom. Smoothing and interference work well together to eliminate low-level noise. You can adjust the interference and smoothing settings incrementally to remove undesirable noise from the display.

Surface Noise: Hides surface noise to help reduce clutter.

Wider beam widths (lower frequencies) can show more targets, but can generate more surface noise.
TVG: Adjusts the time varying gain, which can reduce noise. This control is best used for situations when you want to control and suppress clutter or noise near the water surface. It also allows for the display of targets near the surface that are otherwise hidden or masked by surface noise.

**Sonar Appearance Settings**

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

- **Color Scheme:** Sets the color scheme.
- **Color Gain:** Adjusts the intensity of colors. (Adjusting the Color Intensity, page 27).
- **A-Scope:** Displays a vertical flasher along the right side of the screen that shows instantaneously the range to targets along a scale.
- **Depth Line:** Shows a quick-reference depth line.
- **Edge:** Highlights the strongest signal from the bottom to help define the hardness or softness of the signal.
- **Fish Symbols:** Shows how the sonar interprets suspended targets.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🐟</td>
<td>Shows suspended targets as symbols and background sonar information.</td>
</tr>
<tr>
<td>🐟</td>
<td>Shows suspended targets as symbols with target depth information and background sonar information.</td>
</tr>
<tr>
<td>🐟</td>
<td>Shows suspended targets as symbols.</td>
</tr>
<tr>
<td>🐟</td>
<td>Shows suspended targets as symbols with target depth information.</td>
</tr>
</tbody>
</table>

- **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.

- **Echo Stretch:** Adjusts the size of the echoes on the screen to make it easier to see separate returns on the screen. When targets are difficult to see, echo stretch makes the target returns more pronounced and easier to see on the screen. If the echo stretch value is too high, the targets blend together. If the value is too low, the targets are small and more difficult to see.

You can use echo stretch and filter width together to obtain the preferable resolution and noise reduction. With echo stretch and filter width set to low, the display has the highest resolution, but is the most susceptible to noise. With echo stretch set to high and filter width set to low, the display has a lower resolution, but has wider targets. With echo stretch and filter width set to high, the display has the lowest resolution, but is the least susceptible to noise. It is not recommended to set echo stretch to low and filter width to high.

- **Overlay Data:** Sets the data shown on the sonar screen.

**Sonar Alarms**

**NOTE:** Not all options are available on all transducers.

From an applicable sonar view, select *Menu > Sonar Setup > Alarms.* You can also open the sonar alarms by selecting *Settings > 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.
- **FrontVü Alarm:** Sets an alarm to sound when the depth in front of the vessel is less than the specified value, which can help you avoid running aground. (Setting the FrontVü Depth Alarm, page 31). This alarm is available only with Panoptix FrontVü transducers.
- **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.
- **Contour:** Sets an alarm to sound when the transducer detects a suspended target within the specified depth from the surface of the water and from the bottom.

- **Fish**
  - **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.

- **Advanced Sonar Settings**

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

- **Shift:** Allows you to set the depth range on which the sonar is focused. This allows you to zoom in a higher resolution in the focused depth. When using shift, bottom tracking may not work effectively, because the sonar looks for data within the depth range of the focused area, which may not include the bottom. Using shift also can impact the scroll speed, because data outside the depth range of the focused area is not processed, which reduces the time required to receive and display the data. You can zoom in to the focused area, which enables you to evaluate target returns more closely at a higher resolution than just zooming alone.

  - **Btm. Srch. Limit:** Limits the search for the bottom to the depth selected when the Range setting is set to Auto. To minimize the length of time it takes to find the bottom, you can select a depth to limit the search for the bottom. The device will not search for the bottom deeper than the selected depth.

- **Traditional, Garmin ClearVü, and SideVü Transducer Installation Settings**

From a Traditional, Garmin ClearVü, or SideVü 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. This option is available on the Traditional sonar view only.

  - **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. This option is available on the Traditional sonar view only.
Sonar Frequencies

NOTE: The frequencies available depend on the chartplotter, sounder modules, and 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 can let the fisherman see more targets, but could also 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.

CHIRP frequencies allow you to sweep each pulse through a range of frequencies, resulting in better target separation in deep water. CHIRP can be used to distinctly identify targets, like individual fish in a school, and for deep water applications. CHIRP generally performs better than single frequency applications. Because some fish targets may show up better using a fixed frequency, you should consider your goals and water conditions when using CHIRP frequencies.

Some sonar black boxes and transducers also provide the ability to customize preset frequencies for each transducer element, which enables you to change the frequency quickly using the presets as the water and your goals change.

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

Selecting the Transducer Frequency

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

You can select which frequencies appear on the sonar screen.

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. This option is available on the Traditional sonar view only.

Flip Left/Right: Switches the SideVü view orientation from left to right. This option is available on the SideVü sonar view only.

Restore Sonar Defaults: Restores the sonar settings to the factory default values.

Allows you to change the transducer, view details about the transducers, and save details to a memory card.

Sonar Frequencies

NOTE: The frequencies available depend on the chartplotter, sounder modules, and 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 can let the fisherman see more targets, but could also 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.

CHIRP frequencies allow you to sweep each pulse through a range of frequencies, resulting in better target separation in deep water. CHIRP can be used to distinctly identify targets, like individual fish in a school, and for deep water applications. CHIRP generally performs better than single frequency applications. Because some fish targets may show up better using a fixed frequency, you should consider your goals and water conditions when using CHIRP frequencies.

Some sonar black boxes and transducers also provide the ability to customize preset frequencies for each transducer element, which enables you to change the frequency quickly using the presets as the water and your goals change.

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

Selecting the Transducer Frequency

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

You can select which frequencies appear on the sonar screen.

NOTE: Always be aware of local regulations on sonar frequencies. For example, to protect orca whale pods, you might be prohibited from using frequencies between 50 to 80 khz with in ½ mile of an orca whale pod. It is your responsibility to use the device in compliance with all applicable laws and ordinances.

1 From a sonar view, select Menu > Frequency.

2 Select Manage Frequencies > New Preset.

3 Enter a frequency.

Turning On the A-Scope

NOTE: This feature is available in the Traditional sonar views. The a-scope is a vertical flasher along the right side of the view, showing you what is underneath the transducer right now. You can use the a-scope to identify target returns that may be missed when the sonar data is quickly scrolling across the screen, such as when your boat is moving at high speeds. It can also be helpful for detecting fish that are close to the bottom.

The a-scope above shows fish returns 1 and a soft bottom return 2.

1 From a sonar view, select Menu > Sonar Setup > Appearance > A-Scope > On.

2 Select a hold time.

You can increase the hold time to increase the length of time the sonar returns are displayed.

Panoptix Sonar Setup

Zooming in a Panoptix LiveVü or LiveScope Sonar View

You can zoom in on the Panoptix LiveVü and LiveScope 2D sonar views.

NOTE: The scrolling history is hidden while the screen is in zoom mode.

1 From a Panoptix LiveVü or LiveScope 2D sonar view, spread two fingers to zoom in on the area.

An inset window 1 appears and displays a small version of the full-screen image. The boxed area 2 in the inset shows the location of the zoomed area.

2 If necessary, tap or drag within the inset window to view a different area of the full-screen view.

3 If necessary, spread two fingers apart to zoom in.

4 If necessary, pinch two fingers together to zoom out.

To exit zoom mode, select Back or pinch two fingers together to zoom out until the screen returns to a full-screen view.

Adjusting the RealVü Viewing Angle and Zoom Level

You can change the viewing angle of the RealVü sonar views. You can also zoom in and out of the view.

From a RealVü sonar view, select an option:

- To adjust the viewing angle diagonally, select .
- To adjust the viewing angle horizontally, select .
- To adjust the viewing angle vertically, select ▲.
- To adjust the viewing angle, swipe the screen in any direction.
- To zoom in, spread two fingers apart.
- To zoom out, pinch two fingers together.

Adjusting the RealVü Sweep Speed
You can update how quickly the transducer sweeps back and forth. A faster sweep rate creates a less detailed image, but the screen刷新es faster. A slower sweep rate creates a more detailed image, but the screen refreshes more slowly.

**NOTE:** This feature is not available for the RealVü 3D Historical sonar view.

1. From a RealVü sonar view, select Menu > Sweep Speed.
2. Select an option.

LiveVü Forward and FrontVü Sonar Menu
From the LiveVü Forward or FrontVü sonar view, select Menu.

**Gain:** Controls the level of detail and noise shown on the sonar screen.

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

**Depth Range:** Adjusts the range of the depth scale.

Allowing the device to adjust the range automatically keeps the bottom within the lower portion 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.

**Forward Range:** Adjusts the range of the forward scale.

Allowing the device to adjust the range automatically keeps the forward scale in relation to the depth. Manually adjusting the range enables you to view a specified range. The bottom can appear on the screen as long as it appears within the range you have set. Manually reducing this option can reduce the effectiveness of the FrontVü Alarm, reducing your reaction time to low depth readings.

**Transmit Angle:** Adjusts the focus of the transducer to the port or starboard side. This feature is available only with RealVü capable Panoptix transducers, such as the PS30, PS31, and PS60.

**Transmit:** Stops the active transducer from transmitting.

**FrontVü Alarm:** Sets an alarm to sound when the depth in front of the vessel is less than the specified value (Setting the FrontVü Depth Alarm, page 31). This is available only with Panoptix FrontVü transducers.

**Sonar Setup:** Adjusts the setup of the transducer and the appearance of the sonar returns.

**Edit Overlays:** Adjusts the data shown on the screen (Customizing the Data Overlays, page 4).

**Setting the LiveVü and FrontVü Transducer Transmit Angle**
This feature is available only with RealVü capable Panoptix transducers, such as the PS30, PS31, and PS60.

You can change the transducer transmit angle to aim the transducer at a particular area of interest. For example, you might aim the transducer to follow a bait ball or focus on a tree as you pass it.

1. From a LiveVü or FrontVü sonar view, select Menu > Transmit Angle.

2. Select an option.

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**Setting the FrontVü Depth Alarm**

**WARNING**

The FrontVü depth alarm is a tool for situational awareness only, and may not prevent groundings in all circumstances. It is the obligation of the vessel operator to ensure safe operation of the vessel.

This alarm is available only with Panoptix FrontVü transducers. You can set an alarm to sound when the depth is below a specified level. For best results, you should set the bow offset when using the front collision alarm (Setting the Bow Offset, page 32).

1. From the FrontVü sonar view, select Menu > FrontVü Alarm.
2. Select On.
3. Enter the depth at which the alarm is triggered, and select Done.

On the FrontVü screen, a depth line shows the depth at which the alarm is set. The line is green when you are in a safe depth. The line turns yellow when you are going faster than the forward range gives you time to react (10 seconds). It turns red and sounds an alarm when the system detects an obstruction or the depth is less than the entered value.

**CAUTION**

The ability to effectively avoid running aground with FrontVü sonar decreases as your speed rises above 8 knots.

**LiveVü and FrontVü Appearance Settings**

From a LiveVü or FrontVü Panoptix sonar view, select Menu > Sonar Setup > Appearance.

**Color Scheme:** Sets the color palette.

**Color Gain:** Adjusts the intensity of colors shown on the screen.

You can select a higher color gain value to see targets higher in the water column. A higher color gain value also allows you to differentiate low intensity returns higher in the water column, but this causes a loss in the differentiation of the returns at the bottom. You can select a lower color gain value when targets are near the bottom, to help you distinguish between targets and high intensity returns such as sand, rock, and mud.

**Trails:** Sets the how long the trails appear on the screen. The trails show the movement of the target.

**Bottom Fill:** Colors the bottom brown to distinguish it from the water returns.

**Grid Overlay:** Shows a grid of range lines.

**Scroll History:** Shows the sonar history in a traditional sonar view.

**RealVü Appearance Settings**

From a RealVü sonar view, select Menu > Sonar Setup > Appearance.

**Point Colors:** Sets a different color palette for the sonar return points.

**Bottom Colors:** Sets the color scheme for the bottom.

**Bottom Style:** Sets the style for the bottom. When you are in deep water, you can select the Points option and manually set the range to a shallower value.

**Color Key:** Shows a legend of the depths the colors represent.

**Perspective Appearance Settings**

the Perspective sonar view, select Menu > Sonar Setup > Appearance.

**Color Scheme:** Sets the color palette.
**Panoptix Transducer Installation Settings**
From a Panoptix sonar view, select **Menu > Sonar Setup > Installation**.

- **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.
- **Beam Width**: Sets the width of the down view Panoptix transducer beam. Narrow beam widths allow you to see deeper and farther. Wider beam widths allow you to see more coverage area.
- **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.
- **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. This applies to Panoptix transducers in the LiveVü, LiveVü Forward, and RealVü 3D Forward sonar views.
- **Calibrate Compass**: Calibrates the internal compass in the Panoptix transducer (**Calibrating the Compass**, page 32). This applies to Panoptix transducers with an internal compass, such as the PS21-TR transducer.
- **Orientation**: Controls if the transducer is in down or forward installation mode. The Auto setting uses the AHRS sensor to determine the orientation. This applies to PS22 and LiveScope transducers.
- **Focus**: Adjusts the sonar view to compensate for the speed of sound in water. The Auto setting uses the temperature of the water to calculate the speed of sound. This applies to LiveScope transducers.
- **Restore Sonar Defaults**: Restores the sonar settings to the factory default values.

### Setting the Bow Offset
For forward view Panoptix transducers, you can enter a bow offset to compensate for the forward distance readings for the transducer installation location. This allows you to view the forward distance from the bow instead of the transducer installation location.

This feature applies to Panoptix transducers in the FrontVü, LiveVü Forward, and RealVü 3D Forward sonar views.

1. Measure the horizontal distance ① from the transducer to the bow.
2. From an applicable sonar view, select **Menu > Sonar Setup > Installation > Bow Offset**.
3. Enter the distance measured, and select **Done**.

Calibrating the Compass
Before you can calibrate the compass, the transducer must be installed on the shaft 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:** To use the compass, you must mount the transducer on the transom or the trolling motor shaft. The compass may not work when you mount the transducer on the motor.

**NOTE:** For best results, you should use a heading sensor such as the SteadyCast™ heading sensor. The heading sensor shows the direction the transducer is pointing relative to the boat.

**NOTE:** Compass calibration is available only for transducers with an internal compass, such as the PS21-TR transducer. You can begin turning your boat before calibrating, but you must fully rotate your boat 1.5 times during calibration.

1. From an applicable sonar view, select **Menu > Sonar Setup > Installation**.
2. If necessary, select **Use AHRS** to turn on the AHRS sensor.
3. Select **Calibrate Compass**.
4. Follow the on-screen instructions.

### Radar

**WARNING**
The marine radar transmits microwave energy that has the potential to be harmful to humans and animals. Before beginning radar transmission, verify that the area around the radar is clear. The radar transmits a beam approximately 12° above and below a line extending horizontally from the center of the radar.

When the radar is transmitting, do not look directly at the antenna at close range; eyes are the most sensitive part of the body to electromagnetic energy.
When you connect your compatible chartplotter to an optional Garmin marine radar, such as a GMR™ Fantom™ 6 radar or a GMR 24 xHD, you can view more information about your surroundings.

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

Radar Interpretation

Reading and interpreting the radar display takes practice. The more you use the radar, the better you will become at relying on the radar display when you really need it.

Radar can be useful in many situations, such as avoiding collisions when you have limited visibility, for example when it is dark or foggy, tracking weather, seeing what is ahead of you, and locating birds and fish.

The radar overlay feature can help you interpret the radar display more easily, because it overlays the radar returns on top of the chart. This can help you identify the difference between a radar return of a land mass, bridge, or rain cloud. Showing the AIS vessels on the radar overlay can also help you identify features on the radar display.

In the screenshot below, the radar overlay is turned on. This screen also shows a video feed. We can easily identify a few items on the radar screen.

Transmitting Radar Signals

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

1. With the chartplotter off, connect your radar as described in the radar installation instructions.
2. Turn on the chartplotter.
   - If necessary, the radar warms up and a countdown alerts you when the radar is ready.
3. Select Radar.
4. Select a radar mode.
   - A countdown message appears while the radar is starting up.
5. Select Menu > Transmit Radar.

Stopping the Transmission of Radar Signals

From a radar screen, select Menu > Radar To Standby.

TIP: Press ↘ > Radar To Standby from any screen to quickly stop radar transmission.

Setting Up the Timed Transmit Mode

To help conserve power, you can set up time intervals in which the radar will transmit and not transmit (standby) signal transmissions.

NOTE: This feature is not available in dual radar modes.

1. From a radar screen, select Menu > Radar Options > Timed Transmit.
2. Select Timed Transmit to enable the option.
3. Select Stdby Time, enter the time interval between radar signal transmissions, and select Done.
4. Select Transmit Time, enter the duration of each radar signal transmission, and select Done.

Enabling and Adjusting a Radar No Transmit Zone

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

NOTE: GMR Fantom and xHD2 radar models support two no-transmit zones. Most other GMR radar models support one no-transmit zone. GMR 18 HD+ radar models do not support no-transmit zones.

1. From a radar screen, select Menu > Radar Setup > Installation > No Transmit Zone.
   - The no-transmit zone is indicated by a shaded area on the radar screen.
2. Select Angle 1, and select the new location for the first angle.
3. Select Angle 2, and select the new location for the second angle.
4. Select Done.
5. If necessary, repeat for the second zone.

Adjusting the Radar Range

The range of the radar signal indicates the length of the pulsed signal transmitted and received by the radar. As the range increases, the radar transmits longer pulses in order to reach distant targets. Closer targets, especially rain and waves, also reflect the longer pulses, which can add noise to the Radar screen. Viewing information about longer-range targets can also decrease the amount of space available on the Radar screen for viewing information about shorter-range targets.

- Select + to decrease the range.
- Select — to increase the range.

Tips for Selecting a Radar Range

- Determine what information you need to see on the Radar screen.
For example, do you need information about nearby weather conditions or targets and traffic, or are you more concerned about distant weather conditions?

- Assess the environmental conditions where the radar is being used.
  Especially in inclement weather, longer-range radar signals can increase the clutter on the Radar screen and make it more difficult to view information about shorter-range targets. In rain, shorter-range radar signals can enable you to view information about nearby objects more effectively, if the rain clutter setting is configured optimally.

- Select the shortest effective range, given your reason for using radar and the present environmental conditions.

**MotionScope™ Doppler Radar Technology**

The GMR Fantom radar uses the Doppler effect to detect and highlight moving targets to help you avoid potential collisions, find flocks of birds, and track weather formations. The Doppler effect is the frequency shift in the radar echo due to the relative motion of the target. This allows for instant detection of any targets moving toward or away from you. On most color schemes, green indicates the target is moving away from you and red indicates the target is moving toward you.

On some models, you can also adjust the M-Scope Sensitivity setting to change the speed threshold for target highlighting. A higher setting highlights slower targets, and a lower setting highlights only faster targets.

**Enabling a Guard Zone**

You can enable a guard zone to alert you when anything comes within a specified area around your boat.

From a radar screen, select **Menu > Radar Options > Guard Zone**.

**Defining a Circular Guard Zone**

Before you can define the boundaries of the guard zone, you must enable a guard zone (Enabling a Guard Zone, page 34).

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

1. From a radar screen, select **Menu > Radar Options > Guard Zone >  1  > Circle**.
2. Select the location of the outer guard zone circle.
3. Select the location of the inner guard zone circle to define the width of the guard zone.

**Defining a Partial Guard Zone**

Before you can define the boundaries of the guard zone, you must enable a guard zone (Enabling a Guard Zone, page 34).

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

1. From a radar screen, select **Menu > Radar Options > Guard Zone >  1  > Corner 1**.
2. Touch and drag the location of the outer guard-zone corner  1.
3. Select Corner 2.
4. Select the location of the inner guard-zone corner  2 to define the width of the guard zone.
5. Select **Done**.

**MARPA**

Mini-automatic radar plotting aid (MARPA) enables you to identify and track targets and is primarily used for collision avoidance. To use MARPA, you assign a MARPA tag to a target. The radar system automatically tracks the tagged object and provides you with information about the object, including the range, bearing, speed, GPS heading, nearest approach, and time to nearest approach. MARPA indicates the status of each tagged object (acquiring, lost, tracking, or dangerous), and the chartplotter can sound a collision alarm if the object enters your safe zone.

**Radar Options**

Before you can use MARPA, you must have a heading sensor connected and an active GPS signal. The heading sensor must provide the NMEA 2000 parameter group number (PGN) 127250 or the NMEA 0183 HDM or HDG output sentence.

1. From a radar screen, select an object or location.
2. Select **Acquire Tgt. > MARPA Target**.

**Removing a MARPA Tag from a Targeted Object**

1. From the Radar screen, select a MARPA target.
2. Select **MARPA Target > Remove**.

**Viewing Information about a MARPA-tagged Object**

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

1. From a radar screen, select a targeted object.
2. Select **MARPA Target**.
Viewing a List of AIS and MARPA Threats
From any Radar screen or the Radar overlay, you can view and customize the appearance of a list of AIS and MARPA threats.

1. From a Radar screen, select Menu > Layers > Other Vessels > List > Show.
2. Select the type of threats to include in the list.

Showing AIS Vessels on the Radar Screen
AIS requires the use of an external AIS device and active transponder signals from other vessels. You can configure how other vessels appear on the Radar screen. If any setting (except the AIS display range) is configured for one radar mode, the setting is applied to every other radar mode. The details and projected heading settings configured for one radar mode are applied to every other radar mode and to the Radar overlay.

1. From a Radar screen or the Radar overlay, select Menu > Other Vessels > AIS.
2. Select an option:
   - To indicate the distance from your location within which AIS vessels appear, select 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 Proj. Heading, and enter the time.

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

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

1. From a radar screen, select Menu > Radar Options > VRM/EBL.
2. To adjust the VRM/EBL, select the arrows on the VRM/EBL button.
3. Select a new location for the intersection point of the VRM and the EBL.
4. Select Done

Measuring the Range and Bearing to a Target Object
Before you can adjust the VRM and the EBL, you must show them on the Radar screen (Showing and Adjusting the VRM and the EBL, page 35).

1. From a Radar screen, select the target location.
2. Select Measure.
   - The range and the bearing to the target location appear in the upper-left corner of the screen.

Echo Trails
The echo trails feature enables you to track the movement of vessels on the radar display. As a vessel moves, you can see a faint trail of the vessel's wake. You can change the length of time the trail is displayed.

NOTE: Depending upon the radar in use, the settings configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

NOTE: This feature is not available on xHD open array or HD/HD+ radome models.

Turning on Echo Trails
From a radar screen, select Menu > Radar Options > Echo Trails > Display.

Adjusting the Length of the Echo Trails
1. From a radar screen or the Radar overlay, select Menu > Radar Options > Echo Trails > Time.
2. Select the length of the trail.

Clearing the Echo Trails
You can remove the echo trails from the radar screen to reduce the clutter on the screen.

1. From a radar screen, select Menu > Radar Options > Echo Trails > Clear Trails.

Optimizing the Radar Display
You can adjust the radar display settings for reduced clutter and increased accuracy.

NOTE: You can optimize the radar display for each radar mode.
1. Select a radar range (Adjusting the Radar Range, page 33).
2. Restore the default value of the gain setting (Adjusting Gain on the Radar Screen Automatically, page 35).
3. Adjust the gain setting manually (Adjusting Gain on the Radar Screen Manually, page 35).

Radar Gain and Clutter

Adjusting Gain on the Radar Screen Automatically
The automatic gain setting for each radar mode is optimized for that mode, and may differ from the automatic gain setting used for another mode.

NOTE: Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

NOTE: Not all options are available on all radar models.
1. From a radar screen or the Radar overlay, select Menu > Gain.
2. Select an option:
   - To adjust the gain automatically for changing conditions, select Auto Low or Auto High.
   - To adjust the gain automatically to show birds over the surface of the water, select Auto Bird.

   NOTE: This option is not available on xHD open array or HD/HD+ radome models.

Adjusting Gain on the Radar Screen Manually
For optimal radar performance, you can manually adjust the gain.

NOTE: Depending upon the radar in use, the gain setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.
1 From a Radar screen or the Radar overlay, select Menu > Gain.

2 Select Up to raise the gain, until light speckles appear across the Radar screen. Data on the Radar screen is refreshed every few seconds. As a result, the effects of manually adjusting the gain may not appear instantly. Adjust the gain slowly.

3 Select Down to lower the gain until the speckles disappear.

4 If boats, land, or other targets are within range, select Down to lower the gain until the targets begin to blink.

5 Select Up to raise the gain until the boats, land, or other targets appear steadily lit on the Radar screen.

6 Minimize the appearance of nearby large objects, if necessary.

7 Minimize the appearance of side-lobe echoes, if necessary.

**Minimizing Nearby Large-Object Interference**

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

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

1 From a Radar screen or the Radar overlay, select Menu > Gain.

2 Select Down to lower the gain until the smaller targets are clearly visible on the Radar screen.

Reducing the gain to eliminate nearby large-object interference may cause smaller or distant targets to blink or disappear from the Radar screen.

**Minimizing Side-Lobe Interference on the Radar Screen**

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

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

1 From a Radar screen or the Radar overlay, select Menu > Gain.

2 Select Down to lower the gain until the semi-circular, streaked pattern disappears from the Radar screen.

Reducing the gain to eliminate side-lobe interference may cause smaller or distant targets to blink or disappear from the Radar screen.

**Adjusting Sea Clutter on the Radar Screen Automatically**

You can set the chartplotter to automatically adjust the appearance of clutter caused by choppy sea conditions.

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

1 From a radar screen or the radar overlay, select Menu > Sea Clutter.

2 Select Presets or Auto.

3 Select a setting that reflects the present sea conditions. When using a compatible radar model, the chartplotter adjusts the sea clutter based on the sea conditions automatically.

**Adjusting Sea Clutter on the Radar Screen Manually**

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

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

1 From a radar screen or the radar overlay, select Menu > Sea Clutter.

2 Select Up or Down to adjust the appearance of sea clutter until other targets are clearly visible on the radar screen. Clutter caused by sea conditions may still be visible.

**Adjusting Rain Clutter on the Radar Screen**

You can adjust the appearance of clutter caused by rain. Reducing the radar range also can minimize rain clutter (*Adjusting the Radar Range, page 33*).

The rain clutter setting affects the appearance of nearby rain clutter and targets more than it affects the appearance of distant rain clutter and targets. A higher rain clutter setting reduces the appearance of clutter caused by nearby rain, but it can also reduce or eliminate the appearance of nearby targets.

**NOTE:** Depending upon the radar in use, the rain clutter settings configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

1 From a radar screen, select Menu > Radar Options > Rain Clutter.

2 Select Up or Down to decrease or increase the appearance of nearby rain clutter until other targets are clearly visible on the radar screen.

Clutter caused by rain may still be visible.

**Reducing Cross Talk Clutter on the Radar Screen**

You can reduce the appearance of clutter caused by interference from another nearby radar source, when the cross talk reject setting is on.

**NOTE:** Depending upon the radar in use, the cross talk reject setting configured for use in one radar mode may or may not be applied to other radar modes or to the Radar overlay.

From a Radar screen or the Radar overlay, select Menu > Radar Setup > Crosstalk Rej..

**Radar Options Menu**

From a radar screen, select Menu > Radar Options.

1 From a radar screen or the radar overlay, select Menu > Radar Options.

2 Select Presets or Auto.

3 Select a setting that reflects the present sea conditions. When using a compatible radar model, the chartplotter adjusts the sea clutter based on the sea conditions automatically.

**MotionScope™:** Uses the Doppler effect to detect and highlight moving targets to help you avoid potential collisions, find flocks of birds, and track weather formations (*MotionScope™ Doppler Radar Technology, page 34*). This option is only available on Fantom models.

**Pulse Exp.:** Increases the duration of the transmit pulse, which helps maximize the energy directed toward targets. This helps to enhance the detection and identification of targets. This option is only available on xHD radome and xHD2 open array models.

**Target Size:** Adjusts the size of targets, by adjusting the pulse compression processing. Select smaller targets for a sharp, high resolution radar image. Select larger targets to display larger echoes for point targets, like boats and buoys. This option is only available on Fantom models.

**Echo Trails:** Enables you to track the movement of vessels on the radar screen. This option is not available on xHD open array or HD/HD+ radome models.

**Rain Clutter:** Reduces the clutter caused by rain (*Adjusting Rain Clutter on the Radar Screen, page 36*).

**VRM/EBL:** Shows the variable range marker (VRM) circle and the electronic bearing line (EBL) to allow you to measure the distance and bearing from your boat to a target object (*VRM and EBL, page 35*).
Guard Zone: Sets a safe zone around your boat and sounds an alarm when anything enters the zone (Enabling a Guard Zone, page 34).

Timed Transmit: Helps conserve power by transmitting radar signals at set intervals.

Radar Setup Menu
From a radar screen, select Menu > Radar Setup.

Source: Selects the radar source when more than one radar is connected to the network.

Chart Display: Shows the chart under the radar image. When enabled, the Layers menu appears.

Orientation: Sets the perspective of the radar display.

Crosstalk Rej.: Reduces the appearance of clutter caused by interference from another nearby radar source.

Rotation Spd.: Sets the preferred speed at which the radar rotates. The High Speed option can be used to increase the refresh rate. In some situations, the radar automatically rotates at the normal speed to improve detection, for example, when a longer range is selected or when MotionScope or Dual range is used.

Appearance: Sets the color scheme, look-ahead speed, and navigation appearance.

Installation: Allows you to configure the radar for the installation, such as setting the front of the boat and the antenna park position.

Radar Appearance Settings
From a radar screen, select Menu > Radar Setup > Appearance.

NOTE: These settings do not apply to the radar overlay.

Bkgd. Color: Sets the color for the background.

Frdg. Color: Sets the color scheme for the radar returns.

Brightness: Sets the brightness of various radar features, such as range rings and tracking symbols.

Look-Ahead Speed: Shifts your present location toward the bottom of the screen automatically as your speed increases. Enter your top speed for the best results.

Heading Line: Shows an extension from the bow of the boat in the direction of travel on the radar screen.

Range Rings: Shows the range rings that help you to visualize distances on the radar screen.

Bearing Ring: Shows a bearing relative to your heading or based on a north reference, to help you determine the bearing to an object shown on the radar screen.

Nav Lines: Shows the navigation lines that indicate the course you have set using Route To, Auto Guidance, or Go To.

Waypoints: Shows waypoints on the radar screen.

Radar Installation Settings
Front of Boat: Compensates for the physical location of the radar when it is not on the boat axis (Front-of-Boat Offset, page 37).

Antenna Configuration: Sets the radar antenna size and sets the position in which the radar stops (Setting a Custom Park Position, page 37).

No Transmit Zone: Sets the area in which the radar does not transmit signals (Enabling and Adjusting a Radar No Transmit Zone, page 33).

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

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

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

Setting the Front-of-Boat Offset
Before you can set the front-of-boat offset, you must measure the potential front-of-boat offset.

1. From a Radar screen or the Radar overlay, select Menu > Radar Setup > Installation > Front of Boat.
2. Select Up or Down to adjust the offset.

Setting a Custom Park Position
By default, the antenna is stopped perpendicular to the pedestal when it is not spinning. You can adjust this position.

1. From the radar screen, select Menu > Radar Setup > Installation > Antenna Configuration > Park Position.
2. Use the slider bar to adjust the position of the antenna when stopped, and select Back.

Selecting a Different Radar Source
1. Select an option:
   - From a radar screen or the radar overlay, select Menu > Radar Setup > Source.
   - Select Settings > Communications > Preferred Sources > Radar.
2. Select the radar source.

Changing the Radar Mode
1. From a combination screen or SmartMode layout with radar, select Menu > Change Radar.
2. Select a radar mode.

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.

When the chartplotter is connected to a compatible Garmin autopilot system, you can engage and control the autopilot from the chartplotter.
For information about compatible Garmin autopilot systems, go to garmin.com.

Opening the Autopilot Screen
Before you can open the autopilot screen, you must have a compatible Garmin autopilot installed and configured.

Select A/V, Gauges, Controls > Autopilot.

Autopilot Screen

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.

Enabling Shadow Drive™
NOTE: The Shadow Drive feature is not available on all autopilot models.

Selecting the Preferred Heading Source
NOTE: For best results, use the autopilot CCU internal compass for the heading source. Using a third-party GPS compass can cause the data to be delivered erratically and may result in excessive delays. The autopilot needs timely information, and therefore cannot often use third-party GPS compass data for GPS location or speed. If a third-party GPS compass is used, the autopilot will likely report loss of navigation data and speed source periodically.

If you have more than one heading source on the network, you can select a your preferred source. The source could be a compatible GPS compass or a magnetic heading sensor.

1 From the autopilot screen, select Menu > Autopilot Setup > Preferred Sources
2 Select a source.

If the selected heading source is unavailable, the autopilot screen does not display any data.

Autopilot Overlay Bar
NOTE: Not all options are available on all autopilot models.

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<td>Rudder position indicator (available only when a rudder sensor is connected)</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>Intended heading (heading the autopilot is steering toward)</td>
<td></td>
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<td></td>
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<tr>
<td>7</td>
<td>Steers right</td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>Engages the steering pattern</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>9</td>
<td>Opens the full autopilot screen and menu</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Engaging the Autopilot
When you engage the autopilot, the autopilot takes control of the helm and steers the boat to maintain your heading.

From any screen, select Engage.

Your intended heading shows in the center of the Autopilot screen.

Adjusting the Heading with the Helm
NOTE: You must enable the Shadow Drive feature before you can adjust the heading using the helm (Enabling Shadow Drive™, page 38).

With the autopilot engaged, manually steer the boat.

The autopilot activates Shadow Drive mode.

When you release the helm and manually maintain a specific heading for a few seconds, the autopilot resumes a heading hold at the new heading.

Adjusting the Heading with the Chartplotter in Step Steering Mode
Before you can steer your boat using the keys at the bottom of the autopilot screen, you must engage the autopilot (Engaging the Autopilot, page 38).

- Select <1° or 1°> to initiate a single 1° turn.
- Select <<10° or 10°>> to initiate a single 10° turn.
- Hold <1° or 1°> to initiate a rate-controlled turn.

The boat continues to turn until you let go of the key.

- Hold <<10° or 10°>> to initiate a sequence of 10° turns.

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**.

### Following an Orbit Pattern
You can use the orbit pattern to steer the boat in a continuous circle around the active waypoint. The size of the circle is defined by your distance from the active waypoint when you begin the orbit pattern.

1. From the autopilot screen, select **Menu > Pattern Steering > Orbit**.
2. Select **Engage Port** or **Engage Starboard**.

### Setting Up and Following the Cloverleaf Pattern
You can use the cloverleaf pattern to steer the boat to repeatedly pass over an active waypoint. When you begin the cloverleaf pattern, the autopilot drives the boat toward the active waypoint and begins the cloverleaf pattern.

You can adjust the distance between the waypoint and the location where the autopilot turns the boat for another pass over the waypoint. The default setting turns the boat at a range of 1000 ft. (300 m) from the active waypoint.

1. From the autopilot screen, select **Menu > Pattern Steering > Cloverleaf**.
2. If necessary, select **Length**, and select a distance.
3. Select **Engage Port** or **Engage Starboard**.

### Setting Up and Following a Search Pattern
You can use the search pattern to steer the boat in increasingly larger circles outward from the active waypoint, forming a spiral pattern. When you begin the search pattern, the autopilot drives the boat to the active waypoint and begins the pattern.

You can adjust the distance between each circle in the spiral. The default distance between circles is 50 ft. (20 m).

1. From the autopilot screen, select **Menu > Pattern Steering > Search**.
2. If necessary, select **Search Spacing**, and select a distance.
3. Select **Engage Port** or **Engage Starboard**.

### Cancelling a Steering Pattern
- Physically steer the boat.

**NOTE:** Shadow Drive must be enabled to cancel a steering pattern by physically steering the boat.
- Select $\leftarrow$ or $\rightarrow$ to cancel a pattern using step steering mode.
- Select **Standby**.

### Enabling the Autopilot Controls on a Garmin Watch
You can control the Garmin autopilot with a compatible Garmin watch. Go to [garmin.com](http://garmin.com) for a list of compatible Garmin watches.

**NOTE:** Smart notifications are not available on your watch when the autopilot remote control is enabled.

1. Select **Communications > Wireless Devices > Connect IQ™ Apps > Autopilot Control > Enable > New Connection**.
2. Follow the on-screen instructions.

### Customizing the Autopilot Button Actions
Before you can set the autopilot button actions, you must install and configure a compatible Garmin autopilot.

You can select up to three autopilot actions for your Garmin watch to perform.

**NOTE:** Available autopilot actions depend on the autopilot installed.

1. On the chartplotter, select **Communications > Wireless Devices > Connect IQ™ Apps > Autopilot Control > Button Actions**.
2. Select a button.
3. Select an action.

### Reactor™ Autopilot Remote Control

**WARNING**
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.

You can wirelessly connect a Reactor autopilot remote control to the chartplotter to control the compatible Reactor autopilot system.

For more information about using the remote, see the Reactor autopilot remote control instructions at [garmin.com](http://garmin.com)

### Pairing a Reactor Autopilot Remote Control With a Chartplotter

1. Select **Settings > Communications > Wireless Devices > Wireless Remotes > Autopilot Remote**.
2. If necessary, select **Enable**.
3. Select **New Connection**.
4. On the remote control, select $\mathbf{F} >$ Pair with MFD.
   The chartplotter beeps and shows a confirmation message.
5. On the chartplotter, select **Yes** to complete the pairing process.

### Changing the Functions of the Reactor Autopilot Remote Control Action Keys
You can change the patterns or actions assigned to the Reactor autopilot remote control action keys.

1. Select **Settings > Communications > Wireless Devices > Wireless Remotes > Autopilot Remote > Button Actions**.
2. Select an action key to change.
3 Select a pattern or action to assign to the action key.

**Updating the Reactor Autopilot Remote Control Software**

You can update the Reactor autopilot remote control software using the chartplotter.

1 Insert a memory card into the card slot on the computer.
2 Go to buy.garmin.com/p/636376, and select **Software**.
3 Select **Download**.
4 Read and agree to the terms.
5 Select **Download**.
6 Choose a location, and select **Save**.
7 Double-click the downloaded file.
8 Select **Next**.
9 Select the drive associated with the memory card, and select **Next > Finish**.
10 On the chartplotter, insert the memory card into the card slot.
11 Select **Settings > Communications > Wireless Devices > Wireless Remotes > Autopilot Remote > Update Software**.

**WARNING**

Do not run the motor when the propeller is out of the water. Contact with the rotating propeller may result in severe injury.

Do not use the motor in areas where you or other people in the water may come into contact with the rotating propeller.

Always disconnect the motor from the battery before cleaning or servicing the propeller to avoid injury.

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.

**CAUTION**

When using the autopilot features, be prepared for sudden stops, acceleration, and turns.

When stowing or deploying the motor, be aware of the risk of entrapment or pinching from moving parts, which can result in injury.

When stowing or deploying the motor, be aware of slick surfaces around the motor. Slipping when stowing or deploying the motor may result in injury.

You can connect the Force trolling motor to the chartplotter to view and control the motor using the chartplotter.

**Connecting to a Trolling Motor**

You can connect the chartplotter wirelessly to a compatible Garmin Force trolling motor on your boat to control the trolling motor from the chartplotter.

1 Turn on the chartplotter and the trolling motor.
2 Enable the Wi-Fi network on the chartplotter (**Setting Up the Wi-Fi Wireless Network**, page 6).
3 If multiple chartplotters are connected on the Garmin Marine Network, make sure this chartplotter is the host of the Wi-Fi network (**Changing the Wi-Fi Host**, page 7).

**WARNING**

When using the autopilot features, be prepared for sudden stops, acceleration, and turns.

When stowing or deploying the motor, be aware of the risk of entrapment or pinching from moving parts, which can result in injury.

When stowing or deploying the motor, be aware of slick surfaces around the motor. Slipping when stowing or deploying the motor may result in injury.

You can connect the Force trolling motor to the chartplotter to view and control the motor using the chartplotter.

**Force™ Trolling Motor Control**

**CAUTION**

When using the autopilot features, be prepared for sudden stops, acceleration, and turns.

When stowing or deploying the motor, be aware of the risk of entrapment or pinching from moving parts, which can result in injury.

When stowing or deploying the motor, be aware of slick surfaces around the motor. Slipping when stowing or deploying the motor may result in injury.

You can connect the Force trolling motor to the chartplotter to view and control the motor using the chartplotter.

**Connecting to a Trolling Motor**

You can connect the chartplotter wirelessly to a compatible Garmin Force trolling motor on your boat to control the trolling motor from the chartplotter.

1 Turn on the chartplotter and the trolling motor.
2 Enable the Wi-Fi network on the chartplotter (**Setting Up the Wi-Fi Wireless Network**, page 6).
3 If multiple chartplotters are connected on the Garmin Marine Network, make sure this chartplotter is the host of the Wi-Fi network (**Changing the Wi-Fi Host**, page 7).

**Adding the Trolling Motor Controls to Screens**

After you have connected the chartplotter to the Force trolling motor, you must add the trolling motor control bar to screens to control the trolling motor.

1 Open a screen from which you would like to control the trolling motor.
2 Select an option:
   - From a combination page or SmartMode layout, select **Menu > Edit > Overlays**.
   - From a full screen, select **Menu > Edit Overlays**.
3 Select **Top Bar** or **Bottom Bar**.
4 Select **Trolling Motor Bar**.
5 Repeat these steps to add the trolling motor controls to all of the screens from which you would like to control the trolling motor.

**Trolling Motor Control Bar**

The trolling motor control bar allows you to control a trolling motor and see the status of the motor.

Select an item to engage it. The button illuminates when selected. Select the item again to disengage it.

- **Anchor Gain**: Sets the response of the trolling motor when in anchor lock mode. If you need the trolling motor to be more responsive and move quicker, increase the value. If the motor is moving too much, decrease the value.
- **SmartMode**: Calibrates the trolling motor compass (**Calibrating the Trolling Motor Compass**, page 41) and sets the trolling motor bow offset (**Setting the Bow Offset**, page 41).
- **Anchor Gain**: Sets the response of the trolling motor when in anchor lock mode. If you need the trolling motor to be more responsive and move quicker, increase the value. If the motor is moving too much, decrease the value.

**Trolling Motor Settings**

From the trolling motor bar, select **Edit**.

- **Calibrate**: Calibrates the trolling motor compass (**Calibrating the Trolling Motor Compass**, page 41) and sets the trolling motor bow offset (**Setting the Bow Offset**, page 41).
- **Anchor Gain**: Sets the response of the trolling motor when in anchor lock mode. If you need the trolling motor to be more responsive and move quicker, increase the value. If the motor is moving too much, decrease the value.
**Navigation Gain:** Sets the response of the trolling motor when navigating. If you need the trolling motor to be more responsive and move quicker, increase the value. If the motor is moving too much, decrease the value.

**Heading Hold Mode:** Sets the heading hold mode. The Vessel Align option attempts to keep the boat pointing in the same direction. The Go To option attempts to navigate a straight line in the requested direction.

**Arrival Mode:** Sets the behavior of the trolling motor when you reach the end of a route. With the Anchor Lock setting, the trolling motor holds the position using the anchor lock feature when the boat reaches the end of the route. With the Manual setting, the propeller turns off when the boat reaches the end of the route.

**CAUTION**
When using the Manual setting for the Arrival Mode option, you must be ready to take control of the boat.

**Auto Power On:** Turns on the trolling motor when you apply power to the system.

**Prop. Stow Side:** Sets which side of the trolling motor the propellor rotates to when stowing the trolling motor. This is helpful when you store other items near the stowed propellor.

**Shortcut Keys:** Enables the shortcut keys on the trolling motor remote control to work with this particular chartplotter. The keys work with only one chartplotter at a time.

**Restore Defaults:** Resets the trolling motor settings to the factory default values.

**Assigning a Shortcut to the Trolling Motor Remote Control Shortcut Keys**
You can quickly open commonly used screens by assigning a shortcut key on the trolling motor remote control. You can create a shortcut to screens, such as sonar screens and charts.

**NOTE:** If you have more than one chartplotter on the network, you can assign shortcut keys to one chartplotter only.

1. Open a screen.
2. Hold a shortcut key.
   - **TIP:** The shortcut is also saved to the Favorites category with the shortcut key number.

**Calibrating the Trolling Motor Compass**
You must calibrate the compass in the trolling motor before you can use the autopilot features.

1. Drive the boat to an open area of calm water.
2. From the trolling motor bar, select > Calibrate > Compass Cal.
3. Follow the on-screen instructions.

**Setting the Bow Offset**
Based on the installation angle, the trolling motor may not align with the center line of your boat. For the best results, you should set the bow offset.

1. Adjust the angle of the trolling motor so it aligns with the center line of your boat, pointing straight forward.

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**Digital Selective Calling**

**Networked Chartplotter and VHF Radio Functionality**
If you have a NMEA 0183 VHF radio or a NMEA 2000 VHF radio connected to your chartplotter, 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.

If you have a Garmin NMEA 2000 VHF radio connected to your chartplotter, these features are also enabled.
- The chartplotter allows you to quickly set up and send individual routine call details to your Garmin VHF radio.
- When you initiate a man-overboard distress call from your radio, the chartplotter shows the man-overboard screen and prompts you to navigate to the man-overboard point.
- When you initiate a man-overboard distress call from your chartplotter, the radio shows the Distress Call page to initiate a man-overboard distress call.

**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 Info > 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 Info > 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 or NMEA 2000, your chartplotter alerts you when your VHF radio receives a DSC distress call. If position information was sent with the distress call, that information is also available and recorded with the call.

Navigating to a Vessel in Distress
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.

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

Man-Overboard Distress Calls Initiated from a VHF Radio
When the chartplotter is connected to a compatible VHF radio with NMEA 2000, and you initiate a man-overboard DSC distress call from the radio, the chartplotter shows the man-overboard screen and prompts you to navigate to the man-overboard point. If you have a compatible autopilot system connected to the network, the chartplotter prompts you to start a Williamson’s turn to the man-overboard point.

If you cancel the man-overboard distress call on the radio, the chartplotter screen prompting you to activate navigation to the man-overboard location disappears.

Man-Overboard and SOS Distress Calls Initiated from the Chartplotter
When your chartplotter is connected to a Garmin NMEA 2000 compatible radio and you mark an SOS or man-overboard location, the radio shows the Distress Call page so you can quickly initiate a distress call.

For information on placing distress calls from your radio, see the VHF radio owner’s manual. For information about marking an MOB or SOS location, see Marking an SOS Location, page 17.

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 41).

Viewing a Position Report
1. Select Info > DSC List.
2. Select a position-report call.
3. Select Review.
4. Select an option:
   • To view the position report details, select >.
   • To view to a chart marking the location, select <<.

Navigating to a Tracked Vessel
1. Select Info > DSC List.
2. Select a position-report call.
3. Select Review > Navigate To.
4. Select Go To or Route To.

Creating a Waypoint at the Position of a Tracked Vessel
1. Select Info > DSC List.
2. Select a position-report call.

Editing Information in a Position Report
1. Select Info > DSC List.
2. Select a position-report call.
   • 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 Info > DSC List.
2. Select a position-report call.

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 > Layers > Other Vessels > DSC > 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 Info > DSC List.
2. Select a vessel or a station to call.
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 Info > DSC List.
2. Select a vessel or a station to call.
4. If necessary, select Channel, and select a new channel.
5. Select Send.
   The chartplotter sends information about the call to the radio.
Changing the Data Shown in a Gauge

The gauges and graphs provide various information about the engine and environment. To view the information, a compatible transducer or sensor must be connected to the network.

Customizing Engine Gauge and Fuel Gauge Limits

You can change the data shown in a gauge. To change the data shown in a gauge:

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, complete the call.

Changing the Data Shown in a Gauge

You can change the layout of the gauge pages, how the gauges pages are displayed, and the data in each gauge.

1. Open a gauge page.
2. Select Menu > Edit Gauge Pages.
3. Select an option:
   - To change the data shown in a gauge, select the gauge.
   - To change the layout of the gauges on the page, select Change Layout.
   - To add a page to this set of gauge pages, select Add Page.
   - To change the order of this page in the set of gauge pages, select Move Page Left or Move Page Right.
   - To restore this page to the original view, select Restore Default View.

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.

NOTE: Not all options are available for all gauges.

1. From an applicable gauges screen, select Menu > Installation > Set Gauge Limits.
2. Select a gauge to customize.
3. Select an option:
   - 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.

Selecting the Number of Engines Shown in Gauges

You can show information for up to four engines. To change the number of engines shown in the gauges:

1. From the engine gauges screen, select Menu > Installation > Engine Selection > Num. Engines.
2. Select an option:
   - Select the number of engines.
   - Select Auto Configure to automatically detect the number of engines.

Enabling Status Alarms for Engine Gauges

You can enable the chartplotter to display engine status alarms. To enable status alarms for engine gauges:

1. From the engine gauges screen, select Menu > Status Alarms > On.

When an engine alarm is triggered, a gauge status alarm message appears and the gauge may become red depending on the type of alarm.

Enabling Some Engine Gauge Status Alarms

1. From the engine gauges screen, select Menu > Status Alarms > Custom.
2. Select one or more engine gauge alarms to turn on or off.

Yamaha® Engine Gauges

Select A/V, Gauges, Controls > YAMAHA to view the Yamaha engine gauges. This screen varies based on the engine network and throttle controller.

<table>
<thead>
<tr>
<th>Data fields</th>
<th>Hold to replace the data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current time</td>
<td>Hold to view trip data.</td>
</tr>
<tr>
<td>Tank level information</td>
<td>Hold to view detailed tank level sensor information.</td>
</tr>
<tr>
<td>GPS signal strength</td>
<td>Select to set the Fish Point high RPM limit (Helm Master®). Select to set the trolling speed (Command Link Plus®).</td>
</tr>
<tr>
<td>Data fields</td>
<td>Hold to replace the data.</td>
</tr>
</tbody>
</table>

Gauges and Graphs
Configuring the Number of Engines

Consult your Yamaha dealer if the problem cannot be located and corrected.

Low cooling water pressure.

Low oil pressure. Stop the engine. Check the engine oil level, and add more oil if necessary.

Engine overheating. Stop the engine immediately. Check the cooling water inlet, and clear it if it is blocked.

Low battery voltage. Check the battery and battery connections, and tighten all loose battery connections.

Water in the fuel. Water has collected in the fuel filter (fuel separator). Stop the engine immediately and consult the engine manual to drain the water from the fuel filter.

Check engine/maintenance alert. Consult your Yamaha dealer immediately. The check engine alert also appears when more than 100 hours have elapsed since the previous maintenance.

Engine alert notification. (Helm Master)

Engine emission issue.

Setting up the Gauges

Configuring the Number of Engines

1. From a gauges screen, select Menu > Num. Engines.
2. Select the number of engines.

Configuring the Tank Level Sensors

1. From a gauges screen, select Menu > Tank Preset.
2. Select a tank level sensor to configure.
3. Select Name, enter a name, and select Done.

Yamaha Engine Data Settings

From a Yamaha engine screen, select Menu.

Trip: Displays information about the trip, such as distance and hours, and allows you to reset these values.

Maintenance Reminder: Displays maintenance information, and enables you to set the maintenance intervals, and reset the time elapsed since the previous maintenance.

Tank Preset: Sets the tank name, fluid type, sensor style, and tank capacity, and calibrates the sensor.

Fuel Flow Offset: Sets the offset for the fuel flow data.

Off Timer: Turns off the system one hour after the engine is turned off. Available on the Helm Master system.

Trim Zero Set: Allows you to initialize the trim angle to zero when all motors are fully trimmed down.

Tanks: Displays detailed tank level sensor information.

Trim: Displays the trim angle of the engines.

Active Alarms: Displays any active alarms for the engines.

Trouble Code: Displays the corresponding trouble codes for the active engine alarms. Provide this information to the Yamaha dealer.

Setting the Fuel Alarm

Before you can set a fuel level alarm, a compatible fuel flow sensor must be connected to the chartplotter.

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

2. Enter the remaining amount of fuel that triggers the alarm, and select Done.

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 A/V, Gauges, Controls > Engines > 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.
Viewing the Wind Gauges
Before you can view wind information, you must have a wind sensor connected to the chartplotter.

Select A/V, Gauges, Controls > Wind.

Configuring the Sailing Wind Gauge
You can configure the sailing wind gauge to show true or apparent wind speed and angle.
1 From the wind gauge, select Menu > Sailing Wind Gauge.
2 Select an option:
   • To show true or apparent wind angle, select Needle, and select an option.
   • To show true or apparent wind speed, select Wind Speed, and select an option.

Configuring the Speed Source
You can specify whether the vessel speed data displayed on the gauge and used for wind calculations is based on water speed or GPS speed.
1 From the wind gauge, select Menu > Compass Gauge > Speed Display.
2 Select an option:
   • To calculate the vessel speed based on data from the water-speed sensor, select Water Speed.
   • To calculate the vessel speed based on GPS data, select GPS Speed.

Configuring the Heading Source of the Wind Gauge
You can specify the source of the heading displayed on the wind gauge. Magnetic heading is the heading data received from a heading sensor, and GPS heading is calculated by your chartplotter GPS (course over ground).
1 From the wind gauge, select Menu > Compass Gauge > Heading Source.
2 Select GPS or Magnetic.
   NOTE: When moving at low speeds or when stationary, the magnetic compass source is more accurate than the GPS source.

Customizing the Close-Hauled Wind Gauge
You can specify the range of the close-hauled wind gauge for both the upwind scale and the downwind scale.
1 From the wind gauge, select Menu > Compass Gauge > Gauge Type > Close Hauled Gauge.
2 Select an option:
   • To set the maximum and minimum values that appear when the upwind close-hauled wind gauge appears, select Change Upwind Scale, and set the angles.
   • To set the maximum and minimum values that appear when the downwind close-hauled wind gauge appears, select Change Downwind Scale, and set the angles.
   • To view true or apparent wind, select Wind, and select an option.

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

Select Info > Trip & Graphs > Trip.

Resetting Trip Gauges
1 Select 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.

Battery Management
You can view the battery and other power sources, and the devices that use those sources.
Batteries are listed along the top of the screen. Other sources of power, such as solar, alternator, converter, and wind generator, are listed along the left side. The items along the right side of the screen are devices that use the batteries and other power sources.

Setting Up the Battery Management Page
1 Select A/V, Gauges, Controls > Battery Management > Menu > Edit Devices.
2 Select an item.
3 Select Device, and select an item from the list.
4 If necessary, select Name, enter a name for this device, and select Done.
5 If necessary, select Change Icon, select a new symbol, and select Done.
6 Repeat steps 2 through 5 for each device.

Viewing Graphs
Before you can view graphs of various environmental changes, such as temperature, depth, and wind, you must have an appropriate transducer or sensor connected to the network.
Select Info > Trip & Graphs > Graphs.

Setting the Graph Range and Time Scales
You can indicate the amount of time and the range of depth that appear in the depth and water temperature graphs.
1 From a graph, select Graph Setup.
2 Select an option:
   • To set a time-elapsed scale, select Duration. The default setting is 10 minutes. Increasing the time-elapsed scale allows you to view variations over a longer period of time. Decreasing the time-elapsed scale allows you to view more detail over a shorter period of time.
   • To set the graph scale, select Scale. Increasing the scale allows you to view more variation in readings. Decreasing the scale allows you to view more detail in the variation.

inReach® Messages

WARNING
Do not read or reply to notifications while operating the vessel. Failure to pay attention to the conditions on the water can result in vessel damage, personal injury, or death.

You can connect an inReach Mini device to the chartplotter to view, reply to, and send preset messages from the chartplotter.
NOTE: The inReach Mini device must be connected to the chartplotter and receiving satellite signals to send and receive messages using the chartplotter.
To open the inReach® page, select A/V, Gauges, Controls > InReach®.

Connecting an inReach Device to the Chartplotter
You can connect a compatible inReach device to the chartplotter to manage messages.
1 Bring the inReach device within 3 m (10 ft.) of the chartplotter.
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, present date, and past hour.
Select 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 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 Info > Tides & Currents > Celestial.

Viewing Tide Station, Current Station, or Celestial Information for a Different Date
1 Select 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 Info > Tides & Currents.
2 Select Tides or Currents.
3 Select Nearby Stations.
4 Select a station.

Viewing Almanac Information from the Navigation Chart
1 From a chart or 3D chart view, select a location.
2 Select Information.
3 Select Tides, Currents, or Celestial.

Warning Manager

Viewing Messages
1 Select Info > Warning Manager.
Saving Messages to a Memory Card

1. Insert a memory card into the card slot.
2. Select Info > Warning Manager > Save to Card.

Clearing all of the Messages
Select Info > Warning Manager > Clear Warning Manager.

Media Player

NOTE: The media player feature is not compatible with all chartplotter models.
NOTE: Not all features are available on all connected media players.

If you have a compatible stereo connected to the NMEA 2000 network or Garmin Marine Network, you can control the stereo using the chartplotter. The chartplotter should automatically detect the media player when it is first connected. You can play media from sources connected to the media player and sources connected to the network.

Opening the Media Player
Before you can open the media player, you must connect a compatible device to the chartplotter. Select A/V, Gauges, Controls > Media.

Icons
NOTE: Not all devices have these icons.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>★</td>
<td>Saves or deletes a channel as a preset</td>
</tr>
<tr>
<td>⊙</td>
<td>Repeats all songs</td>
</tr>
<tr>
<td>♫</td>
<td>Repeats one song</td>
</tr>
<tr>
<td>�cmpeq</td>
<td>Searches for stations or skips songs</td>
</tr>
<tr>
<td>🎧</td>
<td>Shuffles</td>
</tr>
</tbody>
</table>

Selecting the Media Device and Source
You can select the media source connected to the stereo. When you have multiple stereo or media devices connected on a network, you can select the device from which you want to play music.

NOTE: You can play media only from sources that are connected to the stereo.
NOTE: Not all features are available on all media devices and sources.

1. From the media screen, select Devices, and select the stereo.
2. From the media screen, select Source, and select the media source.

NOTE: The Devices button only appears when more than one media device is connected to the network.
NOTE: The Source button only appears for devices that support multiple media sources.

Playing Music

Browsing for Music
1. From the media screen, select Browse or Menu > Browse.
2. Select Select or select an option.

Enabling Alphabetic Search
You can enable the alphabetic search feature to find a song or album in a large list.

From the media screen, select Menu > Installation > Alpha Search.

Setting a Song to Repeat
1. While playing a song, select Menu > Repeat.
2. If necessary, select Single.

Setting All Songs to Repeat
From the media screen, select Menu > Repeat > All.

Setting Songs to Shuffle
1. From the media screen, select Menu > Shuffle.
2. If necessary, select an option.

Joining the FUSION PartyBus™ Network
You can play music from other compatible stereos connected to the FUSION PartyBus network. One FUSION PartyBus stereo must be connected to the chartplotter using the NMEA 2000 network.

NOTE: A FUSION PartyBus zone stereo, such as the Apollo™ SRX400 zone stereo, cannot stream sources to other FUSION PartyBus devices on the network. Because of this, zone stereos do not appear as available sources in the chartplotter.

1. From the media screen, select Source.
   NOTE: After few moments, the compatible FUSION PartyBus stereos appear as sources.
2. Select the FUSION PartyBus stereo.
3. If necessary, select Source, and select a different source connected to the FUSION PartyBus stereo.

To leave the FUSION PartyBus network, you can select Source > Leave PartyBus.

Adjusting the Volume

Muting the Media Volume
1. From the media screen, select Mute.
2. If necessary, select Select.

Enabling and Disabling Zones
If you have wired your vessel's speakers into zones, you can enable needed zones and disable unused zones.

1. From the media screen, select Menu > Audio Levels > Enable/Disable Zones.
2. Select a zone.

VHF Radio

NOTE: These features are available on some stereos with a VHF receiver.

Scanning VHF Channels
Before you can scan VHF channels, you must set the source to VHF.
You can monitor VHF channels saved as presets for activity and automatically switch to an active channel.

From the VHF media screen, select Scan.

Adjusting the VHF Squelch
NOTE: This feature is available on some stereos with a VHF receiver.
1. From the VHF source page, select Menu > Squelch.
2. Use the slider bar to adjust the VHF squelch.

Radio
To listen to AM or FM radio, you must have a suitable marine AM/FM antenna properly connected to the stereo and be within range of a broadcasting station. For instructions on connecting an AM/FM antenna, see the stereo installation instructions.

To listen to SiriusXM radio, you must have the appropriate equipment and subscriptions (SiriusXM Satellite Radio, page 48). For instructions on connecting a SiriusXM Connect Vehicle Tuner, see the stereo installation instructions.

To listen to DAB stations, you must have the appropriate equipment (DAB Playback, page 48). For instructions on connecting a DAB adapter and antenna, see the installation instructions provided with your adapter and antenna.

Setting the Tuner Region
1. From the media screen, select Menu > Installation > Tuner Region.
2. Select an option.

Changing the Radio Station
1. From the media screen, select an applicable source, such as FM.
2. Select ◄ or ► to tune to a station.

Changing the Tuning Mode
You can change how you select a station for some media types, such as FM or AM radio.

NOTE: Not all tuning modes are available for all media sources.
1. From the media screen, select Menu > Tuning Mode.
2. Select an option.
3. If necessary, select Select.

Presets
You can save your favorite AM stations and FM stations as presets for easy access.
You can save your favorite SiriusXM channels if you are connected to an optional SiriusXM tuner and antenna.
You can save your favorite DAB stations if you are connected to an optional DAB module and antenna.

Saving a Station as a Preset
1. From an applicable media screen, tune to the station to save as a preset.
2. Select Presets > Add Current Channel.

Selecting a preset
1. From an applicable media screen, select Presets.
2. Select a preset from the list.
3. Select Tune to Channel.

Removing a preset
1. From an applicable media screen, select Presets.
2. Select a preset from the list.
3. Select Remove Current Channel.

DAB Playback
When you connect a compatible Digital Audio Broadcasting (DAB) module and antenna, such as the FUSION® MS-DAB100A to a compatible stereo, you can tune in to and play DAB stations.
To use the DAB source, you must be in a region in which DAB is available, and select the tuner region (Setting the DAB Tuner Region, page 48).

Setting the DAB Tuner Region
You must select the region you are in to receive DAB stations properly.
1. From the media screen, select Menu > Installation > Tuner Region.
2. Select the region you are in.

Scanning for DAB Stations
Before you can scan for DAB stations, you must connect a compatible DAB module and antenna (not included) to the stereo. Because DAB signals are broadcast in select countries only, you must also set the tuner region to a location where DAB signals are broadcast.
1. Select the DAB source.
2. Select Scan to scan for available DAB stations.
   When scanning is complete, the first available station in the first ensemble found begins playing.
   NOTE: After the first scan is complete, you can select Scan again to re-scan for DAB stations. When the re-scan is complete, the system starts playing the first station in the ensemble you were listening to when you started the re-scan.

Changing DAB Stations
1. Select the DAB source.
2. If necessary, select Scan to scan for local DAB stations.
3. Select ◄ or ► to change the station.
   When you reach the end of the current ensemble, the stereo automatically changes to the first available station in the next ensemble.
   TIP: You can hold ◄ or ► to change the ensemble.

Selecting a DAB Station from a List
1. From the DAB media screen, select Browse > Stations.
2. Select a station from the list.

Selecting a DAB Station from a Category
1. From the DAB media screen, select Browse > Categories.
2. Select a category from the list.
3. Select a station from the list.

DAB Presets
You can save your favorite DAB stations as presets for easy access.
You can save up to 15 DAB-station presets.

Saving a DAB Station as a Preset
1. From the DAB media screen, select the station to save as a preset.
2. Select Browse > Presets > Save Current.

Selecting a DAB Preset from a List
1. From the DAB media screen, select Browse > Presets > View Presets.
2. Select a preset from the list.

Removing DAB Presets
1. From the DAB media screen, select Browse > Presets.
2. Select an option:
   • To remove one preset, select Remove Preset, and select the preset.
   • To remove all presets, select Remove All Presets.

SiriusXM Satellite Radio
When you have a FUSION-Link™ capable stereo and SiriusXM Connect Tuner installed and connected to the chartplotter, you may have access to SiriusXM satellite radio, depending on your subscription.
Locating a SiriusXM Radio ID
Before you can activate your SiriusXM subscription, you must have the radio ID of your SiriusXM Connect Tuner.
You can locate the SiriusXM Radio ID on the back of the SiriusXM Connect Tuner, on the back of its packaging, or by tuning your chartplotter to channel 0.
1 Select Media > Source > SiriusXM.
2 Tune to channel 0.
   The SiriusXM radio ID does not include the letters I, O, S, or F.

Activating a SiriusXM Subscription
1 With the SiriusXM source selected, tune to channel 1.
   You should be able to hear the preview channel. If not, check the SiriusXM Connect Tuner and antenna installation and connections, and try again.
2 Tune to channel 0 to locate the Radio ID.
3 Contact SiriusXM listener care by phone at (866) 635-2349 or go to www.siriusxm.com/activatenow to subscribe in the United States. Contact SiriusXM by phone at (877) 438-9677 or go to www.siriusxm.ca/activatexm to subscribe in Canada.
4 Provide the Radio ID.
   The activation process usually takes 10 to 15 minutes, but can take up to an hour. For the SiriusXM Connect Tuner to receive the activation message, it must be turned on and receiving the SiriusXM signal.
5 If the service is not activated within the hour, go to http://care.siriusxm.com/refresh or contact SiriusXM Listener Care by phone at 1-866-635-2349.

Customizing the Channel Guide
SiriusXM radio channels are grouped in categories. You can select the categories of channels that appear in the channel guide.
Select an option:
• If the media device is a FUSION-Link capable stereo, select Media > Browse > Channel.
• If the media device is a GXM™ antenna, select Media > Category.

Saving a SiriusXM Channel to the Presets List
You can save your favorite channels to the presets list.
1 Select Media.
2 Select the channel to save as a preset.
3 Select an option:
   • If the media device is a FUSION-Link capable stereo, select Browse > Presets.
   • If the media device is a GXM antenna, select Menu > Presets > Add Current Channel.

Parental Controls
The parental control feature allows you to limit access to any SiriusXM channels, including those with mature content. When the parental control feature is enabled, you must enter a passcode to tune to the locked channels. You can also change the 4-digit passcode.

Unlocking SiriusXM Parental Controls
1 From the media screen, select Browse > Parental > Unlock.
2 Enter your passcode.
   The default passcode is 0000.

Setting Parental Controls on SiriusXM Radio Channels
Before you can set parental controls, the parental controls must be unlocked.

 SiriusXM Weather

WARNING
The weather information provided through this product is subject to service interruptions and may contain errors, inaccuracies, or outdated information, and consequently should not be relied upon exclusively. Always use common sense while navigating, and check alternate weather information sources prior to making safety-related decisions. You acknowledge and agree that you shall be solely responsible for use of the weather information and all decisions taken with respect to navigating in weather. Garmin will not be responsible for any consequences of using SiriusXM weather information.
Weather receiver. To use satellite weather, you must have a compatible satellite radio receiver. Go to www.garmin.com for more information.

SiriusXM Equipment and Subscription Requirements
To use satellite weather, you must have a compatible satellite weather receiver. To use SiriusXM satellite radio, you must have a compatible satellite radio receiver. Go to www.siriusxm.com/sxmmarine for more information.

Weather Data Broadcasts
Weather data is broadcast at different intervals for each weather feature. For example, radar is broadcast at five-minute intervals. When the Garmin receiver is turned on, or when a different weather feature is selected, the receiver must receive new data before it can be shown. You might experience a delay before weather data or a different feature appears on the chart.

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

Weather Warnings and Weather Bulletins
When a marine weather warning, watch, weather advisory, weather bulletin, or other weather statement is issued, shading indicates the area to which the information applies. The aqua lines on the chart indicate the boundaries of marine forecasts, coastal forecasts, and offshore forecasts. Weather bulletins may consist of either weather watches or weather advisories.

To view information about the warning or bulletin, select the shaded area.

Changing the Weather Chart
1. From a combination screen or SmartMode layout with a weather chart, select Menu > Weather Menu > Change Weather.
2. Select a weather chart.

Viewing Precipitation Information
Precipitation ranging from very light rain and snow, up to strong thunderstorms, is indicated in varying shades and colors. Precipitation is shown either independently or with other weather information.

Select Charts > Precipitation.

The time stamp in the upper-left corner of the screen indicates the elapsed time since the weather data provider last updated the information.

Storm Cell and Lightning Information
Storm cell are represented by ⚡ on the weather precipitation chart. They indicate both the present position of a storm and the projected path of that storm in the immediate future.

NOTE: SiriusXM data is not available in all regions.
A Garmin SiriusXM satellite weather receiver and antenna receives satellite weather data and shows it on various Garmin devices, including the Navigation chart on a compatible chartplotter. The weather data for each feature comes from reputable weather data centers such as the National Weather Service and the Hydrometeorological Prediction Center. For more information, go to www.siriusxm.com/sxmmarine.

Red cones appear with a storm cell icon, and the widest part of each cone points in the direction of the projected path of the storm cell. The red lines in each cone indicate where the storm will most likely be in the near future. Each line represents 15 minutes.

Lightning strikes are represented by ⚡. Lightning appears on the weather precipitation chart if strikes were detected within the last seven minutes. The ground-based lightning detection network detects cloud-to-ground lightning only.

NOTE: This feature is not available on all devices and in all subscriptions.

Weather Fronts and Pressure Centers
Weather fronts appear as lines that indicate the leading edge of an air mass. Pressure-center symbols often appear near weather fronts.

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SiriusXM Equipment and Subscription Requirements
To use satellite weather, you must have a compatible satellite weather receiver. To use SiriusXM satellite radio, you must have a compatible satellite radio receiver. Go to www.garmin.com for more information. You must also have a valid subscription to receive satellite weather and radio. For more information, refer to the instructions for your satellite weather and radio equipment.

Weather Data Broadcasts
Weather data is broadcast at different intervals for each weather feature. For example, radar is broadcast at five-minute intervals. When the Garmin receiver is turned on, or when a different weather feature is selected, the receiver must receive new data before it can be shown. You might experience a delay before weather data or a different feature appears on the chart.

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City Forecasts
City forecasts appear as weather symbols. The forecast is viewed in 12-hour increments.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Weather</th>
<th>Symbol</th>
<th>Weather</th>
</tr>
</thead>
<tbody>
<tr>
<td>☁️</td>
<td>Partly cloudy</td>
<td>☂️</td>
<td>Rain (drizzle, sleet, showers)</td>
</tr>
<tr>
<td>🌧️</td>
<td>Windy</td>
<td>⚡️</td>
<td>Thunderstorms</td>
</tr>
<tr>
<td>🌡️</td>
<td>Smoke (dusty, hazy)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Viewing Fish Mapping Data
NOTE: This feature is not available on all products or subscriptions.
The Fish Mapping weather chart shows information that can help you locate fish species.
1. Select Charts > Fish Mapping.
2. If necessary, select Menu > Layers, and turn on and off information.

Viewing Sea Conditions
The Sea Conditions feature shows information about surface conditions, including winds, wave height, wave period, and wave direction.
Select Charts > Sea Conditions.

Surface Winds
Surface wind vectors appear on the Sea Conditions chart using wind barbs that indicate the direction from which the wind is blowing. A wind barb is a circle with a tail. The line or flag attached to the tail of the wind barb indicates the wind speed. A short line represents 5 knots, a long line represents 10 knots, and triangle represents 50 knots.

<table>
<thead>
<tr>
<th>Wind Barb</th>
<th>Wind Speed</th>
<th>Wind Barb</th>
<th>Wind Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌸</td>
<td>Calm</td>
<td>🌸</td>
<td>20 knots</td>
</tr>
<tr>
<td>🌸👉</td>
<td>5 knots</td>
<td>🌸👉</td>
<td>50 knots</td>
</tr>
<tr>
<td>🌸👉</td>
<td>10 knots</td>
<td>🌸👉</td>
<td>65 knots</td>
</tr>
<tr>
<td>🌸👉</td>
<td>15 knots</td>
<td>🌸👉</td>
<td></td>
</tr>
</tbody>
</table>

Wave Height, Wave Period, and Wave Direction
Wave heights for an area appear as variations in color. Different colors indicate different wave heights, as shown in the legend. The wave period indicates the time (in seconds) between successive waves. Wave period lines indicate areas that have the same wave period.
Wave directions appear on the chart using red arrows. The direction of each arrow pointer indicates the direction in which a wave is moving.

Viewing Forecast Sea Conditions Information for Another Time Period
1. Select Charts > Sea Conditions.
2. Select an option:
   - To view forecasted sea conditions for the next 36 hours, in 12-hour increments, select ⬇️ multiple times.
   - To view the forecasted sea conditions for the previous 36 hours, in 12-hour increments, select ⬆️ multiple times.

Viewing Sea Temperature Information
The Sea Temperature weather chart shows the present water temperature and present surface pressure conditions.
Select Charts > Sea Temperature.

Surface Pressure and Water Temperature Data
Surface-pressure information appears as pressure isobars and pressure centers. Isobars connect points of equal pressure. Pressure readings can help to determine weather and wind conditions. High-pressure areas are generally associated with fair weather. Low-pressure areas are generally associated with clouds and the chance of precipitation. Isobars packed closely together show a strong pressure gradient. Strong pressure gradients are associated with areas of stronger winds.
Pressure units are shown in millibars (mb), inches of Mercury (inHg), or hectopascals (hPa).
Colored shading indicates the surface temperature of the water, as shown in the legend in the corner of the display.

Changing the Sea Surface Temperature Color Range
You can change the color range dynamically to view higher resolution sea surface temperature readings.
1. Select Charts > Sea Temperature > Menu > Sea Temperature.
2. Select an option:
   - To allow the chartplotter to adjust the temperature range automatically, select Auto Configure.
     The chartplotter automatically finds the lower and upper limits for the current screen, and updates the temperature-color scale.
   - To enter the lower and upper limits for the temperature range, select Lower Limit or Upper Limit, and enter the lower or upper limit.

Visibility Information
Visibility is the forecast maximum horizontal distance that can be seen at the surface, as shown in the legend on the left of the screen. Variations in the visibility shading show the forecast change in surface visibility.
NOTE: This feature is not available on all devices and in all subscriptions.
Select Charts > Visibility.

Viewing Forecast Visibility Information for Another Time Period
1. Select Charts > Visibility.
2. Select an option:
   - To view the visibility forecast for the next 36 hours, in 12-hour increments, select ⬇️ multiple times.
   - To view the visibility forecast for the previous 36 hours, in 12-hour increments, select ⬆️ multiple times.

Viewing Buoy Reports
Report readings are taken from buoys and coastal observation stations. These readings are used to determine air temperature, dew point, water temperature, tide, wave height and period, wind direction and speed, visibility, and barometric pressure.
1. From a weather chart, select 🌊.
2. Select Buoy.

Viewing Local Weather Information near a Buoy
You can select an area near a buoy to view forecast information.
1. From a weather chart, select a location on the chart.
2. Select Local Weather.
3. Select an option:
   - To view present weather conditions from a local weather service, select Current Condition.
   - To view a local weather forecast, select Forecast.
   - To view surface wind and barometric pressure information, select Sea Surface.
To view wind and wave information, select Marine Bulletin.

Weather Overlay
The weather overlay superimposes weather and weather-related information on the Navigation chart, the Fishing chart, and the Perspective 3D chart view. The Navigation chart and the Fishing chart can show weather radar, height of cloud tops, lightning, weather buoys, county warnings, and hurricane warnings. The Perspective 3D chart view can show weather radar.

Weather overlay settings configured for use on one chart are not applied to another chart. The weather overlay settings for each chart must be configured separately.

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

Viewing Weather Subscription Information
You can view information about the weather services you have subscribed to and how many minutes have passed since the data for each service was updated.

From a weather chart, select Menu > Subscription.

Viewing Video

WARNING
Do not view video or photos while operating the vessel. Failure to pay attention to the conditions on the water can result in vessel damage, personal injury, or death.

Before you can view video, you must connect to a compatible source.

Compatible devices include video devices connected to the ports on the chartplotter or to the Garmin Marine Network, as well as supported network (IP-based) video cameras, encoders, and thermal cameras.

Select A/V, Gauges, Controls > Video.

Selecting a Video Source
1 From the video screen, select Menu > Source.
2 Select the source of the video feed.

Alternating Among Multiple Video Sources
If you have two or more video sources, you can alternate between them using a specific time interval.
1 From the video screen, select Menu > Source > Alternate.
2 Select Time, and select the amount of time each video appears.
3 Select Source, and select the video sources to add to the alternating sequence.

Networked Video Devices

NOTICE
A Garmin Power over Ethernet (PoE) Isolation Coupler (P/N 010-10580-10) must be used when connecting a PoE device, such as a FLIR® camera, to a Garmin Marine Network.

Connecting a PoE device directly to a Garmin Marine Network chartplotter damages the Garmin chartplotter and may damage the PoE device.

Before you can view and control video devices such as IP cameras, encoders, and thermal cameras using your chartplotter, you must have a compatible video device connected to your chartplotter, and you must have a marine network cable Power over Ethernet (PoE) isolation coupler. Go to garmin.com for a list of compatible devices or to purchase a PoE Isolation Coupler.

You can connect multiple supported video cameras and up to two video encoders to the Garmin Marine Network. You can select and view up to four video sources at once. Chartplotters with multiple composite built-in video inputs can display a single built-in video input only. When the cameras are connected, the network detects them automatically and displays them in the source list.

Using Video Presets on Networked Video Cameras
You can save, name, and activate video presets for each networked video source.

Saving Video Presets on a Networked Video Camera
1 From a video screen, touch the screen.
   The video controls appear on the screen.
2 Hold a video preset button.
   A green light indicates the setting is stored.

Naming Video Presets on a Networked Video Camera
1 From a video screen, select Menu > Video Setup > Presets.
2 Select a preset.
3 Select Rename.
4 Enter preset name.

Activating Video Presets on a Networked Video Camera
You can quickly return networked cameras to preset values.
1 From a video screen, touch the screen.
   The video controls appear on the screen.
2 Select a video preset.
   The camera restores the video settings saved for that preset.
   TIP: You can also save and activate presets using the video menu.

Camera Settings
Some cameras provide additional options to control the camera view.

NOTE: Not all options are available on all camera models and chartplotter models. Refer to the camera manual for a list of available features. You may need to update the camera software to use this feature.

From the infrared video screen, select Menu.

IR/Visible: Displays an infrared or visible camera image.
Scan: Surveys the surrounding area.
Freeze: Pauses the camera image.
Change Colors: Selects the color scheme of the infrared image.
Change Scene: Selects the infrared image mode, such as day, night, MOB, or docking.

Video Setup: Opens more video options.

Video Settings
Some cameras provide additional setup options.

NOTE: Not all options are available on all camera models and chartplotter models. You may need to update the camera software to use this feature.

From the video screen, select Menu > Video Setup.

Set Input: Associates the camera with a video source.
Mirror: Reverses the image like a rearview mirror.
Standby: Places the camera in standby mode to conserve power and protect the lens when not in use.
Home Position: Sets the home position of the camera.
Scan Speed: Sets how quickly the camera moves during a scan.
Scan Width: Sets the width of the image captured by the camera during a scan.
Stabilization: Stabilizes the picture using mechanical means.
Low Light: Optimizes the video for low-light environments.
Aspect: Sets the aspect ratio.
Defog: Optimizes the video for foggy environments.
Dynamic Range: Sets the range to wide or standard.
E. Stabilization: Stabilizes the picture using software image processing.
Light: Controls the camera's integrated light source to help illuminate the environment.
Name: Allows you to enter a new name for this camera.
FLIR™ Menu: Provides access to the settings for the camera.

**Associating the Camera to a Video Source**
You may need to associate the camera with a video source.
1. From the video screen, select **Menu > Source**.
2. Select the camera.
3. Select **Video Setup > Set Input**.
4. Select the video input.

**Video Camera Movement Control**

**NOTICE**
Do not aim the camera at the sun or extremely bright objects. Damage to the lens may occur.

Always use the chartplotter controls or buttons to pan and tilt the camera. Do not manually move the camera unit. Manually moving the camera may damage the camera.

**NOTE:** This feature is available only when a compatible camera is connected. You may need to update the camera software to use this feature.

You can control the movements of the connected video cameras that support panning, tilting, and zooming.

**Controlling Video Cameras Using On-Screen Controls**
On-screen controls allow you to control pan-tilt-zoom (PTZ) cameras. Refer to the camera manual for a list of available features.
1. From a video screen, touch the screen.
   The video controls appear on the screen.
2. Select an option:
   - To zoom in and out, use the zoom button.
   - To pan or tilt the camera, use the compass rose.
   **TIP:** Hold within the compass rose to continue to move the camera in the desired direction.

**Controlling a Video Camera Using Gestures**
When a networked video camera supports gesture responses, you can control pan-tilt-zoom cameras using gestures directly on the chartplotter screen. Check your camera user manual for a list of available features.

**TIP:** Using gestures allows video control without displaying the video controls.
1. From a video screen, touch the screen.
2. Select an option:
   - To zoom in and out with the camera, use pinch and zoom gestures.
   - To pan or tilt the camera, swipe the screen in the desired direction.

**Configuring the Video Appearance**

**NOTE:** Not all options are available on all camera models and chartplotter models.
1. From the video screen, select **Menu > Video Setup**.
2. Select an option:
   - To show the video using a stretched aspect ratio, select **Aspect > Stretch**. The video cannot be stretched beyond the dimensions provided by the connected video device, and it may not fill the entire screen.
   - To show the video using a standard aspect ratio, select **Aspect > Standard**.
   - To adjust the brightness, select **Brightness**, and select **Up, Down, or Auto**.
   - To adjust the color saturation, select **Saturation**, and select **Up, Down, or Auto**.
   - To adjust the contrast, select **Contrast**, and select **Up, Down, or Auto**.
   - To allow the chartplotter to automatically select the source format, select **Standard > Auto**.

**Garmin VIRB® Action Cameras**

**WARNING**
Do not view video or photos while operating the vessel. Failure to pay attention to the conditions on the water can result in vessel damage, personal injury, or death.

Most VIRB action cameras connect to the chartplotter from the camera menu (Connecting a VIRB Action Camera, page 53). The VIRB 360 camera connects using WPS (Connecting a VIRB 360 Action Camera, page 53).

In this manual, the term "VIRB action camera" refers to all models, except in the instructions on how to connect. In that case, as listed above, the term "VIRB 360 camera" refers to only the 360 model.

**Connecting a VIRB 360 Action Camera**
You can connect a VIRB 360 action camera to the chartplotter using WPS. If you are connecting a VIRB camera, connect through the camera settings (Connecting a VIRB Action Camera, page 53).
1. Set up the chartplotter’s Wi-Fi network (Setting Up the Wi-Fi Wireless Network, page 6).
2. Bring the camera near the chartplotter.
3. On the VIRB 360 camera main menu, select **Wireless > Wi-Fi**.
4. If necessary, select the Wi-Fi toggle switch to enable the Wi-Fi technology.
5. Press ▶ to select **WPS**, and press OK.
6. On the chartplotter, select **A/V, Gauges, Controls > VIRB® > ✓**.
   The camera searches for the Wi-Fi network and connects. You can control the camera using the chartplotter.

**Connecting a VIRB Action Camera**
You connect a VIRB action camera to the chartplotter using the camera settings. If you are connecting a VIRB 360 camera, connect through the VIRB app (Connecting a VIRB 360 Action Camera, page 53).
1. Set up the chartplotter’s Wi-Fi network (Setting Up the Wi-Fi Wireless Network, page 6).
2. From the VIRB camera main menu, select **Wireless > Wi-Fi > Status** to turn on Wi-Fi wireless technology.
3. Select **Mode > Connect**.
4. Select **Add New**.
The camera searches for nearby Wi-Fi networks.
5. Select the chartplotter’s Wi-Fi network, and enter the network password.
The app and the camera connect to the chartplotter’s Wi-Fi network.
You can control the camera using the chartplotter.

**Controlling the VIRB Action Camera with the Chartplotter**

Before you can control a VIRB action camera with the chartplotter, you must connect the devices using a wireless connection. You can connect up to five VIRB action cameras to the chartplotter. After you connect the VIRB action camera with the chartplotter, a new option is added to A/V, Gauges, Controls. You can start and stop recording on the VIRB action camera using the chartplotter.

**NOTE:** The VIRB image shown on the chartplotter is a in a lower resolution than the VIRB action camera records. To view the high-resolution video, view the video on a computer or television.

1. Select A/V, Gauges, Controls > VIRB®.
2. Select an option:
   - To take a still photograph, select 📷.
   - To begin recording, select 🎥. When recording, the remaining recording memory is shown.
   - To stop recording, select 🎥 again.
   - If you have more than one VIRB action camera connected, use the arrows to select a different action camera to control.
   - To view stored videos or images, select 📀.
   - To pan and tilt the VIRB 360, drag your finger on the screen.
   - To return the VIRB 360 view to the home position, select 🏡.

**Controlling the VIRB Action Camera Video Playback**

You can view VIRB action camera video and images using the chartplotter.

**NOTE:** The VIRB playback on the chartplotter is shown in the same quality as the live view on the chartplotter. To view the high-resolution video, view the video on a computer or television.

1. From the VIRB® screen, select 📀.
2. Wait a few seconds for the thumbnail images to load.
3. Select a video or image.
4. Control the playback using the on-screen buttons or menu options:
   - To stop the video, select ⏸.
   - To pause the video, select ⏸.
   - To replay the video, select 🔄.
   - To play the video, select 🎥.
   - To skip ahead or back in the video, drag the slider.

**Deleting a VIRB Video**

You can delete a video or image from the VIRB action camera.

1. Open the VIRB video or image to delete.
2. Select Menu > Delete File.

**Starting a VIRB Video Slideshow**

You can view a slideshow of the videos and images on the VIRB action camera.

1. From the VIRB® screen, select 📀.
2. Wait a few seconds for the thumbnail images to load.
3. Select a video or image.
4. Select Menu > Start Slideshow.

To stop the slideshow, select Menu > Stop Slideshow.

**VIRB Action Camera Settings**

**NOTE:** Not all options and settings apply to all camera models. Select A/V, Gauges, Controls > VIRB® > Menu.

**Name:** Allows you to enter a new name for the VIRB action camera.

**Recording:** Starts and stops recording.

**Take Photo:** Takes a still photograph.

**Playback:** Allows you to view video recordings and photos.

**Freeze:** Pauses the camera image.

**Sleep:** Puts the VIRB action camera into a low power mode to conserve battery power. Not available on the VIRB 360 camera.

**Video Setup:** Sets up the video (VIRB Action Camera Video Setup Settings, page 54).

**Edit Overlays:** Adjusts the data shown on the screen (Customizing the Data Overlays, page 4).

**VIRB Action Camera Video Setup Settings**

**NOTE:** Not all options and settings apply to all camera models.

Select A/V, Gauges, Controls > VIRB® > Menu > Video Setup.

**Aspect:** Sets the video aspect ratio.

**Video Mode:** Sets the video mode. For example, you can select the Slow-Mo option to shoot slow motion videos.

**Video Size:** Sets the size or pixel dimensions of videos.

**Video FPS:** Sets the frames per second.

**Video Timestamp:** Adds the date and time a video was recorded.

**Photo Timestamp:** Adds the date and time a photo was taken.

**Photo Size:** Sets the size or pixel dimensions of photos.

**Field of View:** Sets the zoom level.

**Lens Mode:** Sets which lens or lenses the camera uses while shooting video.

**Mirror:** Allows you to flip or mirror the video.

**Rotation:** Allows you to rotate the camera angle.

**Adding the VIRB Action Camera Controls to Other Screens**

Before you can control a VIRB action camera with the chartplotter, you must connect the devices using a wireless connection (Connecting a Wireless Device to the Chartplotter, page 6). You can add the VIRB action camera control bar to other screens. This allows you to start and stop recording from other functions in the chartplotter.

1. Open the screen to which you want to add the VIRB action camera control bar.
2. Select Menu > Edit Overlays > Bottom Bar > VIRB Bar.

When viewing a screen that has the VIRB action camera controls, you can select 📀 to open the full screen view of the VIRB action camera.

**Pairing the GC™ 100 Camera with a Garmin Chartplotter**

Before you can connect a wireless device to the chartplotter wireless network, you must configure the chartplotter wireless network.

1. With the camera within an unobstructed 76 m (250 ft.) of the chartplotter, quickly press 📀 three times.
2. On the chartplotter, select Settings > Communications > Wireless Devices > Garmin Camera > Start.
3. Follow the on-screen instructions.
Device Configuration

System Settings
Select Settings > System.

Sounds and Display: Adjusts the display and audio settings.

GPS: Provides information about the GPS satellites and settings.

System Information: Provides information about the devices on the network and the software version.

Station Information: Adjusts the setup of the station.

Auto Power Up: Controls which devices turn on automatically when power is applied.

Auto Power Off: Automatically turns off the system after it has been asleep for the selected length of time.

Simulator: Turns the simulator on or off and allows you to set the time, date, speed, and simulated location.

Sounds and Display Settings
Select Settings > System > Sounds and Display.

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

Backlight: Sets the backlight brightness. You can select the Auto option to adjust the backlight brightness automatically based on the ambient light.

Backlight Sync: Synchronizes the backlight brightness of other chartplotters in the station.

Color Mode: Sets the device to display day or night colors. You can select the Auto option to allow the device to set day or night colors automatically based on the time of day.

Video Out Aspect: Sets the video aspect ratio. The video cannot stretch beyond the dimensions provided by the connected video device, and it may not fill the entire screen.

Background: Sets the background image.

Startup Image: Sets the image that appears when you turn on the device.

GPS Settings
NOTE: Not all options are available on all models.
Select Settings > System > GPS.

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

GLONASS: Turns on or off GLONASS data (Russia satellite system). When the system is used in situations with poor sky visibility, GLONASS data can be used in combination with GPS to provide more accurate position information.

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

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

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

Galileo: Turns on or off Galileo data (European Union satellite system). When the system is used in situations with poor sky visibility, Galileo data can be used in combination with GPS to provide more accurate position information.

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 data.

Station Settings
Select Settings > System > Station Information.

Change Station: Sets the entire station to a new set of defaults based on the location of this station. You can also select to use this display as a stand-alone, individual display, instead of grouping it with other displays to make a station.

GRID™ Pairing: Allows you to pair a GRID remote input device with this station.

Display Order: Sets the order of the displays, which is important when using a GRID remote input device.

Autopilot Enabled: Allows you to control the autopilot from this device.

Reset Layouts: Resets the layouts in this station to the factory default settings.

Reset Station Settings: Resets all station settings to on all connected devices in the station to the factory default settings, and requires initial station setup.

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.

Viewing the Event Log
The event log shows a list of system events.

Select Settings > System > System Information > Event Log.

Viewing E-label Regulatory and Compliance Information
The label for this device is provided electronically. The e-label may provide regulatory information, such as identification numbers provided by the FCC or regional compliance markings, as well as applicable product and licensing information. Not available on all models.

1 Select Settings.
2 Select System.
3 Select Regulatory Information.

Preferences Settings
Select Settings > Preferences.

Units: Sets units of measure.

Language: Sets the on-screen text language.

Navigation: Sets navigation preferences.

Keyboard Layout: Arranges the keys on the on-screen keyboard.

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

Menu Bar Display: Shows or automatically hides the menu bar when it is not needed.

Units Settings
Select Settings > Preferences > 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.
Time: Sets the time format, time zone, and daylight saving time.

Navigation Settings

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

Select Settings > Preferences > Navigation.

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

Turn Transition: Adjusts how the chartplotter transitions to the next turn or leg of the route. You can set the transition to be based on time or distance before the turn. You can increase the time or distance 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.

Speed Sources: Sets the source for the speed readings.

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

Route Start: Selects a starting point for route navigation.

Auto Guidance Path Configurations

⚠️ CAUTION
The Preferred Depth and Vertical Clearance settings influence how the chartplotter calculates an Auto Guidance path. If an area has an unknown water depth or an unknown obstacle height, the Auto Guidance path is not calculated in that area. If an area at the beginning or the end of an Auto Guidance path is shallower than the Preferred Depth or lower than the Vertical Clearance settings, the Auto Guidance path may not be calculated in that area, depending on the map data. On the chart, the course through those areas appears as a gray line or a magenta and gray striped line. When your boat enters one of those areas, a warning message appears.

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

NOTE: Not all settings apply to all maps.

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

Preferred Depth: Sets the minimum water depth, based on chart depth data, that your boat can safely travel over.

NOTE: The minimum water depth for the premium charts (made before 2016) is 3 feet. If you enter a value of less than 3 feet, the charts only use depths of 3 feet for Auto Guidance path calculations.

Vertical Clearance: Sets the minimum height of a bridge or obstacle, based on chart data, that your boat can safely travel under.

Shoreline Distance: Sets how close to the shore you want the Auto Guidance path to be placed. The Auto Guidance path 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.

1 Dock your vessel or drop the anchor.
2 Select Settings > Preferences > Navigation > Auto Guidance > Shoreline Distance > Normal.
3 Select a destination that you have navigated to previously.
4 Select Navigate To > Auto Guidance.
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 > Navigation Options > Stop Navigation, and proceed to step 10.
   - If the Auto Guidance line is too close to known obstacles, select Settings > Preferences > Navigation > Auto Guidance > Shoreline Distance > Far.
   - If the turns in the Auto Guidance line are too wide, select Settings > Preferences > 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 > Navigation Options > Stop Navigation, and proceed to step 10.
   - If the Auto Guidance line is too close to known obstacles, select Settings > Preferences > Navigation > Auto Guidance > Shoreline Distance > Farthest.
   - If the turns in the Auto Guidance line are too wide, select Settings > Preferences > 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.

Communications Settings

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

Port Types: See Setting the Communication Format for Each NMEA 0183 Port, page 57.


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

XTE Precision: Adjusts the number of digits to the right of the decimal point for NMEA crosstalk error 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.

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

Diagnostics: Displays NMEA 0183 diagnostic information.

Configuring NMEA 0183 Output Sentences
You can enable and disable NMEA 0183 output sentences.
1. Select Settings > Communications > NMEA 0183 Setup > Output Sentences.
2. Select an option.
3. Select one or more NMEA 0183 output sentences, and select Back.
4. Repeat steps 2 and 3 to enable or disable additional output sentences.

Setting the Communication Format for Each NMEA 0183 Port
You can configure the communication format for each internal NMEA 0183 port when connecting your chartplotter to external NMEA 0183 devices, a computer, or other Garmin devices.
1. Select Settings > Communications > NMEA 0183 Setup > Port Types.
2. Select an input or output port.
3. Select a format:
   • To support the input or output of standard NMEA 0183 data, DSC, and sonar NMEA input support for the DPT, MTW, and VHW sentences, select NMEA Std.
   • To support the input or output of standard NMEA 0183 data for most AIS receivers, select NMEA High Speed.
   • To support the input or output of Garmin proprietary data for interfacing with Garmin software, select Garmin.
4. Repeat steps 2–3 to configure additional input or output ports.

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

Device List: Displays the devices connected to the network and allows you to set options for some transducers connected using the NMEA 2000 network.

Label Devices: Changes the labels for available connected devices.

Naming Devices and Sensors on the Network
You can name devices and sensors connected to the Garmin Marine Network and the NMEA 2000 network.
1. Select Settings > Communications.
2. Select Marine Network or NMEA 2000 Setup > Device List.
3. Select a device from the list on the left.
4. Select Review > Change Name.
5. Enter the name, and select Done.

Marine Network
The Marine Network allows you to share data from Garmin peripheral devices with the chartplotters quickly and easily. You can connect a chartplotter to the Marine Network to receive data from and share data with other devices and chartplotters that are compatible with the Marine Network.
Select Settings > Communications > Marine Network.

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.

Boundary Alarms: Disables and enables all boundary alarms.

Setting the Anchor Drag Alarm
You can set an alarm to sound if you have moved more than an allowable distance. This is very useful when anchoring overnight.
2. Select Alarm to turn on the alarm.
3. Select Set Radius, and select a distance on the chart.
4. Select Back.

System Alarms
Alarm Clock: Sets an alarm clock.
Unit 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.

Sonar Alarms
NOTE: Not all options are available on all transducers.
From an applicable sonar view, select Menu > Sonar Setup > Alarms.
You can also open the sonar alarms by selecting 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.

FrontVü Alarm: Sets an alarm to sound when the depth in front of the vessel is less than the specified value, which can help you avoid running aground (Setting the FrontVü Depth Alarm, page 31). This alarm is available only with Panoptix FrontVü transducers.

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.

Contour: Sets an alarm to sound when the transducer detects a suspended target within the specified depth from the surface of the water and from the bottom.

Fish
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.

Setting Weather Alarms
Before you can set weather alarms, you must have a compatible chartplotter connected to a weather device, such as a GXM device, and have a valid weather subscription.
1. Select Settings > Alarms > Weather.
2. Turn on alarms for specific weather events.

Setting the Fuel Alarm
Before you can set a fuel level alarm, a compatible fuel flow sensor must be connected to the chartplotter.
You can set an alarm to sound when the total amount of remaining onboard fuel reaches the level you specify.

2. Enter the remaining amount of fuel that triggers the alarm, and select Done.

**My Vessel Settings**

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

Select Settings > My Vessel.

**Transducers:** Shows all transducers on the network, allows you to change transducers, and allows you to view diagnostic information (*Selecting the Transducer Type*, page 26).

**Depth and Anchoring:** Allows you to enter information about the keel (*Setting the Keel Offset*, page 22) and the anchor. The Anchor Height value is the height of the anchor above the waterline. The Anchor Scope value is the ratio of the length of anchor rode in use to the vertical distance from the bow of the vessel to the bottom of the water. These anchor settings are used to calculate the Target Anchor Rode date field.

**Temp. Offset:** Allows you to set an offset value to compensate for the water temperature reading from a NMEA 0183 water-temperature sensor or a temperature-capable transducer (*Setting the Water Temperature Offset*, page 58).

**Calibrate Water Speed:** Calibrates the speed-sensing transducer or sensor (*Calibrating a Water-Speed Device*, page 58).

**Fuel Capacity:** Sets the combined fuel capacity of all the fuel tanks on your vessel (*Setting the Fuel Capacity of the Vessel*, page 44).

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

**CZone™:** Sets the digital switching circuits.

**SeaStar Instance:** Sets the digital switching circuits.

**System Profiles:** Allows you to save your system profile to a memory card and import system profile settings from a memory card. This can be helpful for charter or fleet vessels, and for sharing your setup information with a friend.

**Hull ID Number:** Allows you to enter the Hull Identification Number (HIN). The HIN might be permanently affixed to the upper starboard side of the transom or outboard side.

**Setting the Keel Offset**

You can enter a keel offset to compensate the water depth reading for the transducer installation location. This allows you to view the depth of the water below the keel or the true depth of the water, depending on your needs.

If you want to know the water depth below the keel or the lowest point of your boat and the transducer is installed at the water line or anywhere above the end of the keel, measure the distance from the transducer location to the keel of the boat. If you want to know the true water depth and the transducer is installed below the water line, measure the distance from the bottom of the transducer up to the water line.

**NOTE:** This option is only available when you have valid depth data.

1. Measure the distance:
   - If the transducer is installed at the water line [1] or anywhere above the end of the keel, measure the distance from the transducer location to the keel of the boat. Enter this value as a positive number.
   - If the transducer is installed at the bottom of the keel [2] and you want to know the true depth of the water, measure the distance from the transducer to the water line. Enter this value in as a negative number.

2. Complete an action:
   - If the transducer is connected to the chartplotter or a sonar module, select Settings > My Vessel > Depth and Anchoring > Keel Offset.
   - If the transducer is connected to the NMEA 2000 network, select Settings > Communications > NMEA 2000 Setup > Device List, select the transducer, and select Review > Keel Offset.

3. Select [+] if the transducer is installed at the water line, or select [-] if the transducer is installed at the bottom of the keel.

4. Enter the distance measured in step 1.

**Setting the Water Temperature Offset**

The temperature offset compensates for the temperature reading from a temperature sensor or temperature-capable transducer.

1. Measure the water temperature using a different temperature sensor or a temperature-capable transducer that is connected to the network.
2. Measure the water temperature using the 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 value is the temperature offset. Enter this value in step 5 as a positive number if the sensor measures the water temperature as being colder than it actually is. Enter this value in step 5 as a negative number if the sensor measures the water temperature as being warmer than it actually is.

4. Complete an action:
   - If the sensor or transducer is connected to the chartplotter or a speed-sensing transducer connected, you can calibrate that speed-sensing device to improve the accuracy of water-speed data displayed by the chartplotter.

**Calibrating a Water-Speed Device**

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

- If the sensor or transducer is connected to the chartplotter or a sonar module, select **Settings > My Vessel > Calibrate Water Speed**.
- If the sensor or transducer is connected to the NMEA 2000 network, select **Settings > Communications > NMEA 2000 Setup > Device List**, select the transducer, and select **Review > 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.

### Other Vessels 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).
- **Collision Alarm**: Sets the collision alarm ([Setting the Safe-Zone Collision Alarm, page 11](#)).
- **AIS-EPIRB Test**: Enables test signals from Emergency Position Indicating Radio Beacons (EPIRB).
- **AIS-MOB Test**: Enables test signals from man overboard (MOB) devices.
- **AIS-SART Test**: Enables test transmissions from Search and Rescue Transponders (SART).

### Settings that are Synced on the Garmin Marine Network

The following devices sync certain settings when connected to the Garmin Marine Network.

- ECHOMAP™ 70 series
- GPSMAP 507 series (software version 3.0 or later)
- GPSMAP 701 series (software version 3.0 or later)
- GPSMAP 702 series
- GPSMAP 800 series
- GPSMAP 902 series
- GPSMAP 1000 series
- GPSMAP 1002 series
- GPSMAP 1202 series
- GPSMAP 7400/7600 series
- GPSMAP 8400/8600/8700 series

The following settings are synced, if applicable, to the device.

- **Arrival**
- **Anchor Drag**
- **Off Course**
- **GPS Accuracy**
- **Shallow Water**
- **Deep Water** (Not available in the GPSMAP 8400/8600 series)
- **Water Temp.**
- **Contour** (Not available in echoMAP 70s and GPSMAP 507/701 series)
- **Fish**
- **Collision Alarm**

### General Settings: Configuration Settings

- **Auto Guidance Preferred Depth**
- **Auto Guidance Vertical Clearance**
- **Beeper**
- **Color Mode**
- **Keyboard Layout**
- **Language**
- **Map Datum**
- **North Reference**
- **Position Format**
- **System Units**
- **Calibrate Water Speed**
- **Radar Antenna Size**

### Chart Settings:

- **Chart Borders**
- **Hazard Colors**
- **Heading Line**
- **Land POIs**
- **Light Sectors**
- **Navaid Size**
- **Navaid Type**
- **Photo Points**
- **Preferred Depth**
- **Shallow Shading**
- **Service Points**
- **Vessel Icon** (Cannot be synced between all models)

### Restoring the Original Chartplotter Factory Settings

#### NOTE: This affects all devices on the network.

1 Select **Settings > System > System Information > Reset**.
2 Select an option:
   - To reset the device settings to the factory default values, select **Reset Default Settings**. This restores the default configuration settings, but does not remove saved user data, maps, or software updates.
   - To reset all settings in all devices in the station to the factory default values, select **Reset Station Settings**. This restores the default configuration settings, but does not remove saved user data, maps, or software updates.
   - To clear saved data, such as waypoints and routes, select **Delete User Data**. This does not affect maps or software updates.
   - To clear saved data and reset device settings to the factory default values, disconnect the chartplotter from the Garmin Marine Network, and select **Delete Data and Reset Settings**. This does not affect maps or software updates.

### Sharing and Managing User Data

You can share user data between compatible devices. User data includes waypoints, saved tracks, routes, and boundaries.

- You can share data across the Garmin Marine Network.
- You can share and manage user data using a memory card. You must have a memory card installed in the device. This
device supports up to a 32 GB memory card, formatted to FAT32.

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.

Selecting a File Type for Third-Party Waypoints and Routes
You can import and export waypoints and routes from third-party devices.
1 Insert a memory card into the card slot.
2 Select Info > User Data > Data Transfer > File Type.
3 Select GPX.
To transfer data with Garmin devices again, select the ADM file type.

Copying User Data from a Memory Card
You can transfer user data from a memory card to transfer from other devices. User data includes waypoints, routes, Auto Guidance paths, tracks, and boundaries.

NOTE: Only boundary files with an .adm extension are supported.
1 Insert a memory card into the card slot.
2 Select Info > User 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 User Data to a Memory Card
You can save user data to a memory card to transfer to other devices. User data includes waypoints, routes, Auto Guidance paths, tracks, and boundaries.
1 Insert a memory card into the card slot.
2 Select Info > User Data > Data Transfer > Save to Card.
3 If necessary, select the memory card to copy the data to.
4 Select an option:
   • To create a new file, select Add New File, and enter a name.
   • To add the information to an existing file, select the file from the list, and select Save to Card.

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 Settings > System > System Information > Copy Built-In Map.

Updating Built-In Maps with a Memory Card and Garmin Express
You can update the built-in maps using Garmin Express and a memory card.
1 Insert a memory card into the computer’s card slot.
2 Open the Garmin Express application.
   If you do not have the Garmin Express application installed on your computer, you can download it from garmin.com/express.
3 If necessary, register your device (Registering Your Device with Garmin Express, page 61).
4 Click Vessel > View Details.
5 Click Download next to the map to update.
6 Follow the on-screen instructions to complete the download.
7 Wait while the update downloads.
   The update may take an extended period of time.
8 After the download is complete, eject the card from the computer.
9 Insert the memory card into the card slot (Inserting Memory Cards, page 2).
10 On the chartplotter, select Settings > System > System Information > Update Built-In Map.
The updated chart appears on your chartplotter.

Backing Up Data to a Computer
1 Insert a memory card into the card slot.
2 Select Info > User Data > Data Transfer > Save to Card.
3 Select a file name from the list, or select Add New File.
4 Select Save to Card.
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 a 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 Info > User 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.
Registering Your Device with Garmin Express

NOTE: You should use the ActiveCaptain app to register the device (Getting Started with the ActiveCaptain App, page 5). Help us better support you by completing our online registration today. Keep the original sales receipt, or a photocopy, in a safe place.

1 Insert a memory card into the card slot (Inserting Memory Cards, page 2).
2 Wait a few moments.
   The chartplotter opens the card management page and creates a file named GarminDevice.xml in the Garmin folder on the memory card.
3 Remove the memory card.
4 Insert the memory card into your computer.
5 On your computer, go to garmin.com/express.
6 Follow the on-screen instructions to download, install, and open the Garmin Express application.
7 Select + > Add a Device.
8 While the application searches, select Sign In next to Have marine charts or devices? near the bottom of the screen.
9 Create or sign in to your Garmin account.
10 Follow the on-screen instructions to set up your vessel.
11 Select + > Add.
   The Garmin Express application searches the memory card for the device information.
12 Select Add Device to register the device.
   When registration is complete, the Garmin Express application searches for additional charts and chart updates for your device.

When you add devices to the chartplotter network, repeat these steps to register the new devices.

Software Update

NOTE: You can use the ActiveCaptain app to update the device software (Updating Software with the ActiveCaptain App, page 6). You may need to update the device software when you install the device or add an accessory to the device.

This device supports up to a 32 GB memory card, formatted to FAT32.

Before you update the software, you can check to the software version installed on your device (Viewing System Software Information, page 55). Then, you can go to garmin.com/support/software/marine.html, select See All Devices in this Bundle, and compare the installed software version to the software version listed for your product.

If the software on your device is older than the one listed on the website, follow the steps to load the software on a memory card (Loading the New Software on a Memory Card, page 61), and then update the device software (Updating the Device Software, page 61).

Loading the New Software on a Memory Card

You can copy the software update to a memory card using a computer that is running Windows® software or a Mac® computer.

1 Insert a memory card into the card slot on the computer.
2 Go to garmin.com/support/software/marine.html.
   TIP: You can also download updated owner's manuals to load on the chartplotter from this web page.
3 Select GPSMAP Series with SD Card.
4 Select Download next to GPSMAP Series with SD Card.
5 Read and agree to the terms.
6 If you are on a Mac computer, select Go to Mac download page.
7 Select Download.
8 If necessary, choose a location, and select Save.
9 Double-click the downloaded file.
10 If you are on a computer running Windows software, select Next, select the drive associated with the memory card, and select Next > Finish.
   A Garmin folder containing the software update is created on the memory card. The software update can take several minutes to load onto the memory card.
11 If you are on a Mac computer, copy the Garmin folder to the root directory of the memory card.
   The software update can take several minutes to load onto the memory card.

After loading the update onto the memory card, install the software on the chartplotter (Updating the Device Software, page 61).

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 (Loading the New Software on a Memory Card, page 61).

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.
5 When prompted, leave the memory card in place and restart the chartplotter manually.
6 Remove the memory card.
   NOTE: If the memory card is removed before the device restarts fully, the software update is not complete.

Pairing the GRID Device with the Chartplotter from the Chartplotter

NOTE: These steps are applicable to both the GRID device and the GRID 20 device.

Before you can pair the GRID 20 device with the chartplotter to make the data connection, you must supply power using batteries, the included power cable, or a NMEA 2000 network connection.

Before you can pair the GRID device with the chartplotter, you must connect it to the Garmin Marine Network.

1 Select Settings > System > Station Information > GRID™ Pairing > Add.
2 Select an action:
   • On the GRID remote input device, press SELECT.
   • On the GRID 20 remote input device, press ▼ and ▲ until the remote control beeps three times.

Pairing the GRID Device with the Chartplotter from the GRID Device

NOTE: This is not applicable to the GRID 20 device.
1 On the GRID remote input device, press + and HOME at the same time.
   A selection page opens on all of the chartplotters on the Garmin Marine Network.
2 Rotate the wheel on the GRID remote input device to highlight Select on the chartplotter you want to control with the GRID remote input device.
3 Press SELECT.

Rotating the GRID Remote Input Device
For certain installation situations, you can rotate the orientation of the GRID device.

NOTE: This is not applicable to the GRID 20 device.
1 Select Settings > Communications > Marine Network.
2 Select the GRID device.

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 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.

Viewing Images on a Memory card
You can view images that are saved on a memory card. You can view .jpg, .png, and .bmp files.
1 Insert a memory card into the card slot.
2 Select Info > Image Viewer.
3 Select the folder containing the images.
4 Wait a few seconds for the thumbnail images to load.
5 Select an image.
6 Use the arrows to scroll through the images.
7 If necessary, select Menu > Start Slideshow.

Screenshots
You can capture a screenshot of any screen shown on your chartplotter as a .png file. You can transfer the screenshot to your computer.

Capturing Screenshots
1 Insert a memory card into the card slot.
2 Select Settings > Preferences > 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.
• Make sure the device has a clear view of the sky so the 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.

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 at least 12 V.
   To check the voltage, measure the female power and ground sockets of the power cable for DC voltage. If the voltage is less than 12 V, the device will not turn on.
• If the device is receiving enough power but does not turn on, contact Garmin product 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. This is 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 originally used to create that map. Most often this is found near the map key.
2 Select Settings > Preferences > Units.
3 Select the correct map datum and position format settings.
4 Create the waypoint again.

Contacting Garmin Support
• Go to support.garmin.com for help and information, such as product manuals, frequently asked questions, videos, and customer support.
• In the USA, call 913-397-8200 or 1-800-800-1020.
• In the UK, call 0808 238 0000.
• In Europe, call +44 (0) 870 850 1241.
Specifications

**GPSMAP 7x07 Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W × H × D)</td>
<td>22.2 × 14.2 × 6.1 cm (8.75 × 5.6 × 2.6 in.)</td>
</tr>
<tr>
<td>Display size (W × H)</td>
<td>15.5 × 8.6 cm (6.1 × 3.4 in.)</td>
</tr>
<tr>
<td>Display resolution</td>
<td>WVGA, 800 × 400 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>1.13 kg (2.5 lb.)</td>
</tr>
<tr>
<td>Compass-safe distance</td>
<td>80 cm (31.5 in.)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>From -15° to 55°C (from 5° to 131°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Polycarbonate plastic and die-cast aluminum</td>
</tr>
<tr>
<td>Water rating</td>
<td>IEC 60529 IPX7</td>
</tr>
<tr>
<td></td>
<td>The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to <a href="http://www.garmin.com/waterrating">www.garmin.com/waterrating</a>.</td>
</tr>
<tr>
<td>Fuse</td>
<td>6 A, 125 V fast-acting</td>
</tr>
<tr>
<td>Input voltage</td>
<td>From 10 to 32 Vdc</td>
</tr>
<tr>
<td>Max. power usage at 10 Vdc</td>
<td>24 W</td>
</tr>
<tr>
<td>Typical current draw at 12 Vdc</td>
<td>1.5 A</td>
</tr>
<tr>
<td>Max. current draw at 12 Vdc</td>
<td>2.0 A</td>
</tr>
<tr>
<td>NMEA 2000 LEN @ 9 Vdc</td>
<td>2</td>
</tr>
<tr>
<td>NMEA 2000 Draw</td>
<td>75 mA max.</td>
</tr>
<tr>
<td>Max. waypoints</td>
<td>5,000</td>
</tr>
<tr>
<td>Max. routes</td>
<td>100</td>
</tr>
<tr>
<td>Max. active track points</td>
<td>50,000 points, 50 saved tracks</td>
</tr>
<tr>
<td>Memory card</td>
<td>2 microSD card slots; 32 GB max. card size</td>
</tr>
<tr>
<td>Wireless frequency and protocols</td>
<td>Wi-Fi, ANT®, and Bluetooth technologies 2.4 GHz @ 19.5 dBm nominal</td>
</tr>
</tbody>
</table>

**GPSMAP 7x08 Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W × H × D)</td>
<td>24.4 × 16.0 × 7.6 cm (9.6 × 6.3 × 3.0 in.)</td>
</tr>
<tr>
<td>Display size (W × H)</td>
<td>17.8 × 10.2 cm (7.0 × 4.0 in.)</td>
</tr>
<tr>
<td>Display resolution</td>
<td>WVGA, 1024 × 600 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>1.41 kg (3.1 lb.)</td>
</tr>
<tr>
<td>Compass-safe distance</td>
<td>70 cm (27.6 in.)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>From -15° to 55°C (from 5° to 131°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Polycarbonate plastic and die-cast aluminum</td>
</tr>
<tr>
<td>Water rating</td>
<td>IEC 60529 IPX7</td>
</tr>
<tr>
<td></td>
<td>The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to <a href="http://www.garmin.com/waterrating">www.garmin.com/waterrating</a>.</td>
</tr>
<tr>
<td>Fuse</td>
<td>6 A, 125 V fast-acting</td>
</tr>
<tr>
<td>Input voltage</td>
<td>From 10 to 32 Vdc</td>
</tr>
<tr>
<td>Max. power usage at 10 Vdc</td>
<td>27 W</td>
</tr>
<tr>
<td>Typical current draw at 12 Vdc</td>
<td>1.8 A</td>
</tr>
<tr>
<td>Max. current draw at 12 Vdc</td>
<td>2.3 A</td>
</tr>
<tr>
<td>NMEA 2000 LEN @ 9 Vdc</td>
<td>2</td>
</tr>
<tr>
<td>NMEA 2000 Draw</td>
<td>75 mA max.</td>
</tr>
<tr>
<td>Max. waypoints</td>
<td>5,000</td>
</tr>
<tr>
<td>Max. routes</td>
<td>100</td>
</tr>
<tr>
<td>Max. active track points</td>
<td>50,000 points, 50 saved tracks</td>
</tr>
<tr>
<td>Wireless frequency and protocols</td>
<td>Wi-Fi, ANT®, and Bluetooth technologies 2.4 GHz @ 19.5 dBm nominal</td>
</tr>
</tbody>
</table>

**GPSMAP 7x09 Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W × H × D)</td>
<td>28.9 × 20.6 × 7.6 cm (11.4 × 8.1 × 3.1 in.)</td>
</tr>
<tr>
<td>Display size (W × H)</td>
<td>21.8 × 13.5 cm (8.6 × 5.3 in.)</td>
</tr>
<tr>
<td>Display resolution</td>
<td>WXGA, 1024 × 600 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>2.06 kg (4.5 lb.)</td>
</tr>
<tr>
<td>Compass-safe distance</td>
<td>65 cm (25.6 in.)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>From -15° to 55°C (from 5° to 131°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Polycarbonate plastic and die-cast aluminum</td>
</tr>
<tr>
<td>Water rating</td>
<td>IEC 60529 IPX7</td>
</tr>
<tr>
<td></td>
<td>The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to <a href="http://www.garmin.com/waterrating">www.garmin.com/waterrating</a>.</td>
</tr>
<tr>
<td>Fuse</td>
<td>6 A, 125 V fast-acting</td>
</tr>
<tr>
<td>Input voltage</td>
<td>From 10 to 32 Vdc</td>
</tr>
<tr>
<td>Max. power usage at 10 Vdc</td>
<td>30 W</td>
</tr>
<tr>
<td>Typical current draw at 12 Vdc</td>
<td>1.95 A</td>
</tr>
<tr>
<td>Max. current draw at 12 Vdc</td>
<td>2.5 A</td>
</tr>
<tr>
<td>NMEA 2000 LEN @ 9 Vdc</td>
<td>2</td>
</tr>
<tr>
<td>NMEA 2000 Draw</td>
<td>75 mA max.</td>
</tr>
<tr>
<td>Max. waypoints</td>
<td>5,000</td>
</tr>
<tr>
<td>Max. routes</td>
<td>100</td>
</tr>
<tr>
<td>Max. active track points</td>
<td>50,000 points, 50 saved tracks</td>
</tr>
<tr>
<td>Memory card</td>
<td>2 microSD card slots; 32 GB max. card size</td>
</tr>
<tr>
<td>Wireless frequency and protocols</td>
<td>Wi-Fi, ANT®, and Bluetooth technologies 2.4 GHz @ 19.5 dBm nominal</td>
</tr>
</tbody>
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**GPSMAP 7x10 Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W × H × D)</td>
<td>22.2 × 14.2 × 6.1 cm (8.75 × 5.6 × 2.6 in.)</td>
</tr>
<tr>
<td>Display size (W × H)</td>
<td>15.5 × 8.6 cm (6.1 × 3.4 in.)</td>
</tr>
<tr>
<td>Display resolution</td>
<td>WVGA, 800 × 400 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>1.13 kg (2.5 lb.)</td>
</tr>
<tr>
<td>Compass-safe distance</td>
<td>80 cm (31.5 in.)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>From -15° to 55°C (from 5° to 131°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Polycarbonate plastic and die-cast aluminum</td>
</tr>
<tr>
<td>Water rating</td>
<td>IEC 60529 IPX7</td>
</tr>
<tr>
<td></td>
<td>The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to <a href="http://www.garmin.com/waterrating">www.garmin.com/waterrating</a>.</td>
</tr>
<tr>
<td>Fuse</td>
<td>6 A, 125 V fast-acting</td>
</tr>
<tr>
<td>Input voltage</td>
<td>From 10 to 32 Vdc</td>
</tr>
<tr>
<td>Max. power usage at 10 Vdc</td>
<td>27 W</td>
</tr>
<tr>
<td>Typical current draw at 12 Vdc</td>
<td>1.8 A</td>
</tr>
<tr>
<td>Max. current draw at 12 Vdc</td>
<td>2.3 A</td>
</tr>
<tr>
<td>NMEA 2000 LEN @ 9 Vdc</td>
<td>2</td>
</tr>
<tr>
<td>NMEA 2000 Draw</td>
<td>75 mA max.</td>
</tr>
<tr>
<td>Max. waypoints</td>
<td>5,000</td>
</tr>
<tr>
<td>Max. routes</td>
<td>100</td>
</tr>
<tr>
<td>Max. active track points</td>
<td>50,000 points, 50 saved tracks</td>
</tr>
</tbody>
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**GPSMAP 7x12 Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W × H × D)</td>
<td>33.0 × 22.6 × 7.9 cm (13.0 × 8.9 × 3.1 in.)</td>
</tr>
<tr>
<td>Display size (W × H)</td>
<td>26.2 × 16.3 cm (10.3 × 6.4 in.)</td>
</tr>
<tr>
<td>Display resolution</td>
<td>WXGA, 1280 × 800 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>2.72 kg (6.0 lb.)</td>
</tr>
<tr>
<td>Compass-safe distance</td>
<td>65 cm (25.6 in.)</td>
</tr>
<tr>
<td>Clearance to nearest obstruction</td>
<td>9.5 cm (33/4 in.)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>From -15° to 55°C (from 5° to 131°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Polycarbonate plastic and die-cast aluminum</td>
</tr>
<tr>
<td>Water rating</td>
<td>IEC 60529 IPX7</td>
</tr>
<tr>
<td></td>
<td>The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to <a href="http://www.garmin.com/waterrating">www.garmin.com/waterrating</a>.</td>
</tr>
<tr>
<td>Fuse</td>
<td>6 A, 125 V fast-acting</td>
</tr>
<tr>
<td>Input voltage</td>
<td>From 10 to 32 Vdc</td>
</tr>
<tr>
<td>Max. power usage at 10 Vdc</td>
<td>36 W</td>
</tr>
<tr>
<td>Typical current draw at 12 Vdc</td>
<td>2.5 A</td>
</tr>
<tr>
<td>Max. current draw at 12 Vdc</td>
<td>3.0 A</td>
</tr>
<tr>
<td>NMEA 2000 LEN @ 9 Vdc</td>
<td>2</td>
</tr>
<tr>
<td>NMEA 2000 Draw</td>
<td>75 mA max.</td>
</tr>
<tr>
<td>Max. waypoints</td>
<td>5,000</td>
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</table>

1The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to [www.garmin.com/waterrating](http://www.garmin.com/waterrating).
Max. routes 100
Max. active track points 50,000 points, 50 saved tracks
Memory card 2 SD card slots; 32 GB max. card size
Wireless frequency 2.4 GHz @ 19.5 dBm nominal

GPSMAP 7x16 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (W × H × D)</td>
<td>42.7 × 27.5 × 8.6 cm (16.8 × 10.8 × 3.4 in.)</td>
</tr>
<tr>
<td>Display size (W × H)</td>
<td>34.5 × 19.3 cm (13.6 × 7.6 in.)</td>
</tr>
<tr>
<td>Display resolution</td>
<td>WXGA, 1024 × 800 pixels</td>
</tr>
<tr>
<td>Weight</td>
<td>4.3 kg (9.5 lb.)</td>
</tr>
<tr>
<td>Temperature range</td>
<td>From -15°C to 55°C (from 5°F to 131°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Polycarbonate plastic and die-cast aluminum</td>
</tr>
<tr>
<td>Water rating</td>
<td>IEC 60529 IPX7 The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to <a href="http://www.garmin.com/waterrating">www.garmin.com/waterrating</a>.</td>
</tr>
<tr>
<td>Input voltage</td>
<td>From 10 to 32 Vdc</td>
</tr>
<tr>
<td>Fuse</td>
<td>8 A, 125 V fast-acting</td>
</tr>
<tr>
<td>Max. power usage at 10 Vdc</td>
<td>57.2 W</td>
</tr>
<tr>
<td>Typical current draw at 12 Vdc</td>
<td>3.82 A</td>
</tr>
<tr>
<td>Max. current draw at 12 Vdc</td>
<td>5.24 A</td>
</tr>
<tr>
<td>NMEA 2000 LEN @ 9 Vdc</td>
<td>2</td>
</tr>
<tr>
<td>NMEA 2000 Draw</td>
<td>75 mA max.</td>
</tr>
<tr>
<td>Max. waypoints</td>
<td>5,000</td>
</tr>
<tr>
<td>Max. routes</td>
<td>100</td>
</tr>
<tr>
<td>Max. active track points</td>
<td>50,000 points, 50 saved tracks</td>
</tr>
<tr>
<td>Memory card</td>
<td>2 SD card slots; 32 GB max. card size</td>
</tr>
<tr>
<td>Wireless frequency and protocols</td>
<td>Wi-Fi, ANT, and Bluetooth technologies 2.4 GHz @ 19.5 dBm nominal</td>
</tr>
</tbody>
</table>

NMEA 2000 PGN Information

Transmit and Receive

<table>
<thead>
<tr>
<th>PGN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>059392</td>
<td>ISO acknowledgment</td>
</tr>
<tr>
<td>059904</td>
<td>ISO request</td>
</tr>
<tr>
<td>060160</td>
<td>ISO transport protocol: Data transfer</td>
</tr>
<tr>
<td>060416</td>
<td>ISO transport protocol: Connection management</td>
</tr>
<tr>
<td>060928</td>
<td>ISO address claimed</td>
</tr>
<tr>
<td>065240</td>
<td>Commanded address</td>
</tr>
<tr>
<td>126208</td>
<td>Request group function</td>
</tr>
<tr>
<td>126996</td>
<td>Product information</td>
</tr>
<tr>
<td>126998</td>
<td>Configuration information</td>
</tr>
<tr>
<td>127237</td>
<td>Heading/track control</td>
</tr>
<tr>
<td>127245</td>
<td>Rudder</td>
</tr>
<tr>
<td>127250</td>
<td>Vessel heading</td>
</tr>
<tr>
<td>127258</td>
<td>Magnetic variance</td>
</tr>
<tr>
<td>127488</td>
<td>Engine parameters: Rapid update</td>
</tr>
<tr>
<td>127489</td>
<td>Engine parameters: Dynamic</td>
</tr>
<tr>
<td>127493</td>
<td>Transmission parameters: Dynamic</td>
</tr>
<tr>
<td>127505</td>
<td>Fluid level</td>
</tr>
<tr>
<td>127508</td>
<td>Battery status</td>
</tr>
<tr>
<td>128259</td>
<td>Speed: Water referenced</td>
</tr>
<tr>
<td>128267</td>
<td>Water depth</td>
</tr>
<tr>
<td>129025</td>
<td>Position: Rapid update</td>
</tr>
</tbody>
</table>

Transmit

<table>
<thead>
<tr>
<th>PGN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>129026</td>
<td>COG and SOG: Rapid update</td>
</tr>
<tr>
<td>129029</td>
<td>GNSS position data</td>
</tr>
<tr>
<td>129283</td>
<td>Cross track error</td>
</tr>
<tr>
<td>129284</td>
<td>Navigation data</td>
</tr>
<tr>
<td>129539</td>
<td>GNSS DOPs</td>
</tr>
<tr>
<td>129540</td>
<td>GNSS satellites in view</td>
</tr>
<tr>
<td>130060</td>
<td>Label</td>
</tr>
<tr>
<td>130306</td>
<td>Wind data</td>
</tr>
<tr>
<td>130310</td>
<td>Environmental parameters (obsolete)</td>
</tr>
<tr>
<td>130311</td>
<td>Environmental parameters (obsolete)</td>
</tr>
<tr>
<td>130312</td>
<td>Temperature (obsolete)</td>
</tr>
</tbody>
</table>

Receive

<table>
<thead>
<tr>
<th>PGN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>065030</td>
<td>Generator average basic AC quantities (GAAC)</td>
</tr>
<tr>
<td>126983</td>
<td>Alert</td>
</tr>
<tr>
<td>126985</td>
<td>Alert text</td>
</tr>
<tr>
<td>126987</td>
<td>Alert threshold</td>
</tr>
<tr>
<td>126988</td>
<td>Alert value</td>
</tr>
<tr>
<td>126992</td>
<td>System time</td>
</tr>
<tr>
<td>127251</td>
<td>Rate of turn</td>
</tr>
<tr>
<td>127257</td>
<td>Altitude</td>
</tr>
<tr>
<td>127498</td>
<td>Engine parameters: Static</td>
</tr>
<tr>
<td>127503</td>
<td>AC input status (obsolete)</td>
</tr>
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<td>127504</td>
<td>AC output status (obsolete)</td>
</tr>
<tr>
<td>127506</td>
<td>DC detailed status</td>
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<td>127507</td>
<td>Charger status</td>
</tr>
<tr>
<td>127509</td>
<td>Inverter status</td>
</tr>
<tr>
<td>128000</td>
<td>Nautical leeway angle</td>
</tr>
<tr>
<td>128275</td>
<td>Distance log</td>
</tr>
<tr>
<td>129038</td>
<td>AIS class A position report</td>
</tr>
<tr>
<td>129039</td>
<td>AIS class B position report</td>
</tr>
<tr>
<td>129040</td>
<td>AIS class B extended position report</td>
</tr>
<tr>
<td>129044</td>
<td>Datum</td>
</tr>
<tr>
<td>129285</td>
<td>Navigation: Route, waypoint information</td>
</tr>
<tr>
<td>129794</td>
<td>AIS class A static and voyage related data</td>
</tr>
<tr>
<td>129798</td>
<td>AIS SAR aircraft position report</td>
</tr>
<tr>
<td>129799</td>
<td>Radio frequency/mode/power</td>
</tr>
<tr>
<td>129802</td>
<td>AIS safety-related broadcast message</td>
</tr>
<tr>
<td>129808</td>
<td>DSC call Information</td>
</tr>
<tr>
<td>129809</td>
<td>AIS class B &quot;CS&quot; static data report, part A</td>
</tr>
<tr>
<td>129810</td>
<td>AIS class B &quot;CS&quot; static data report, part B</td>
</tr>
<tr>
<td>130313</td>
<td>Humidity</td>
</tr>
<tr>
<td>130314</td>
<td>Actual pressure</td>
</tr>
<tr>
<td>130316</td>
<td>Temperature: Extended range</td>
</tr>
<tr>
<td>130576</td>
<td>Trim tab status</td>
</tr>
<tr>
<td>130577</td>
<td>Direction data</td>
</tr>
</tbody>
</table>

Appendix
NMEA 0183 Information

Transmit

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPAPB</td>
<td>APB: Heading or track controller (autopilot) sentence &quot;B&quot;</td>
</tr>
<tr>
<td>GBOD</td>
<td>BOD: Bearing (origin to destination)</td>
</tr>
<tr>
<td>GPBWC</td>
<td>BWC: Bearing and distance to waypoint</td>
</tr>
<tr>
<td>GPVGA</td>
<td>VWA: Global positioning system fix data</td>
</tr>
<tr>
<td>GPYLL</td>
<td>YLL: Geographic position (latitude and longitude)</td>
</tr>
<tr>
<td>GPGSA</td>
<td>GSA: GNSS DOP and active satellites</td>
</tr>
<tr>
<td>GPGSV</td>
<td>GSV: GNSS satellites in view</td>
</tr>
<tr>
<td>GPRMB</td>
<td>RMB: Recommended minimum navigation information</td>
</tr>
<tr>
<td>GPRMC</td>
<td>RMC: Recommended minimum specific GNSS data</td>
</tr>
<tr>
<td>GPWPL</td>
<td>WPL: Waypoint location</td>
</tr>
<tr>
<td>GPRVE</td>
<td>RTE: Routes</td>
</tr>
<tr>
<td>GPVET</td>
<td>VTG: Course over ground and ground speed</td>
</tr>
<tr>
<td>GPRPL</td>
<td>WPL: Waypoint location</td>
</tr>
<tr>
<td>GPRME</td>
<td>E: Estimated error</td>
</tr>
<tr>
<td>GPRMM</td>
<td>M: Map datum</td>
</tr>
<tr>
<td>GPRMZ</td>
<td>Z: Altitude</td>
</tr>
<tr>
<td>SDDBT</td>
<td>DBT: Depth below transducer</td>
</tr>
<tr>
<td>SDDPT</td>
<td>DPT: Depth</td>
</tr>
<tr>
<td>SDMTW</td>
<td>MTW: Water temperature</td>
</tr>
<tr>
<td>SDVHW</td>
<td>VHW: Water speed and heading</td>
</tr>
</tbody>
</table>

Receive

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPT</td>
<td>Depth</td>
</tr>
<tr>
<td>DBT</td>
<td>Depth below transducer</td>
</tr>
<tr>
<td>MTW</td>
<td>Water temperature</td>
</tr>
<tr>
<td>VHW</td>
<td>Water speed and heading</td>
</tr>
<tr>
<td>WPL</td>
<td>Waypoint location</td>
</tr>
<tr>
<td>DSC</td>
<td>Digital selective calling information</td>
</tr>
<tr>
<td>DSE</td>
<td>Expanded digital selective calling</td>
</tr>
<tr>
<td>HDG</td>
<td>Heading, deviation, and variation</td>
</tr>
<tr>
<td>HDM</td>
<td>Heading, magnetic</td>
</tr>
<tr>
<td>MWD</td>
<td>Wind direction and speed</td>
</tr>
<tr>
<td>MDA</td>
<td>Meteorological composite</td>
</tr>
<tr>
<td>MWV</td>
<td>Wind speed and angle</td>
</tr>
<tr>
<td>VDM</td>
<td>AIS VHF data-link message</td>
</tr>
</tbody>
</table>

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)

J1939 Information

The chartplotter can receive J1939 sentences. The chartplotter cannot transmit over the J1939 network.

<table>
<thead>
<tr>
<th>Description</th>
<th>PGN</th>
<th>SPN</th>
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<tbody>
<tr>
<td>Engine percent load at Current speed</td>
<td>61443</td>
<td>92</td>
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<tr>
<td>Engine speed</td>
<td>61444</td>
<td>190</td>
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<td>Engine manifold exhaust gas temperature - right manifold</td>
<td>65031</td>
<td>2433</td>
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<tr>
<td>Engine manifold exhaust gas temperature - left manifold</td>
<td>65031</td>
<td>2434</td>
</tr>
<tr>
<td>Engine auxiliary coolant</td>
<td>65172</td>
<td></td>
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<tr>
<td>Active diagnostic trouble codes</td>
<td>65226</td>
<td></td>
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<tr>
<td>Vehicle distance</td>
<td>65248</td>
<td></td>
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<tr>
<td>Water in fuel indicator</td>
<td>65279</td>
<td></td>
</tr>
<tr>
<td>Engine wait to start lamp</td>
<td>65252</td>
<td>1081</td>
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<tr>
<td>Engine over speed test</td>
<td>65252</td>
<td>2812</td>
</tr>
<tr>
<td>Engine air shutoff command status</td>
<td>65252</td>
<td>2813</td>
</tr>
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