

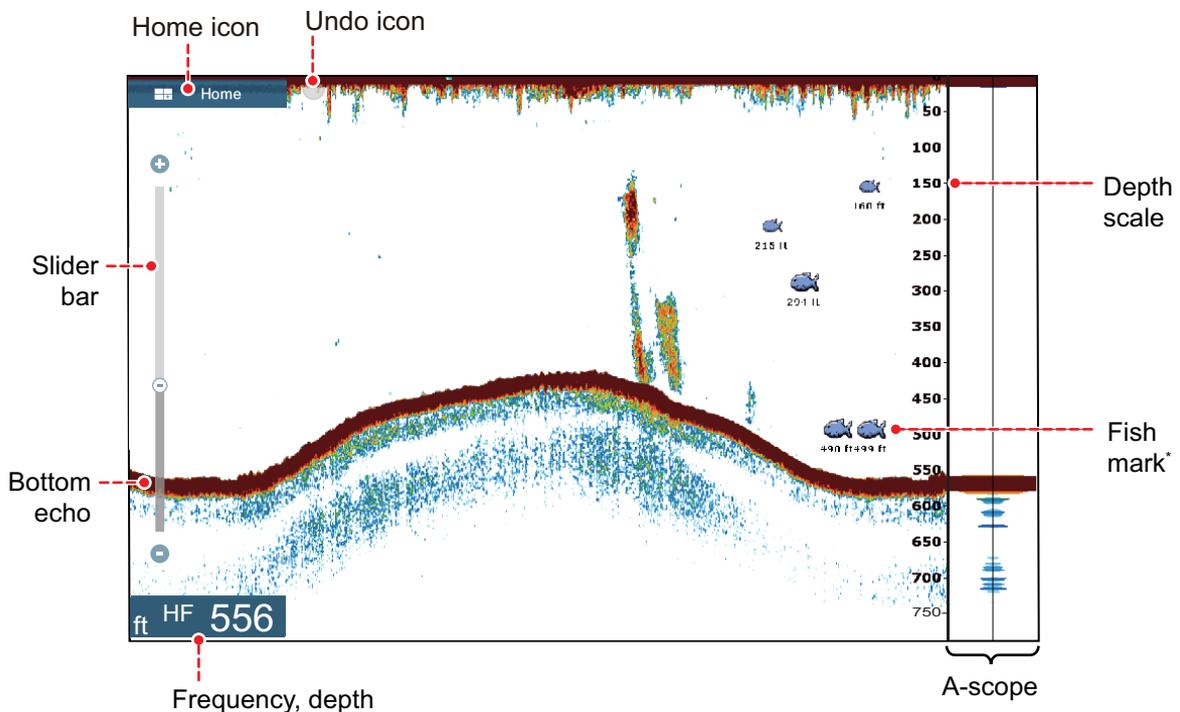
1.13 Sounder (Fish Finder) Introduction

The sounder display provides a picture of the echoes found by the fish finder. Echoes are scrolled across the screen from the right position to the left position.

The echoes at the right position are the current echoes. These echoes can be from separate fish, a school of fish, or the bottom. Depth to the bottom is indicated always, provided the gain is set correctly. You can scroll the echoes backward.

Both low and high TX frequencies are provided. (Frequencies depend on the transducer connected.) The low frequency has a wide detection area, which is for general detection and understanding bottom conditions. The high frequency has a narrow beam that helps you inspect fish.

The range, gain, clutter and TVG can be adjusted automatically according to your purpose (cruising or fishing) to let you do other tasks.

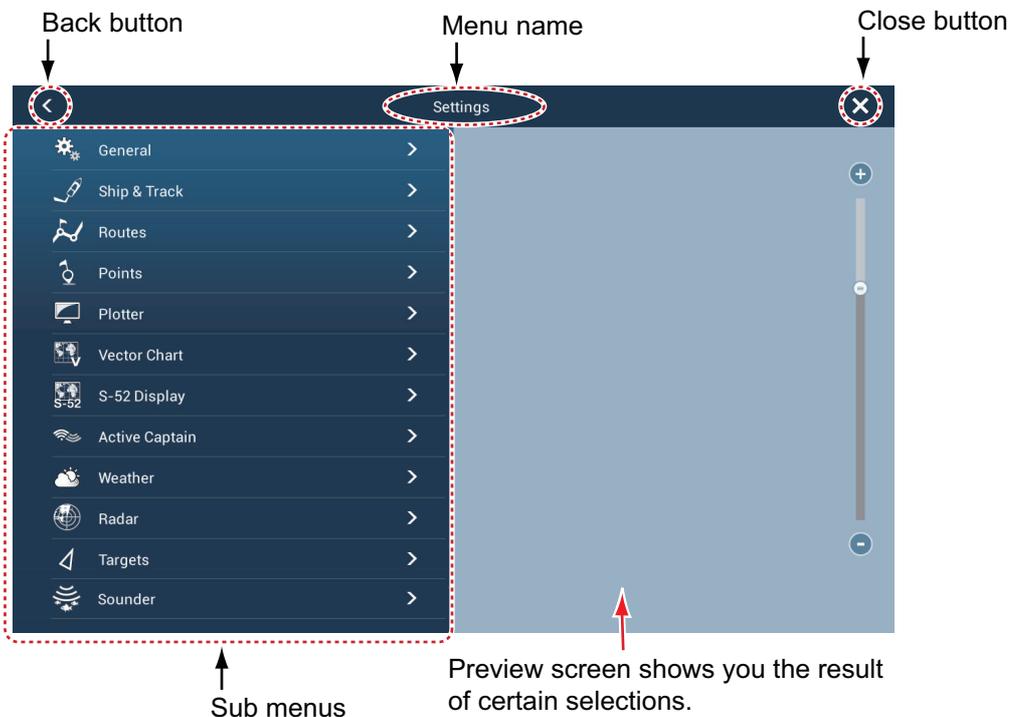


* Requires appropriate transducer.

1.14 Settings Menu

The [Settings] menu provides the options for customizing your system. The [Settings] menu, as well as all other items on the home screen, is automatically closed, and the previous operation display restored, when no operation is detected for approx. one minute.

1. Tap the [Home] icon to go to the home screen.
2. Tap [Settings].



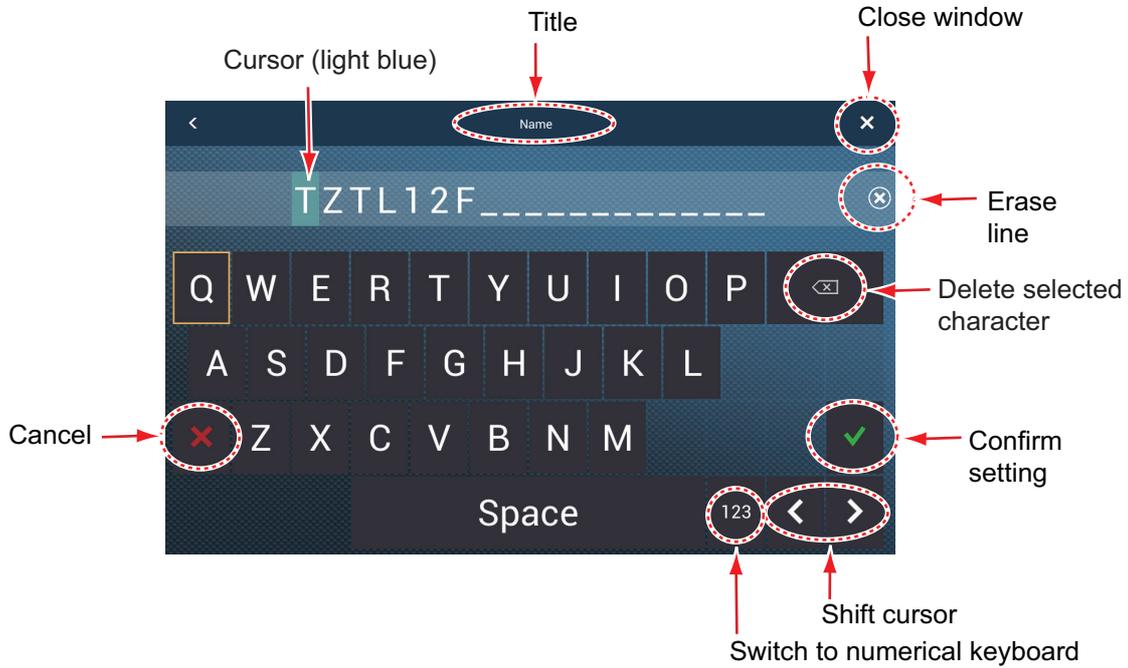
3. Tap a sub menu. For example, tap the [General] sub menu.
4. Do one of the following according to the menu item:
 - **ON/OFF flipswitch:** Tap the flipswitch to switch between [ON] and [OFF].



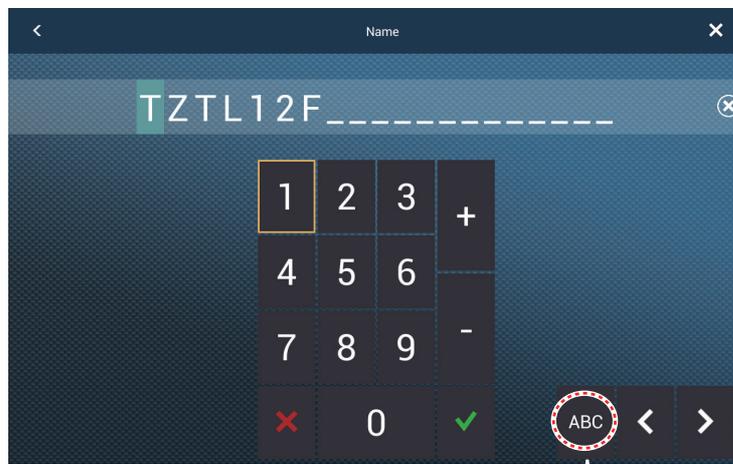
- **Slider bar, keyboard:** Set level by dragging the slider, or tapping the keyboard icon () to enter the level with the numeric software keyboard. (See the next page for the appearance of the numeric keyboard.)



- **Alphabet, numerical data entry:** A menu item that requires entry of alphabet and/or numerical data has a keyboard icon (📄). Tap the keyboard icon to show the keyboard. (The keyboard displayed depends on the item selected. Some items provide only the numeric keyboard.) Enter data, then tap ✓ to confirm.



Alphabet keyboard

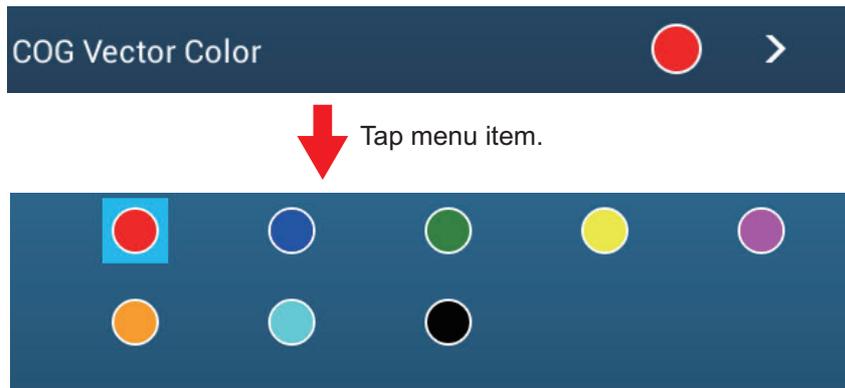


Switch to alphabet keyboard

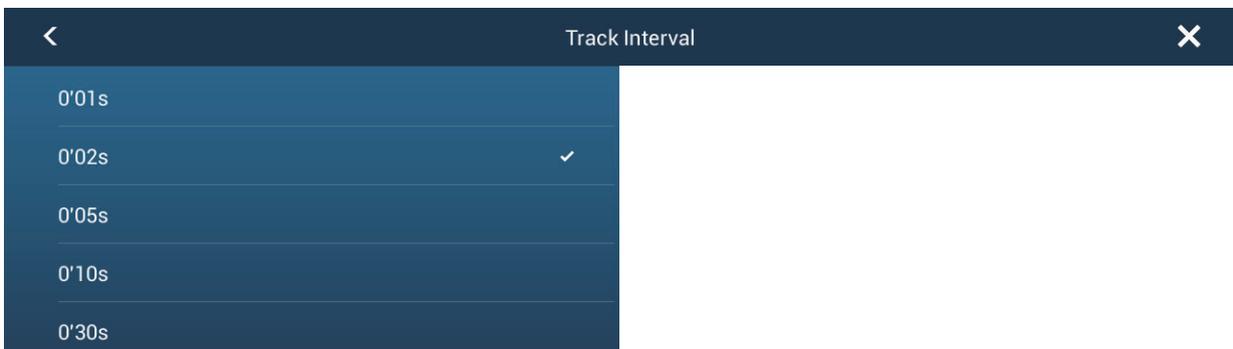
Numeric keyboard

1. SYSTEM INTRODUCTION

- **Color selection:** A menu item that requires selection of color shows the current color selection on the menu page. Tap the color option desired. Current selection is highlighted with a light blue square.



- **Option selection:** A menu item that requires selection of an option shows the current selection on the menu page. Tap the option desired. Current selection has a checkmark.



5. Tap the close button to finish.

1.15 Function Gesture

The function gesture controls what occurs when you tap the screen with two fingers. Select the function as below.

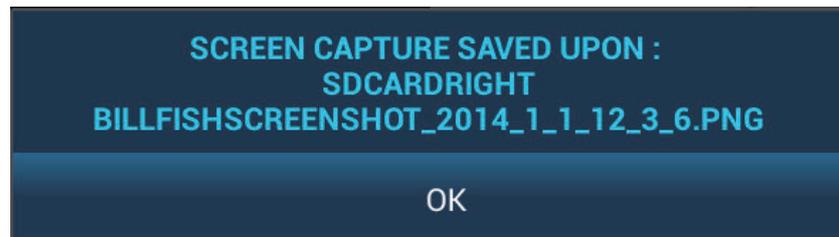
1. Open the home screen, then select [Settings] - [General].
2. Tap [Function Gesture].



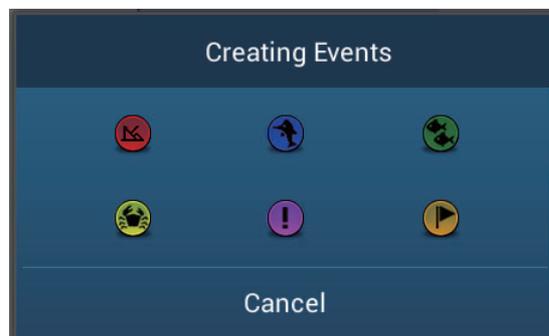
3. Tap a function among the following:

[None]: Nothing happens.

[Screen Capture]: Capture the screen. The message shown below appears. Tap OK to save the screen capture. The information following "BILLFISHSCREENSHOT" is the year, month, day, hour, minute and second the screenshot was captured.



[Event]: Record an event to the logbook. The selected mark is put at the position at the time the screen was tapped (see paragraph 4.2.2)



[Home]: Open the home screen (see section 1.6)

[Settings]: Open the [Settings] menu (see section 1.14).

[List]: Open the lists menu (see section 1.14 and section 4.8).

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[Tide]: Open the tide graph (see section 1.14 and paragraph 3.2.4).

[Fusion]: Show full FUSION display.

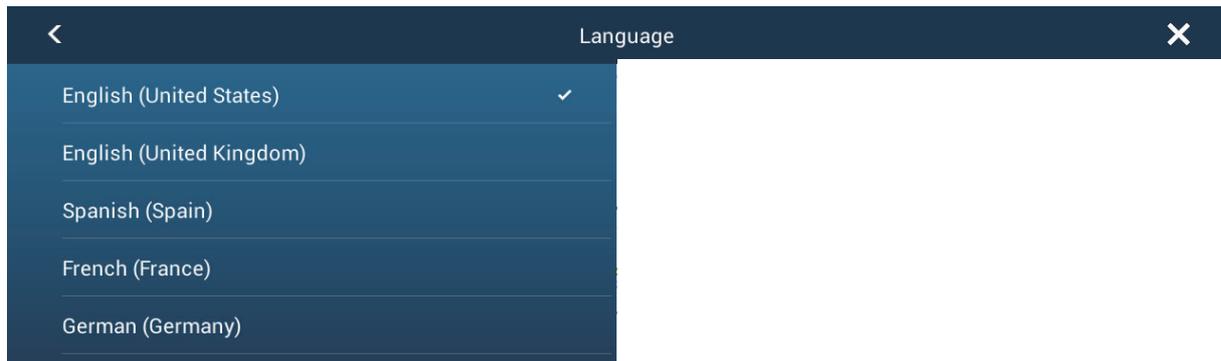
[Fusion Bar]: Show the FUSION bar.

4. Tap the close button to finish.

1.16 Language

The default interface language is English (United States). To select a different language, do as follows:

1. Open the home screen, then tap [Settings] - [General].
2. Tap [Language].



3. Tap the language to use. The message "APPLICATION HAS TO RESTART NOW! DO YOU WANT TO RESTART APPLICATION?" appears.
4. Tap [OK] then the equipment restarts.

1.17 Man Overboard (MOB)

The MOB function is used to mark the location of man overboard. At the moment the MOB function is activated, the MOB mark is put at the current position, on the plotter and radar displays.

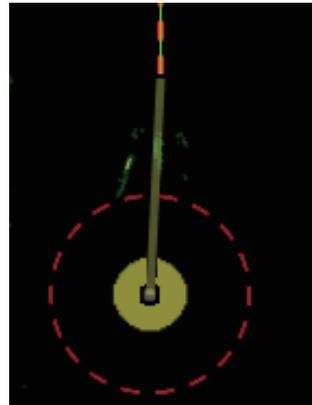
How to mark the MOB position

Tap [MOB] on the home screen. The plotter display opens, the MOB mark () is at the location at the moment MOB was activated, and the MOB location is automatically set as destination. At the moment of activation the following occurs.

- The message "MOB" flashes in the status bar, yellow characters on a red background. The aural alarm sounds if it is enabled. Tap the status bar to stop the flashing and silence the aural alarm.
- The MOB mark is highlighted.
- A yellow line connects between the MOB mark and current location. This line shows the straightest course between own ship and the MOB mark.



MOB mark on the plotter display



MOB mark on the radar display

MOB information

Tap a MOB mark to display the name, comment and depth (plotter display only).

How to delete a MOB mark

Inactive MOB mark: Tap a MOB mark to display the pop-up menu. Tap [Delete].

Active MOB mark: Before you erase an active MOB mark, you must stop navigation. Tap the active MOB mark to display the pop-up menu then select [Stop Nav]. Tap the MOB mark to display the pop-up menu, then tap [Delete].

1.18 Wireless LAN Settings

You can connect to the internet with the wireless LAN signal to download weather information (see chapter 11) and to connect to an iPhone, iPod, iPad, or Android™ device. To download weather information, connect the existing LAN network. To connect to an iPhone, iPod, iPad, or Android™ device, create a local wireless network.

About the wireless LAN

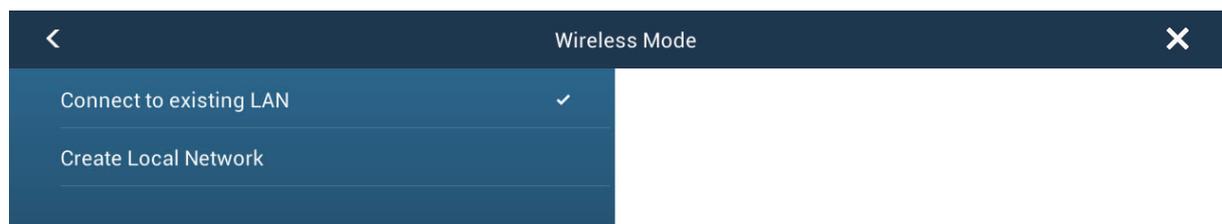
- The wireless LAN function is available only in the countries which have acquired radio wave certification. Turn this function off in countries which do not have radio wave certification. Ocean-going vessels that have radio wave certification can use the wireless LAN function in any country that has acquired radio wave certification. Vessels with radio wave certification that enter a country that does not have radio wave certification may use the wireless LAN function only onboard the vessel. Available countries (as of 12/2014): USA, Canada, New Zealand, Australia, and Japan.
- The communication rate and effective range for the wireless LAN can be affected by the electromagnetic wave, interfering object, or access point location.
- We strongly recommend using the wireless LAN with encrypted connection. Otherwise unauthorized access by a third party can occur, which can cause loss of data or system crash.
- We recommend changing the initial password when using a local wireless network.

1.18.1 How to connect the existing LAN

1. Open the home screen, then tap [Settings] - [General].
2. Tap [Connect to the Internet].

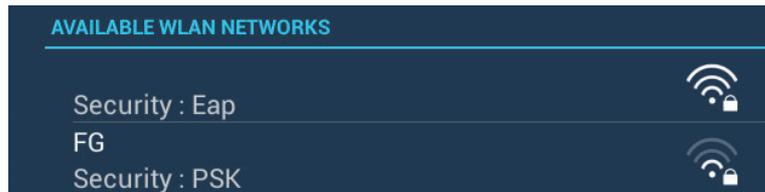


3. Tap [When Necessary]. Tap "<" to go back one layer.
4. Tap [Wireless LAN Settings].
5. Tap [Wireless Mode].

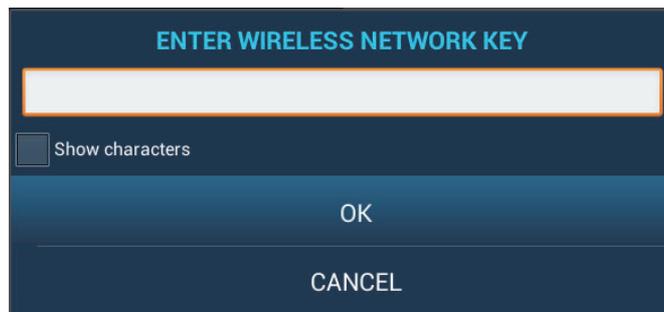


6. Tap [Connect to existing LAN]. Tap "<" to go back one layer.

- Turn on [Wireless] to see the available WLAN networks at the bottom of the screen.



- Tap the desired network to show the network key (password) entry screen.



- Enter the network key, then tap [OK]. The IP address, security type and signal strength of the WLAN are shown.

1.18.2 How to create a local wireless network

Note 1: Do the procedure with [Local Network] in [Wireless LAN Settings] turned off.

Note 2: It may not be possible to connect to a local network if the network is unstable. In this case, turn [Wireless] off and on. Connect via existing LAN network.

Note 3: Confirm that [When Necessary] is selected in [Connect to the Internet] before doing the procedure.

- Follow steps 1-5 in paragraph 1.18.1.
- Tap [Create Local Network] in [Wireless Mode]. Tap "<".
- Tap [Name].
- Enter the name of the network, then tap [OK].
- Tap [Password].
- Enter the password, then tap ✓. (If the password is wrong, an error message appears. Tap the [OK] button then reenter the password.)
- Turn on [Local Network] in [Wireless LAN Settings] to connect to the network.

1.18.3 How to forget all wireless LAN

- With [Connect to existing LAN] selected in [Wireless Mode] and [Wireless] turned on, select [Forget all Networks].
- You are asked if you are sure to delete all saved Wireless LAN networks. Tap [Yes].

1.18.4 Operation by wireless terminal

You can turn on or off the operation by a wireless terminal via wireless LAN (iPhone, iPod, iPad, or Android™ device).

1. Open the home screen, then tap [Settings] - [General].
2. Tap [Allow Remote Control].
 - [Off]**: Cannot operate this equipment by a wireless terminal.
 - [View Only]**: Cannot operate this equipment but can display the data on the screen of the wireless terminal.
 - [Full Control]**: Can fully operate this equipment by a wireless terminal.
3. Tap the close button to finish and exit.

2. PLOTTER

This chapter shows you how to do the following:

- Use and prepare the plotter display
- Set plotter related alarms
- Control the track

2.1 Chart Type

A world map in raster chart format is included in your unit. A vector chart for the US coastline (Alaska and Hawaii included) is provided also. To use this plotter as a navigational aid, have electronic charts (stored in the internal memory) for the area you navigate. Contact your dealer about charts for your area.

There are two types of charts available with this equipment.

[Raster]: Raster charts are digitized scans of NOAA paper charts. Raster charts have information like notes, source diagrams, tidal diamonds, horizontal and vertical datum, etc.

[HO]: HO charts are S-57 format vector charts (digital files) that contain marine features and information created for marine navigation. These charts are made according to the International Hydrographic Organization (IHO). HO charts are available from Jeppesen, Navionics, Mapmedia, and NOAA (National Oceanic and Atmospheric Administration).

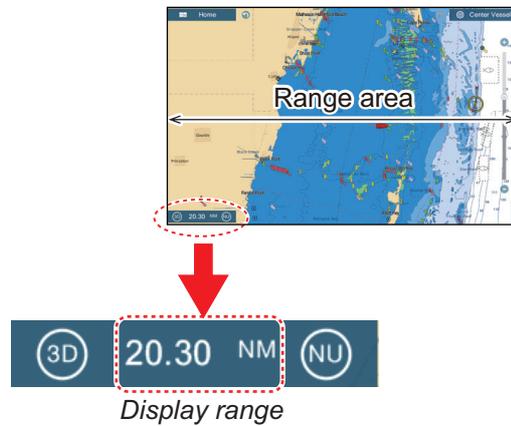
How to select a chart type

1. Select the plotter display.
2. Open the [Layers] menu.
3. Tap the chart type from among [Auto], [Raster] or [HOs].

*: [Auto] automatically switches the chart type according to chart availability and priority.

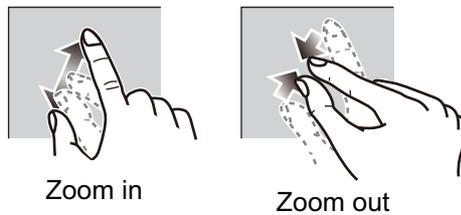
2.2 Display Range

You can change the display range to change the amount of information shown. The selected range appears in the box at the bottom left-hand corner of the screen.

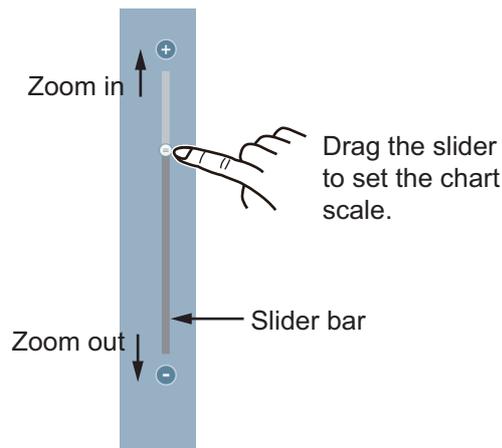


How to zoom in or out the display range

Method 1: Pinch the chart screen.



Method 2: Operate the range slider at the right side of the screen. Drag the slider or tap the “+” or “-” icon (above and below the slider) to set the display range. (The slider bar is shown in the default setting. The bar can be shown or hidden with [Show Range Sliders] in the [Settings] - [General] menu.)



Note 1: You can judge the suitability of the range by the color of the range indication.
 White: Range is appropriate; normal chart accuracy.
 Red: Range is inappropriate; unsuitable chart accuracy.

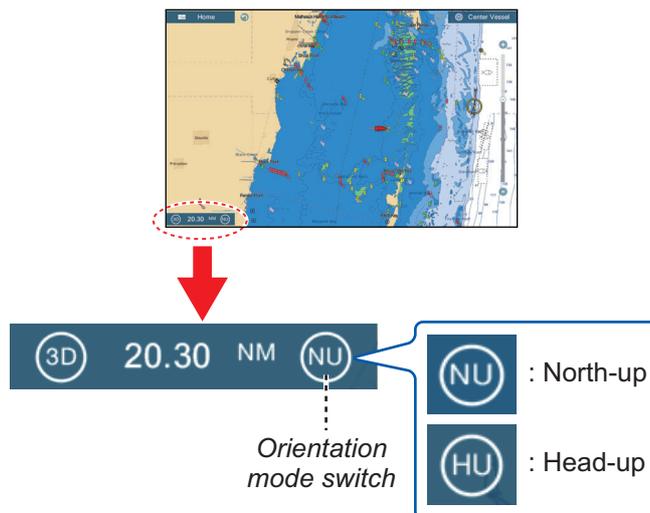
Note 2: You can zoom in or out the display range on the preview screen.

2.3 Orientation Mode

The chart can be shown in head-up or north-up orientation. Tap the orientation mode switch, [HU] or [NU], whichever is shown, at the bottom left corner to change the orientation mode.

North Up: North is at the top of the screen. When your heading changes, the boat icon moves according to heading. This mode is for long-range navigation.

Head Up: Displays the chart with the current compass heading of your ship at the top of the screen. The heading data from a compass is required. When the heading changes, the boat icon remains fixed, and the chart picture rotates according to heading.



2.4 How to Move the Chart

Move the chart in the following conditions.

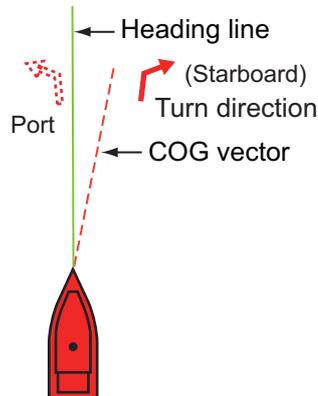
- Your ship is not in the current area
- Take a look at another area
- Enter a point at another location

Do the following to move the chart:

- Change the display range (section 2.2).
- Tap [Center Vessel] at the top right-hand corner of the screen to return your ship to the center of the screen.
- Switch to the 3D display by tapping the 3D icon at the bottom left corner.

2.5 The Boat Icon

The boat icon, colored red, appears at the current position. The boat icon has the functions indicated below also.



- The **Heading line** is a straight line that runs from your position and this line shows the current heading.
- The **COG vector** is a vector line that runs from the boat icon and points in the direction in which your ship is now moving. Also, a red arrow points in the direction the ship is turning.

How to show or hide the COG vector or heading line

Tap the boat icon to show the pop-up menu. Turn [COG] or [HDG] on or off as required)

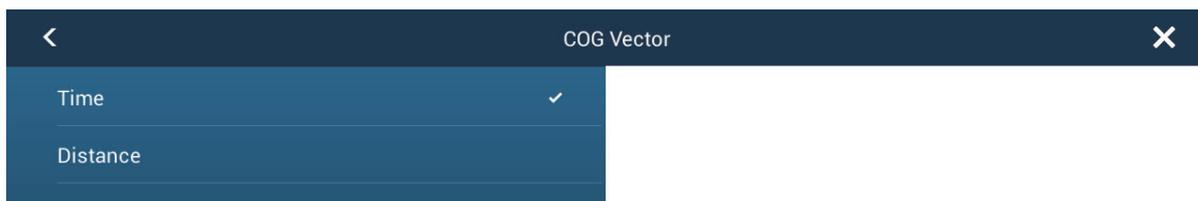


COG vector length

The **COG vector** shows estimated course and speed of your ship. This predictor is displayed as the COG vector. The top of the predictor is the estimated position of your ship at the end of the selected predictor time or distance (set on the menu). You can increase the length of the predictor to find the estimated position of your ship in the future on the current course and speed. You can set the COG/SOG predictor as follows. The greater the distance or the time, the longer the COG/SOG predictor.

1. Open the home screen, then tap [Settings] - [Ship & Track].

2. Tap [COG Vector].



3. Tap [Distance] or [Time]. For [Distance], do steps 4 and 5. For [Time], go to step 6.
4. Tap [COG Vector Length] to display the software keyboard.
5. Set the length for the COG vector, then tap ✓. Go to step 7.
6. Tap [COG Vector Time], then tap the time for the COG vector.

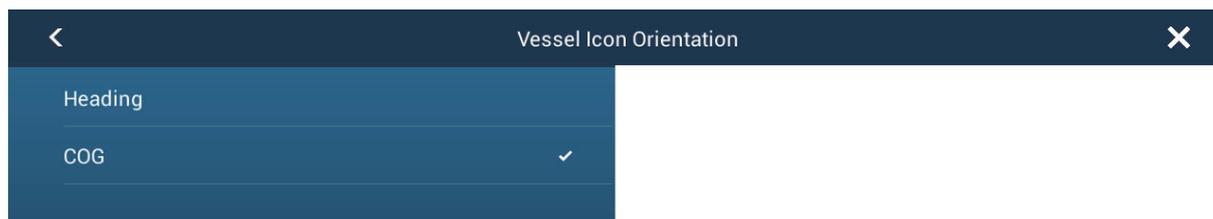


7. Tap the close button to finish.

Boat icon orientation

You can select the orientation of the boat icon.

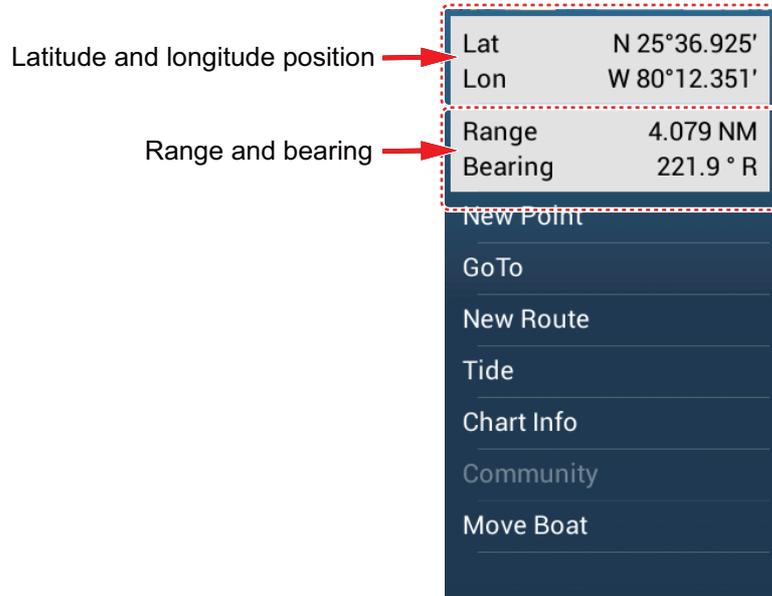
1. Open the home screen, then tap [Settings] - [Ship & Track].
2. Tap [Vessel Icon Orientation].



3. Tap [Heading] or [COG].

2.6 How to Find the Position, Range, Bearing of an Object

Tap an object to show its position, and range and bearing from own ship.

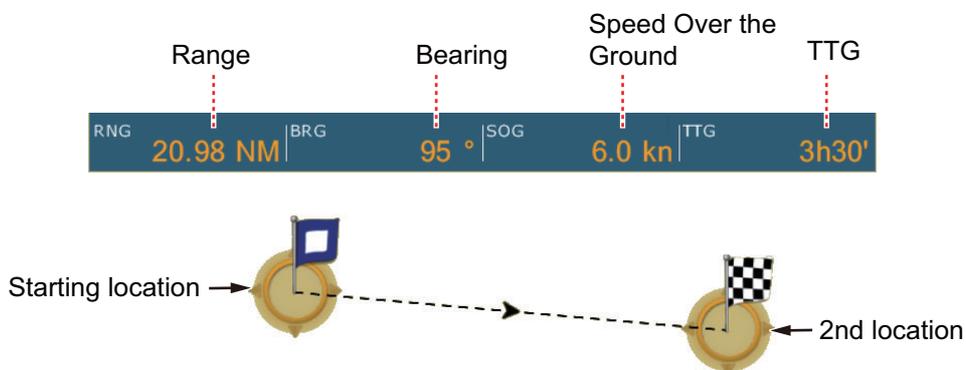


2.7 How to Find the Range and Bearing Between Two Locations

The [Distance] item in the slide-out menu measures the range and bearing between any two locations on your chart. Range and bearing between the two locations are digitally indicated on the screen.

1. Open the slide-out menu.
2. Tap [Distance].

A dashed line runs between the start location and the 2nd location. The range, bearing, SOG, and TTG to the 2nd location is shown at the top of the screen.



3. To change the location of either point, drag and drop.
4. To quit the distance measurement, tap [Cancel Ruler] at the top right-hand corner of the screen.

2.8 Chart Object Information

Vector charts show many objects, like buoys and lighthouses, for which you can find the information. Port, tide and current information are available if the chart contains this information

Tap any chart object to find the information.

| Chart Object Info | |
|------------------------|-----------------------|
| BEACON, SPECIAL | |
| Shape | stake,pole,perch,post |
| Category | general warning mark |
| Name | Sylvia Light |
| Source date | Tuesday, July 1, 2003 |
| Status | permanent |
| POINT INFO | |
| Lat | N 25°27.498' |
| Lon | W 79°01.638' |
| Bearing | 200 ° |
| Range | 42.10 NM |

2.9 Multiple Plotter Displays

Two plotter displays can be shown on one screen. With two plotter displays, you can see the conditions around your ship on both short and long ranges. Also, you can see how your ship moves toward your destination from more than one angle. For example, you can show one display in 2D and another in 3D.

The following features can be adjusted individually.

- AIS
- ARPA
- Display range
- Chart orientation
- Chart type
- Scroll the chart
- Overlays (radar, sat photo, depth shading, tide icon, tidal current, ACCU-FISH™ (see section 7.11), points, routes, tracks)
- 2D and 3D (For the 3D displays, the aerial view (pitch and orientation) are adjusted together, but different orientation modes (north up and head up) are possible.)

Chart plotter display 2

Chart type: S57 Display range: 80.03 NM
Orientation: Head-up Perspective: 2D

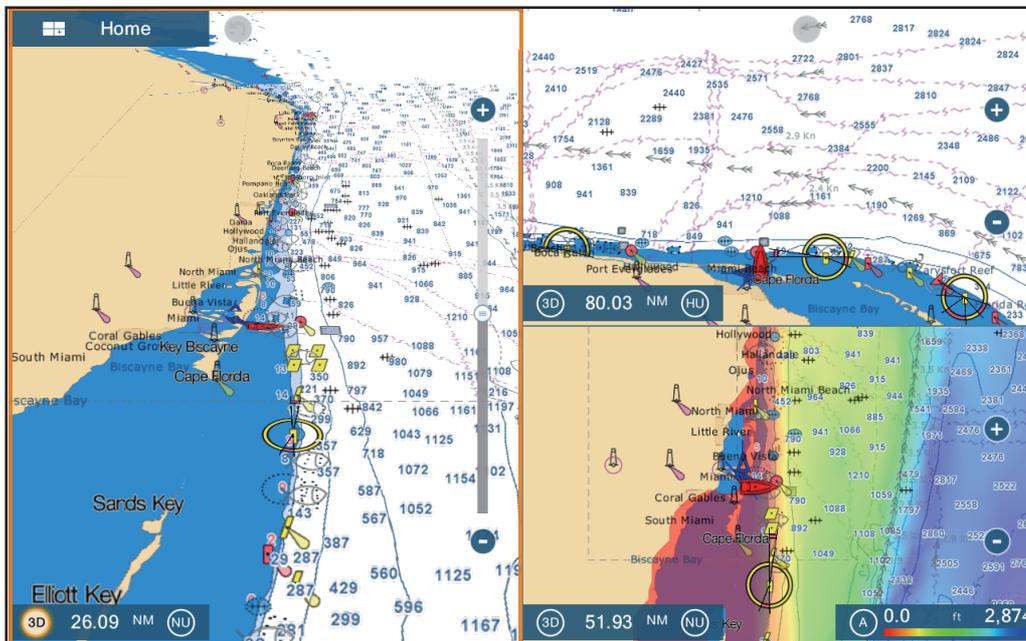


Chart plotter display 1

Chart type: S-57 Display range: 40.01 NM
Orientation: North-up Perspective: 3D

Chart plotter display 3

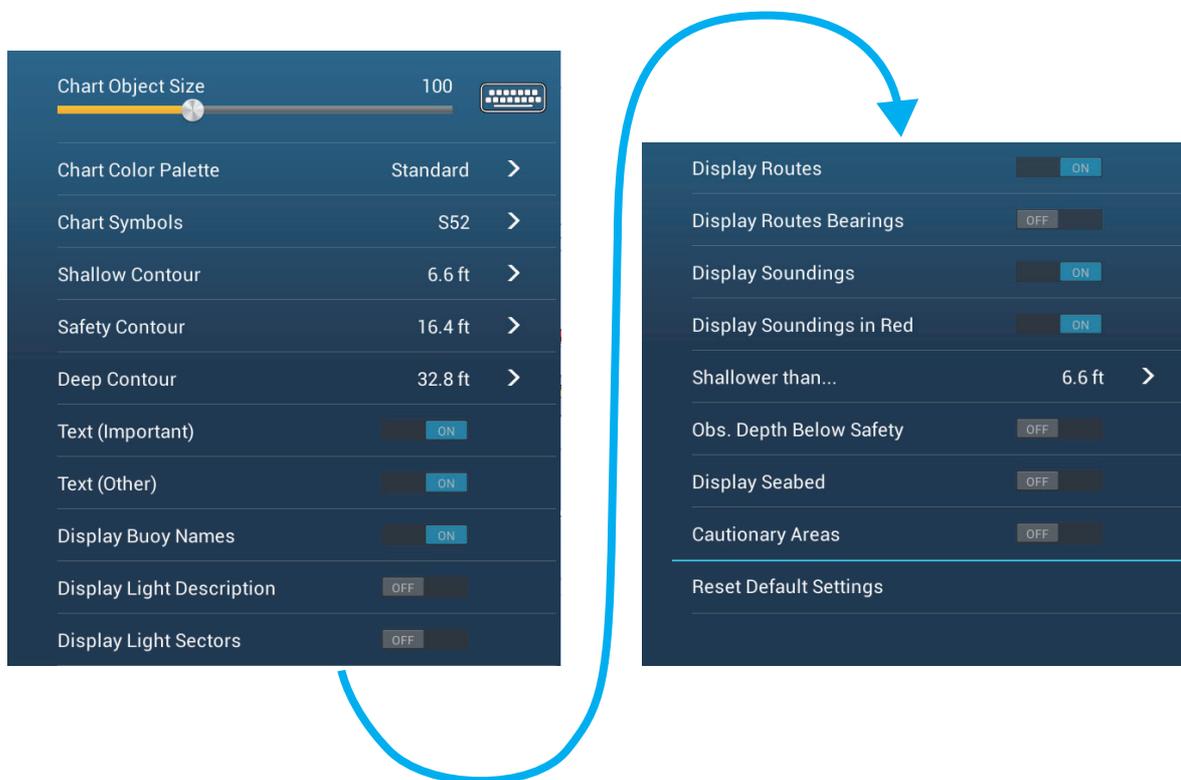
Chart type: S-57 Display range: 64.05 NM
Orientation: North-up Perspective: 2D
Overlay: Depth shading

2.10 Cartographic Text and Objects on Vector Charts

This section shows you how to show or hide the cartographic objects and text information that appear on the vector charts.

2.10.1 Control visibility of text and object information in vector charts

The [Settings] - [Vector Chart] menu controls the visibility of text and object information, for example, buoy names and light description.



[Chart Object Size]: Drag the slider to set the chart object size (setting value: 50 to 200%).

[Chart Color Palette]: Set the chart color pattern. [Standard] is this equipment's original color palette, [S-52] complies with the official S-52 charts, and [Sunlight] provides a high contrast palette.

[Chart Symbols]: Select the chart symbol type. [S-52] are the official IMO symbols (also referred to as simplified symbols) library for ECDIS. [International] symbols are the copy of paper chart symbols of IALA symbols library (US symbols library).

[Shallow Contour]: Set the shallow depth (setting range: 0.0, 3.0, 6.0, 9.0, 12.0, 15.0, 18.0, 21.0, 24.0, 27.0, 30.0 ft). Show shallow depth contours in dark blue.

[Safety Contour]: Set the safety depth (setting range: 0.0, 3.0, 6.0, 9.0, 12.0, 15.0, 18.0, 21.0, 24.0, 27.0, 30.0, 50.0, 70.0, 100, 200 ft). Show safety depth contours in medium blue.

[Deep Contour]: Set the deep depth (setting range: 0.0, 3.0, 6.0, 9.0, 12.0, 15.0, 18.0, 21.0, 24.0, 27.0, 30.0, 50.0, 70.0, 100, 200, 300, 500, 1,000, 2,000 ft). Show deep-depth contours in light blue. Depths greater than set here are shown in white.

[Text (Important)]: Show or hide the important text information.

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[Text (Other)]: Show or hide the other text information.

[Display Buoy Names]: Show or hide the buoy names.

[Display Light Description]: Show or hide the light descriptions.

[Display Light Sectors]: Show or hide light sectors for fixed beacons.

[Display Routes]: Show or hide routes.

[Display Routes Bearings]: Show or hide route bearings.

[Display Soundings]: Show or hide depth soundings.

[Display Soundings in Red]: Spot soundings whose depths are lower than the value selected on the [Shallower than...] menu are shown in red.

[Shallower than ...]: Select the value for the [Display Soundings in Red] menu (setting range: 0.0, 3.0, 6.0, 9.0, 12.0, 15.0, 18.0, 21.0, 24.0, 27.0, 30.0, 50.0, 70.0, 100 ft).

[Obst. Depth Below Safety]: Show or hide obstruction depths under the safety depths.

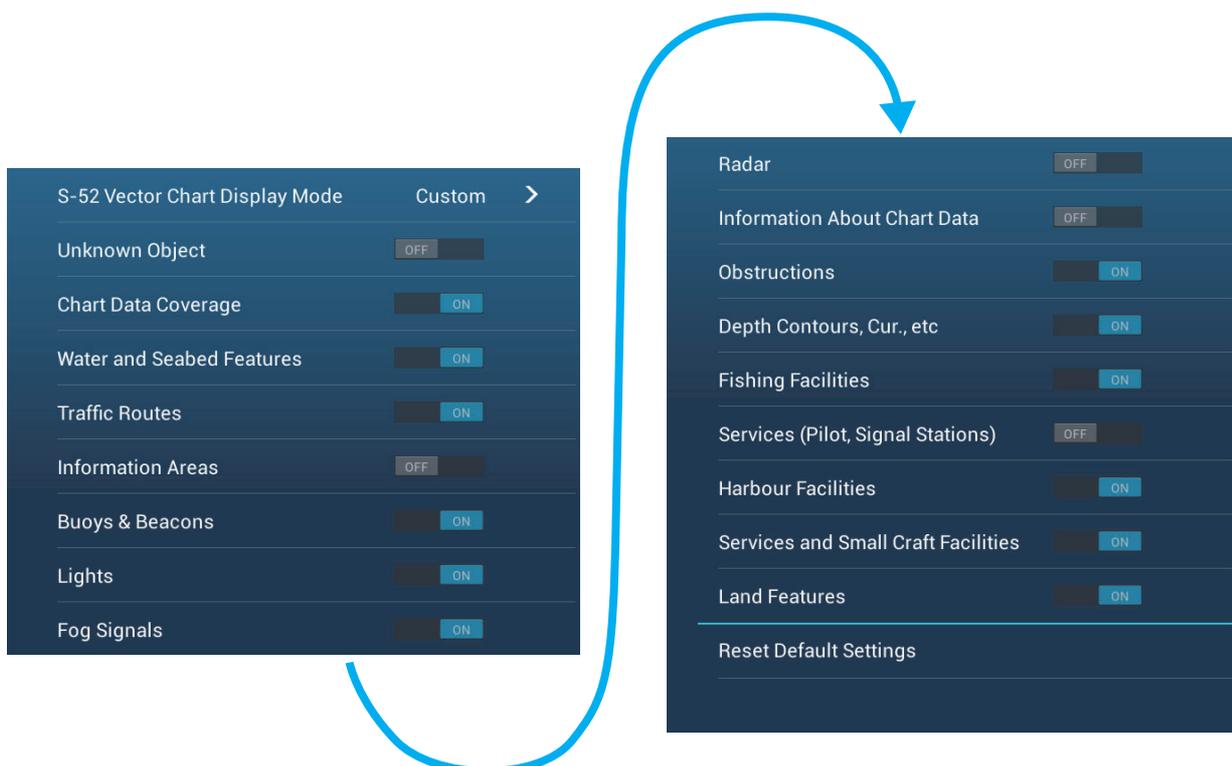
[Display Seabed]: Show or hide seabed composition indication, for example, mud, sand, rock.

[Cautionary Areas]: Show or hide the cautionary areas that appear on the chart.

[Reset Default Settings]: Select this menu item to restore default settings for the [Vector Chart] menu.

2.10.2 Control visibility of cartographic objects in S-52 charts

The [Settings] - [S-52 Display] menu controls the visibility of S-52 cartographic objects, for example, lights, fog signals, etc.



[S-52 Vector Chart Display Mode]: Set the level of information to show on the chart. The selections are [Custom], [Base], [Standard], [Other], and [Fishing]. The chart features are turned on or off according to setting.

Note: The following menu items except [Reset Default Settings] are unavailable when you select the mode other than [Custom]

[Unknown Object]: Show or hide unknown objects that appear on the chart.

[Chart Data Coverage]: Show or hide the geographic names and geographic objects.

[Water and Seabed Features]: Show or hide the water and seabed presentation.

[Traffic Routes]: Show or hide the marine traffic routes.

[Information Areas]: Show or hide the information areas that appear on the chart.

[Buoys & Beacons]: Show or hide the buoys and beacons.

[Lights]: Show or hide the sector of light that a fixed beacon shines.

[Fog Signals]: Show or hide the structure that sends a fog signal.

[Radar]: Show or hide the radar buoy.

[Information About Chart Data]: Show or hide the chart data information.

[Obstructions]: Show or hide obstructions (wrecks, etc.)

[Depth Contours, Cur., etc]: Show or hide the depth contours, tidal currents and magnetics.

[Fishing Facilities]: Show or hide the location of fishing facilities.

[Services (Pilot, Signal Stations)]: Show or hide the location of pilots and signal stations.

[Harbour Facilities]: Show or hide the location of harbour facilities.

[Services and Small Craft Facilities]: Show or hide the services for ship and small craft.

[Land Features]: Show or hide the cartographic features that are shown on land.

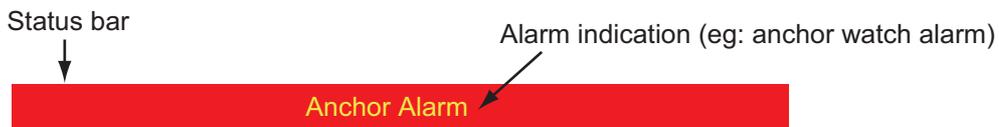
[Reset Default Settings]: Select this menu item to restore default settings for the [S-52 Display] menu.

2.11 Alarms

The various plotter alarms alert you (with audiovisual alarms) when the conditions specified are met. These alarms are:

- Anchor watch alarm
- Depth alarm
- Sea surface temperature alarm
- Speed alarm
- XTE alarm

When an alarm is generated, the name of the offending alarm appears in the status bar at the top of the screen and flashes. If [Alarm Sound] is active, the unit beeps. To stop the flashing and silence the audio alarm, tap the status bar. The indication remains on the screen until the cause of the alarm is removed or the alarm itself is disabled.



Note: If [Sound Alarm Until Acknowledged] is set for [OFF], the unit continues to beep until the cause of the alarm is removed.

How to open the [Alarm] menu

1. Open the home screen, then tap [Settings] - [Alarm].

