

ADDENDUM HDS Gen2 Touch

- **sw releases 3.5, 4.0, 4.5 and 5.0**

This addendum documents new features that are included in HDS Gen2 Touch software releases 3.5, 4.0, 4.5, and 5.0, and that are not described in the HDS Gen2 Touch Operator manual or other documentation.

Software release 5 includes all previous software release updates.

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* SmartCraft VesselView replaces Mercury VesselView in sw release 4.5.

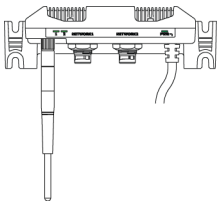
Wireless connection

GoFree wireless connectivity gives you the ability to:

- Use a wireless device to remotely view (smartphone and tablet) and control the system (tablet only).
- Access the GoFree Shop.
- Upload your Sonar logs to create custom maps at Insight Genesis.
- Download software updates
- Connect to third party applications



- **Note:** Maps, charts, software updates, and other data files can be large. Your data provider may charge you based on the amount of data you transfer. If you are unsure contact the service provider for information.



The HDS Gen2 Touch connects to the WIFI-1 for wireless functionality. Configuration and setup WIFI-1 for wireless functionality is described in the WIFI-1 Installation manual.

- **Note:** For security purposes we recommend that you change the administrator password of the WIFI-1 unit.



Connect and disconnect from a wireless hotspot

To connect to a wireless hotspot, select the Connect Wireless option in the System Controls dialog. This opens the Wireless Devices dialog. Use this dialog to select the desired hotspot, and enter the login information. Connecting to a wireless hotspot changes the wireless mode to **Client mode**. In this mode you can access the GoFree Shop.

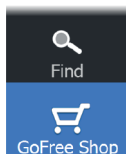
- **Note:** When the WIFI-1 is in **Client mode**, you cannot log in, view, or control the HDS Gen2 Touch from a smartphone or tablet.
- **Note:** The WIFI-1 will reboot when changing from **Access point mode** to **Client mode**. The status of the reboot is shown on the Changing mode dialog.



To disconnect from a wireless hotspot, select the disconnect wireless option in the System Controls dialog. This changes the wireless mode to **Access point mode**. In this mode you can connect a wireless device so that Apps such as GoFree Controller & Viewer can access the vessel's navigation information.

→ **Note:** When changing from **Client mode** to **Access point mode**, the Changing mode dialog does not appear.

GoFree Shop



The WIFI-1 must be connected to an external wireless hotspot in order to access the GoFree Shop from the Tools panel.

At the GoFree Shop you can browse, purchase and download compatible content for your system including navigation charts and Insight Genesis Maps. When you log on, the system automatically gives you a notification if a new software version is available for your system. If an update is available, you can download it to a card slot or defer the download until later. If you defer the download until later, the notification is available in the About dialog accessible from the System Settings.

GoFree Controller & Viewer



The wireless functionality lets you use a wireless device to remotely view (smartphone and tablet) and control the system (tablet only). The system is viewed and controlled from the wireless device by the GoFree Controller & Viewer Apps downloaded from their relevant Application store. When remote control is accepted, the active page is mirrored to the wireless device.

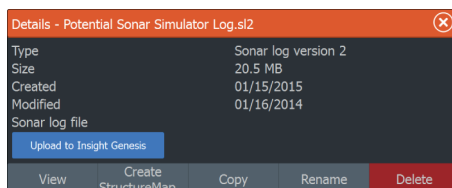
→ **Note:** To use smartphones and tablets to view and control the system, wireless functionality must be disconnected from the wireless hotspot (in **Access point mode**).

→ **Note:** For safety reasons, Autopilot and CZone functions cannot be controlled from a wireless device.

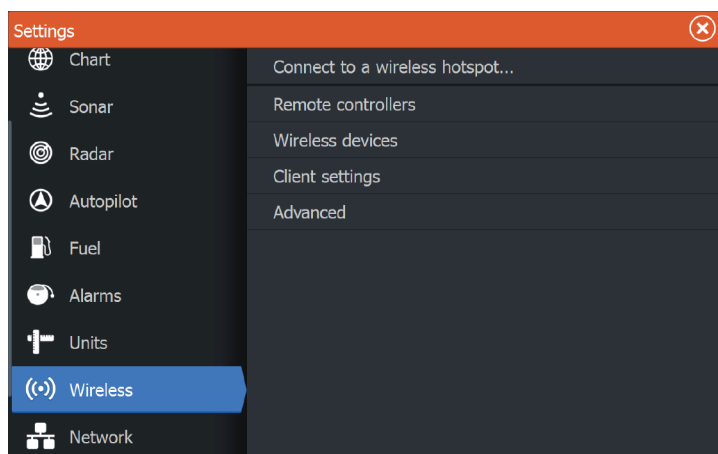
Uploading log files to Insight Genesis

To upload a recorded Sonar log file to Insight Genesis, select the file you want to upload from the Files panel and select the upload to Insight Genesis option.

- **Note:** You must be connected to a wireless hotspot to upload recorded log files to Insight Genesis.
- **Note:** Recorded log files can also be uploaded to Insight Genesis if you have specified **Upload to Insight Genesis** in the Log Sonar dialog. For more information, refer to *"Recording log data"* on page 36.



Wireless settings



Provides configuration and setup options for the wireless functionality. Setup for the Wireless settings dialog is described in the Installation Manual with the exception of the following new options:

Connect to a wireless hotspot

Displays the Wireless device dialog that you can use to connect the wireless functionality to a wireless hotspot.

Client settings

Displays information about the wireless hotspot your unit is connected to or the last one your unit was connected to. You can select the hotspot in the dialog to set it as a hotspot you want to always connect to when in range or you can select to delete it.

Trolling motor autopilot

If a MotorGuide Xi5 trolling motor with Pinpoint GPS is connected to the network, then the SmartSteer (autopilot) functionality is available on your HDS Gen2 Touch.

To use trolling motor autopilot functionality, you need the following:

- MotorGuide Xi5 trolling motor with Pinpoint GPS (available from MotorGuide)
- MotorGuide Pinpoint GPS Gateway (available from MotorGuide)
- NMEA 2000® network.

Connect the MotorGuide Pinpoint GPS Gateway to your NMEA 2000 network. For details about installing this equipment, refer to the separate installation manuals that come with the equipment.

The Autopilot can automatically control the trolling motor to:

- Maintain a set heading
- Maintain the vessel's position
- Navigate to the cursor position, to a waypoint, or along a route
- Follow pre-defined turn patterns
- Control the speed of the trolling motor

→ **Note:** An autopilot is a useful navigational aid, but DOES NOT replace a human navigator.

Xi5 trolling motor software

You may have to update the software in the MotorGuide Xi5 trolling motor to use it with the Lowrance SmartSteer interface. If an update is necessary, a Trolling motor update dialog appears on your networked HDS unit(s). The update process is initiated through an HDS unit.

Follow the onscreen instructions to update Xi5 software. and the steps included in this document, to update Xi5 software.

Updating Xi5 software

1. After all HDS units on the network have been updated to the latest software version, power down all HDS units and the NMEA 2000 network.
2. With the Xi5 trolling motor in the deployed position, power on the trolling motor. Make sure the Xi5 has a GPS lock (blue GPS light will be lit on the trolling motor).

3. Power on the NMEA 2000 network and at least one networked HDS unit. A software update prompt will appear on the HDS unit if Xi5 software needs to be updated.
4. Press **OK** to update Xi5 software.

⚠ Warning: After pressing **OK**, you cannot stop the update process. Stopping the update may damage your trolling motor.

- **Note:** If you select **Close** on the Trolling motor update dialog, you will not be prompted to update Xi5 software until the HDS unit is powered on again.
5. After starting the software update, you are prompted to power down the trolling motor for five seconds and then reapply power.
6. A Trolling motor update dialog appears confirming Update 1 is underway.
7. Update 2 will begin after Update 1 is completed.
- **Note:** Only power down the trolling motor when prompted to do so.
8. During Update 2, you may be prompted to power down the trolling motor for five seconds and then reapply power.
9. Once the updates are complete, a dialog appears confirming the trolling motor update is complete. Press **OK**.
10. Power off the HDS unit, NMEA 2000 network and the Xi5 trolling motor.

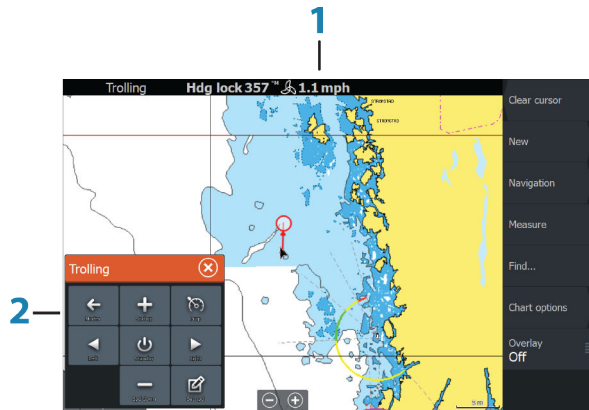
Trolling motor controls should be visible on the System Controls dialog and on the Settings menu.

- **Note:** If trolling motor features are not automatically enabled, you can enable them from the System settings Advanced menu. Refer to your operation manual for information on enabling features.

Switching from automatic navigation to standby mode

To switch from autopilot to handheld remote or foot pedal steering, set the autopilot to standby mode. You can select standby mode from the **Autopilot Controller** or the **System Controls** dialog.

Autopilot interface



- 1 Autopilot information bar
- 2 Autopilot Controller

The Autopilot Controller

The autopilot is controlled from the **Autopilot Controller**, activated from the **System Controls** dialog displayed by pressing the **Power** key.

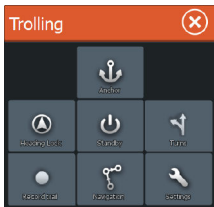
You can select the position of the Autopilot Controller on the page. Refer to "*Autopilot settings*" on page 24.

→ **Note:** As long as the **Autopilot Controller** is active, you cannot operate the background panel or its menu.

The **Autopilot Controller** can also be set up as a panel in a split panel page by using the Page Editor to make a Favorite page. For information about Favorite pages, refer to the Operator Manual.

The Autopilot information bar

The **Autopilot information bar** is displayed when an autopilot mode is selected. The bar includes information about the autopilot mode and navigational information. The bar is present on all pages if the autopilot is in an active mode. In the Autopilot settings dialog, you can select that the bar is off when the autopilot is in standby mode. Refer to the "*Autopilot settings*" on page 24.



Autopilot control of the trolling motor

Selecting an Arrival mode

The autopilot switches from navigation mode to the selected arrival mode when your vessel reaches the destination. Arrival mode is set to Standby by default. Before starting a navigation mode or a turn pattern, it is important to select an arrival mode that fits your navigation needs. Refer to "*Arrival mode*" on page 13.

Anchor mode

Maintains your vessel position at a selected location.

→ **Note:** When in anchor mode, your vessel orientation can be affected by wind or currents.

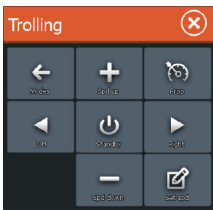
The following occurs when you select to anchor at:

- **Waypoint**
Enables anchor mode when your vessel arrives at a selected waypoint.
- **Cursor**
Enables anchor mode when your vessel arrives at the cursor position.
- **Here**
Enables anchor mode at your current location.



Heading Lock mode

Locks and maintains the current vessel heading. Use the left and right arrow buttons in the **Autopilot Controller** to make heading adjustments. To make small heading adjustments, single-select the left or right buttons. For larger adjustments, select and hold the left or right buttons.

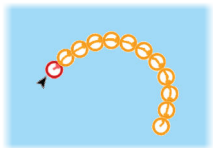


Standby mode

Cancels autopilot activity and returns the vessel to handheld remote or foot pedal steering control.

Turn pattern steering

Steers the vessel in predefined turn patterns. When you select a turn pattern, the system creates temporary waypoints on the turn. The last waypoint on the turn is the final waypoint. When the vessel reaches the final waypoint, the vessel goes into arrival mode. Refer to "*Arrival mode*" on page 13".



Setting up a turn pattern

1. Select a turn pattern.
2. Enter the desired value(s) in the turn pattern dialog or use default settings.
3. Select the direction of the turn.

→ **Note:** Selecting a turn radius smaller than the GPS accuracy may result in incomplete navigation of the turn pattern.

U-turn

Changes the current set heading to be 180° in the opposite direction.

C-turn

Steers the vessel in a C-shaped pattern.

Spiral turn

Steers the vessel in a spiral with a decreasing or increasing radius. Negative values indicate decreasing radius while positive values indicate increasing radius.

Zigzag turns

Steers the vessel in a zigzag pattern.

Square turn

Makes the vessel automatically turn 90° after having travelled a defined leg distance.

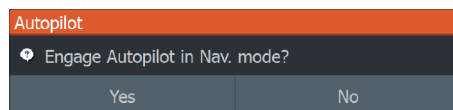
Lazy S-turn

Makes the vessel yaw around the main heading.

Navigation mode

In Nav. mode you can use the autopilot to steer the boat to cursor position, to a waypoint position, or along a pre-defined route. The position information from the GPS is used to keep the boat on the track line towards the destination point.

When you start navigating from an application (chart, steering, radar, and so on) you are prompted to engage the autopilot in Nav. mode.



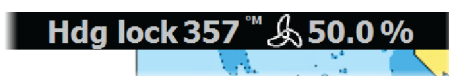
You can also initiate Nav. mode from the **Autopilot Controller** after navigation is started.

When you reach the destination, the autopilot switches to your **Arrival mode** setting. Refer to "*Autopilot settings*" on page 24.

Trolling motor speed control

In navigation modes (Heading lock mode, Nav. mode, and Turn pattern steering) there are two ways to control speed:

- **Prop** - selects a target propeller rate (percentage of power) shown as "%" in the Autopilot information bar.



- **Cruise** - selects a target cruise control speed shown as "mph" or "kn" in the Autopilot information bar.



➔ **Note:** Cruise set speed sets the target speed for your vessel. Your vessel may not be able to achieve the set target. The Cruise set speed (not your current speed) is displayed in the Autopilot information bar.

Speed adjustments

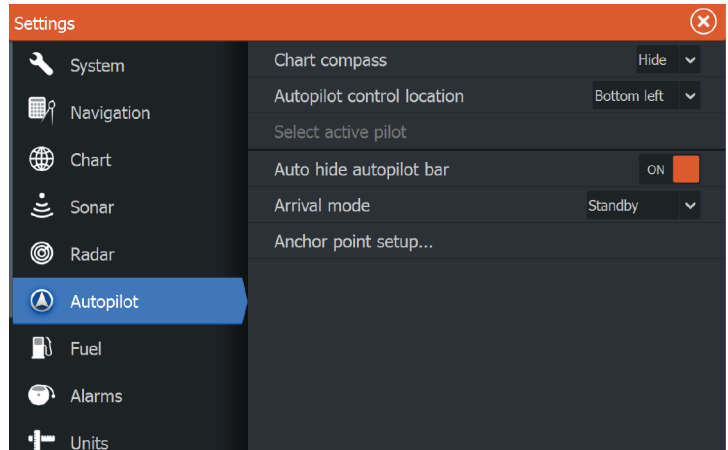
You can make speed adjustments on the Heading lock and Navigation control dialogs by selecting the Spd up (+) and Spd down (-) buttons, or by selecting the **Set Spd** or **Set prop** option and entering your desired speed or propeller rate.

Recording and converting a trail to a route

The **Record trail** button is used to record and convert a trail or part of a trail to a route.

1. Select **Record trail** at the desired location to start recording a new trail.
2. Select **Save route** to select the end location of the route. The Edit trail dialog appears.
3. Select **Create route**. The Edit route dialog appears.
4. Enter the route details and save it.

Autopilot settings



→ **Note:** Options shown on the Autopilot setting dialog varies depending on if the trolling motor or outboard motor autopilot is active.

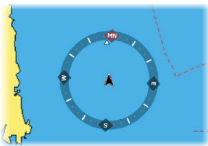


Chart compass

You can select to show a compass symbol around your boat on the chart panel. The compass symbol is off when the cursor is active on the panel.

Autopilot control location

Controls the location of the **Autopilot controller** on the panel.

Select active autopilot

Selects if the autopilot controls the trolling motor or the outboard motor(s).

Auto hide autopilot bar

Controls whether the Autopilot information bar is shown when the autopilot is in Standby mode.

Arrival mode

The trolling motor autopilot switches from navigation mode to the selected arrival mode when your vessel reaches the destination.

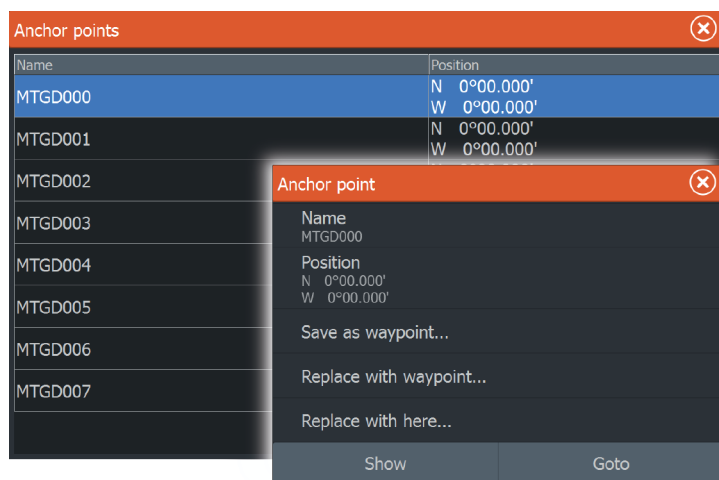
- **Note:** Before starting a navigation mode or a turn pattern, it is important to select an arrival mode that fits your navigation needs.

Arrival modes are:

- **Standby**
Cancels autopilot activity and returns the vessel to handheld remote or foot pedal control.
 - **Heading lock**
Locks and maintains the last vessel heading.
 - **Anchor**
Anchors the vessel at the current destination.
- **Note:** We recommend only using heading lock in open water.

Anchor point setup

Anchor points can be saved as a new waypoint, replaced with an existing waypoint, or set as your current coordinates.



Anchor points are synced with the Xi5 trolling motor. If any anchor points are stored in the motor, they appear in the anchor points list.

Outboard motor autopilot

The Lowrance SmartSteer interface (Autopilot Controller) provides outboard motor control. The outboard autopilot can steer on a set heading, to a waypoint, or along a route.

To use outboard autopilot functionality the following are required:

- NAC-1 Autopilot computer
- Point-1AP GPS/Heading sensor or RC42N Heading sensor and a separate GPS antenna
- Pump or drive unit connected to the steering system

For details about installing this equipment, refer to the separate installation manuals that come with the equipment. After installation is complete you must set up the outboard autopilot, for instructions refer to the HDS Gen2 Touch Installation Manual.

Safe operation with the autopilot

⚠ Warning: An autopilot is a useful navigational aid, but DOES NOT replace a human navigator.

Autopilot control of the outboard motor(s)

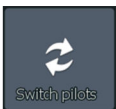
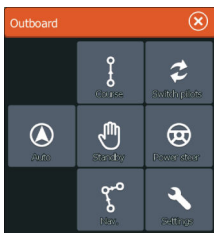
The autopilot is controlled from the **Autopilot Controller**, activated from the **System Controls** dialog displayed by pressing the **Power** key.

The **Autopilot Controller** can also be set up as a panel in a split panel page by using the Page Editor to make a Favorite page.

The options in the **Autopilot Controller** vary with active mode.

Selecting the trolling or outboard motor autopilot

If autopilot control of the trolling motor and outboard motor are installed on the same vessel, only one of the auto steering options can be active at a time. When both options are installed, a button to switch between them is included in the **Autopilot Controller**.



Mode overview

Standby mode



Standby mode is used when you want to disable the autopilot and manually steer the boat.

The autopilot information bar is hidden when the autopilot is in Standby mode. To view the autopilot bar, disable **Autohide** from the Autopilot settings dialog.



Power steer mode



In this mode you use the port and starboard arrow buttons in the **Autopilot Controller** to turn the outboard motor(s). The motor turns as long as the button is pressed and remains at the set angle.

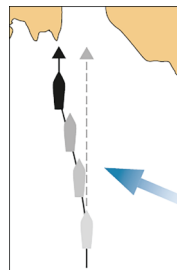
Auto mode

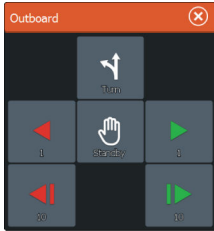


In AUTO mode, the autopilot steers the boat automatically on a set heading.

When the mode is activated, the autopilot selects the current compass heading as the set heading.

→ **Note:** Strong wind and current might affect the steering of the vessel in AUTO mode. While the autopilot compensates for any heading change, the wind and current could cause the course of the boat to differ significantly from the heading.





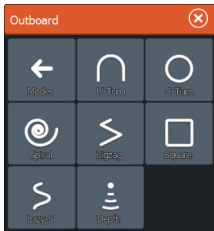
Changing set heading in AUTO mode

You adjust the set heading by using the port and starboard (1 or 10 degrees) arrow buttons in the **Autopilot Controller**.

When you select the button, an immediate heading change takes place. The new heading is maintained until a new heading is set or until you select another mode for the autopilot.

Turn pattern steering

The autopilot includes a number of automatic turn steering features when the autopilot is in AUTO mode.



Note: Turn pattern steering for outboard motors uses heading information only, while turn pattern steering for the trolling motor uses both GPS and heading information. Therefore, with outboard turn pattern steering, waypoints in the turns are not created and displayed as they are with trolling motor turn patterns.

Initiating a turn

You start the turn by selecting the relevant turn icon, followed by selecting the port or starboard options in the turn dialog to select the turn direction.

Stopping the turn

You can stop the turn from within the turn dialog.

At any time during a turn you can select **Autopilot standby** in the System Controls dialog to return to STBY mode and manual steering.

Turn variables

The turn steering options have settings that you can adjust before you start a turn and at any time when the boat is in a turn.

U-turn

U-Turn changes the current set heading to be 180° in the opposite direction.

The turn rate is identical to Rate limit settings. This cannot be changed during the turn.

C-turn

Steers the vessel in a circle.

You can adjust the Rate of turn from the turn dialog before the turn is initiated and during the turn. Increasing the turn rate makes the vessel turn a smaller circle.

Spiral turn

Spiral-turn makes the vessel turn in a spiral with a decreasing or increasing radius. You set the initial radius before the turn is initiated, and the change per turn during the turn. If the change per turn is set to zero, the vessel turns in a circle. Negative values indicate decreasing radius while positive values indicate increasing radius.

Zigzag turns

Steers the vessel in a zigzag pattern.

For navigating in a zigzag pattern, you set the initial heading change before the turn is started.

During the turn you can alter the main heading, the heading change, and the leg distance.

Square turn

Makes the vessel automatically turn 90° after having travelled a defined leg distance.

At any time during the turn you can change the main heading and the distance of the leg until the vessel makes a new 90° turn.

Lazy S-turn

Makes the vessel yaw around the main heading.

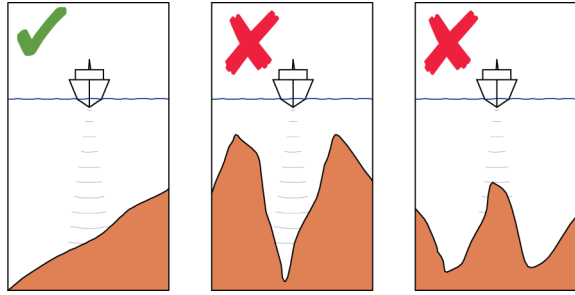
You set the selected heading change before the turn is started.

During the turn you can alter the main heading, the heading change and the turn radius from within the turn dialog.

Depth contour tracking, DCT™

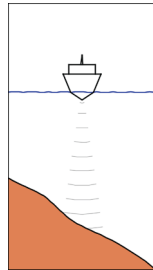
If the system has Sonar input, the autopilot can be set to follow a depth contour.

⚠ Warning: Do not use this feature unless the seabed is suitable. Do not use it in rocky waters where the depth is varying significantly over a small area.

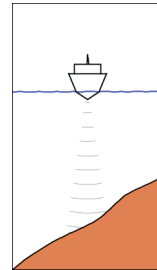


Use the following process to initiate DCT steering:

1. Ensure that you have depth reading on the panel or on a separate depth instrument.
2. Steer the boat to the depth you want to track, and in the direction of the depth contour.
3. Activate **AUTO** mode, select depth contour steering and monitor the depth reading.
4. Select the port or starboard option in the turn dialog to initiate the depth contour steering to follow the bottom sloping to starboard or to port:



*Port option
(depth decreases to port)*



*Starboard option
(depth decreases to starboard)*

The following parameters are available for depth contour tracking:

Depth gain

This parameter determines the ratio between commanded rudder and the deviation from the selected depth contour. The higher depth gain value the more rudder is applied.

If the value is too small, it takes a long time to compensate for drifting off the set depth contour, and the autopilot fails to keep the boat on the selected depth.

If the value is set too high, the overshoot increases and the steering is unstable.

Contour Cross Angle (CCA)

The CCA is an angle that is added to or subtracted from the set course.

With this parameter you can make the boat yaw around the reference depth with lazy-s movements.

The larger the CCA, the bigger yawing is allowed. If you the CCA set to zero there are no lazy-s movements.

Ref. depth

Use this parameter to change the reference depth which the boat will yaw around when making Lazy-s movements.

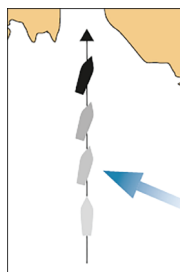
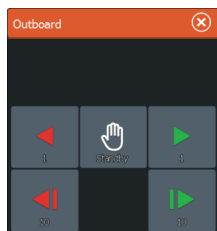


Course mode

The Course mode combines the heading information from the steering compass and the positioning information from the GPS. In this mode, the vessel is steered along a calculated track line in a direction set by the user. If the vessel's heading is drifting away from the original heading due to current and/or wind, the vessel follows the line with a crab angle.

1. Turn the vessel to the desired heading.
2. Activate Course mode. The autopilot draws an invisible bearing line based on the current heading from the boat's position.

In Course mode, the autopilot uses position information to calculate the cross track error, and to automatically keep your track straight.



Use the port and starboard (1 or 10 degrees) arrow buttons in the **Autopilot Controller** to change the bearing line while in Course mode.



NAV mode

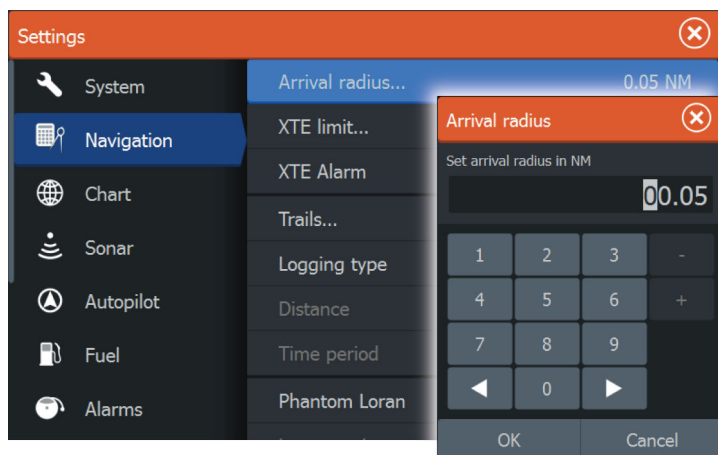
You can use the autopilot to automatically steer the boat to the cursor position, to a waypoint position, or along a pre-defined route. The position information from the GPS is used to change the course to steer to keep the boat on the track line towards the destination point.

⚠ Warning: NAV mode should only be used in open waters.

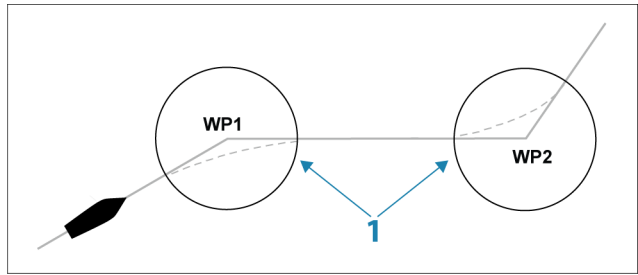
→ **Note:** To use navigation mode, the system must have valid position input.

When the vessel reaches the arrival circle for a waypoint, the autopilot gives an audible warning and displays a dialog with the new course information. If the required course change to the next waypoint is less than 30° , the autopilot automatically changes the course. If the required course change to next waypoint in a route is more than 30° , you are prompted to verify that the upcoming course change is acceptable.

Waypoint arrival circle

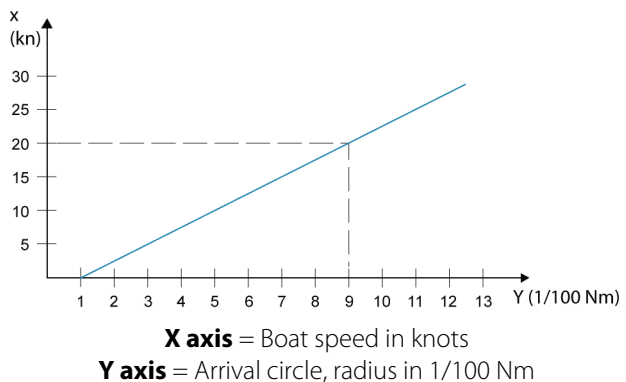


The Arrival radius defines the point at which a turn is initiated when you are navigating a route.



The arrival circle (**1**) should be adjusted according to boat speed. The higher the speed, the wider the circle. The intention is to make the autopilot start the heading change in due time to make a smooth turn onto the next leg.

The figure below may be used to select the appropriate waypoint circle when creating the route.

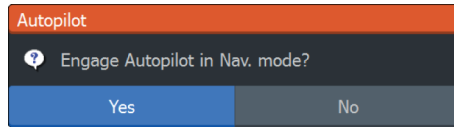


Example: With the speed of 20 knots you should use a waypoint circle with radius 0.09 Nm.

➔ **Note:** The distance between any waypoints in a route must not be smaller than the radius of the waypoint arrival circle.

Start automatic navigating

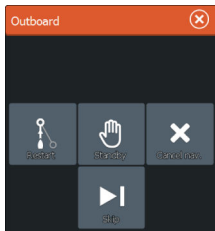
1. Start navigating a route, or start navigation to a waypoint or to the cursor position from the Chart panel or from the Steer panel.
2. Engage the autopilot in NAV mode when prompted.



- If you reject this request, you can later start NAV mode from the **Autopilot Controller**.

3. Accept the required course change to activate NAV mode.

- If the course change is not accepted within 8 seconds, the dialog is removed and the autopilot remains in the current active mode.



After the autopilot is engaged in NAV mode, the **Autopilot Controller** shows NAV steering options.

Restart

Restarts the navigation from the vessel's current position.

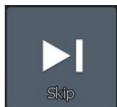
Cancel

Cancels active navigation and deselects the current route or waypoint navigation. The autopilot is switched to AUTO mode, steering the vessel on the heading that was active when the Cancel button was selected.

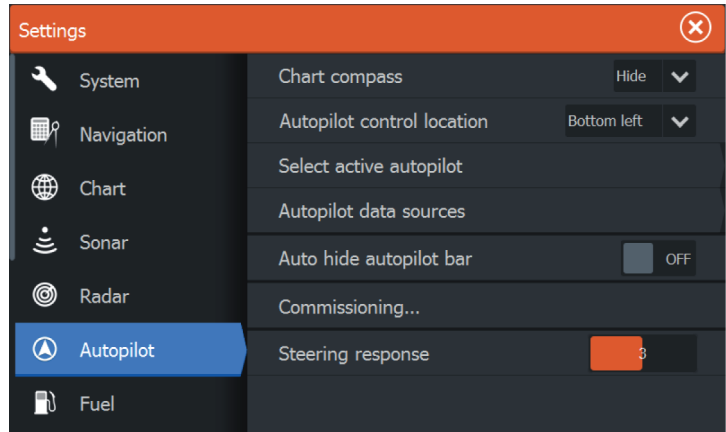
➔ **Note:** This is different from selecting Standby mode which does not stop current navigation. From Standby mode you can later restart the active route.

Skip

Skips the active waypoint and steers towards the next waypoint when you are navigating a route.



Autopilot settings



→ **Note:** Options shown on the Autopilot setting dialog varies depending on if the trolling motor or outboard motor autopilot is active.

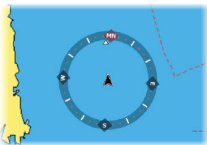


Chart compass

You can select to show a compass symbol around your boat on the chart panel. The compass symbol is off when the cursor is active on the panel.

Autopilot control location

Controls the location of the **Autopilot controller** on the panel.

Select active autopilot

Selects if the autopilot controls the trolling motor or the outboard motor(s).

Autopilot data sources

Provides automatic and manual data source selection for your outboard autopilot.

Auto hide autopilot bar

Controls whether the Autopilot information bar is shown when the autopilot is in Standby mode.

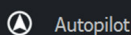
Commissioning

Used to calibrate your outboard motor's steering (Cablesteer or Hydraulic steering) with the NAC-1.

Steering response

Used to increase or decrease the steering sensitivity. A low response level reduces the rudder activity and provides a more *loose* steering. A high response level increases the rudder activity and provides more *tight* steering. Too high a response level will cause the boat to make "S" movements.

Autopilot setup



Autopilot features will be enabled when a pilot computer is connected.

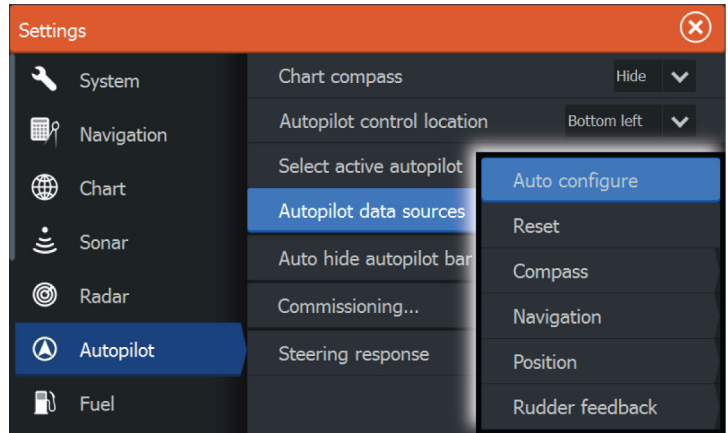
For the trolling motor autopilot, no special setup is required. See the operator manual for further details.

After installation is completed, the NAC-1 autopilot computer (outboard motor autopilot) requires setup as described in the following sections.

→ **Note:** The word rudder is sometimes used in menus and dialogs. In this context, the outboard motor acts as a rudder.

Selecting data sources for the outboard motor autopilot

Data sources for the outboard motor autopilot must be selected before commissioning the autopilot to ensure best performance. You can let the system automatically select data sources and later manually make changes if needed.



Auto configure

Automatically selects data sources for the autopilot.

Manually select data sources

You can manually select the preferred source. This is useful if you have more than one of the same type of data sources.

For example, if you have 2 compasses on your network you want to ensure that the same compass is selected for the MFD and the autopilot.

→ **Note:** You change the MDF data sources from the Network settings dialog.

Autopilot commissioning

Used to calibrate your boat's steering (Cablesteer or Hydraulic steering) with the NAC-1.

→ **Note:** The autopilot must be commissioned prior to first use and any time after autopilot default settings have been restored.

Cablesteer rudder calibration

1. Select **Commissioning**.
2. Select **Rudder feedback calibration**.
3. Follow the onscreen instructions.

→ **Note:** When centering the motor during the calibration process, ensure that the motor is centered visually. The

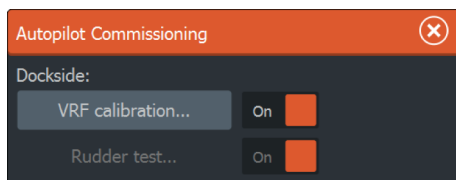
rudder feedback calibration dialog may show the motor is centered (00 value) when the motor is not centered. After centering the motor visually, press **OK** and the rudder center calibration setting is set to centered (00 value).

4. Select **Rudder test**.
5. If the calibration does not pass the rudder test:
 - Confirm motor is moving.
 - Confirm rudder feedback reading moves accordingly.
 - Check NAC-1 drive cable.
 - Confirm motor can be manually moved smoothly in each direction.
 - Check for other mechanical issues.
 - Check wiring connections.
 - Repeat rudder calibration steps.

Hydraulic system calibration

Virtual rudder feedback (VRF) calibration is used for vessels with hydraulic steering.

1. Select **Commissioning**.
2. Select **VRF calibration**.



3. Follow the onscreen instructions.

- **Note:** When the autopilot attempts to turn the motor during the calibration process, ensure motor movement is noticeable and that it is turning in the correct direction before selecting **Yes** on the Virtual Rudder Feedback Calibration dialog. When **No** is selected in the dialog, the NAC-1 reverses direction and increases power the next time it turns the motor during the calibration process.
- **Note:** You may have to select **No** a few times to ensure the pump provides enough power to turn the motor at high boat speeds.

Troubleshooting

The following are possible symptoms or * messages displayed by the MFD. If the problem persists after trying the recommended action, contact support.

No active autopilot control unit

Probable cause: The NAC-1 computer has lost contact with the active control unit.

Recommended action: Check the cable connections from the NAC-1 and MFD to the CAN bus network.

No autopilot computer

Probable cause: The MFD has lost contact with the NAC-1 Computer.

Recommended action:

- Make sure the NAC-1 computer is powered.
- Check connections from the NAC-1 to the CAN bus network.

AP Position data missing*

Probable cause: Missing or invalid position data.

Recommended action:

- Check the GPS cable connections to CAN network.
- Check the GPS antenna location.
- Check that the correct position source is selected. (Run a new source selection.)

AP Speed data missing (SOG)*

Probable cause: Missing or invalid speed data.

Recommended action:

- Check the GPS cable connections to the CAN network.
- Check the GPS antenna location.
- Check that the correct position source is selected. (Run a new source selection.)

AP Depth data missing*

Probable cause: Missing or invalid depth data.

Recommended action:

- Check the depth transducer.
- Check transducer cable connections to the MFD or to the CAN network.
- Check that the correct depth source is selected. (Run a new source selection.)

AP Heading data missing*

Probable cause: Missing or invalid heading data.

Recommended action:

- Check the compass cable connections to the CAN network.
- Check that the correct heading source is selected. (Run a new source selection.)

AP Nav data missing*

Probable cause: Missing or invalid NAV data.

Recommended action:

- Check for valid data on the MFD screen.
- Check the source selection setting.

AP Rudder data missing (For Helm-1/ cable steer only)*

Probable cause:

- Rudder feedback signal missing due to a broken wire or connection.
- Misaligned potentiometer in the Helm-1.

Recommended action:

- Check cable and connector.
- Check the alignment as per the installation instructions.

AP Off course*

Probable cause:

- The boat's heading is outside the fixed off course limit of 20 deg. (Automatic reset when inside limit).
- The boat speed is too low.
- The response setting is too low.

Recommended action:

- Check the steering response setting and increase the steering response setting.
- Increase the boat speed if possible, or steer by hand.

AP clutch overload (For Helm-1/ cable steer only)*

Probable cause: The clutch in Helm-1 is drawing too much current.

Recommended action:

- Disconnect the Helm-1 and verify that the alarm disappears.
- Check resistance of the clutch coil equals 16 ohms (pin 1 and 2 in connector).

No rudder response (For Helm-1/cable steer only)*

Probable cause: No response to rudder commands.

Recommended action:

- Check the cable connections between NAC-1 and Helm-1.
- Check the Rudder FB potentiometer in Helm-1.
- Check the Helm-1 drive motor.

Rudder drive overload*

Probable cause: The drive unit shuts down due to an excessive load or a short circuit.

Recommended action:

- Check the drive unit and drive unit installation.
- Look for mechanical obstructions.
- Check the manual steering.

High drive temp*

Probable cause: The NAC-1 drive output circuit is overheated due to excessive load.

Recommended action:

- Switch the Autopilot to Standby.
- Check the drive unit (see "Rudder drive overload").

Drive inhibit*

Probable cause: There is an internal NAC-1 failure causing the drive output circuit to shut down.

Recommended action: Contact support.

Low CAN bus voltage

Probable cause: The CAN bus voltage is less than 9V.

Recommended action:

- Check cabling.
- Check battery condition.
- Check charging voltage.

Jeppesen charts

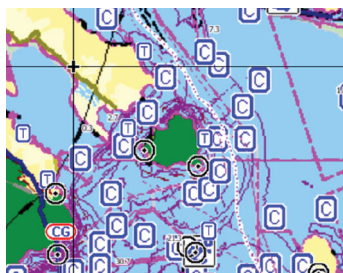
Jeppesen tides and currents

The system can display Jeppesen tides and currents. With this information it is possible to predict the time, level, direction and strength of currents and tides. This is an important tool when considering planning and navigation of a trip.

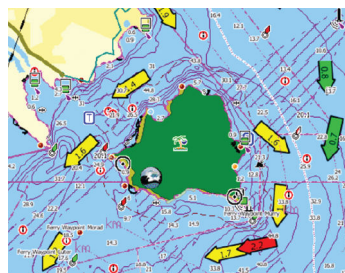
In large zoom ranges the tides and currents are displayed as a square icon including the letter **T** (Tides) or **C** (Current). When you select one of the icons, tidal or current information for that location are displayed.

Dynamic current data can be viewed by zooming inside a 1-nautical mile zoom range. At that range, the Current icon changes to an animated dynamic icon that shows the speed and direction of the current. Dynamic icons are colored in black (greater than 6 knots), red (greater than 2 knots and less than or equal to 6 knots), yellow (greater than 1 knot and less than or equal to 2 knots) or green (equal to or less than 1 knot), depending on the current in that location.

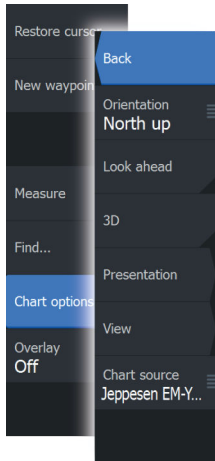
If there is no current (0 knots) this will be shown as a white, square icon.



Static Current and Tide icons



Dynamic Current icons



Jeppesen specific chart options

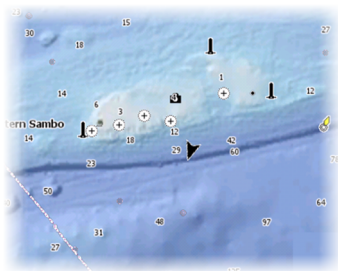
Orientation, Look ahead, 3D, and change Chart source (previously described in this section) are common for all chart types.

Presentation

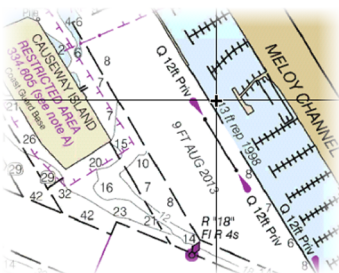
The charts can be displayed in different imagery styles.



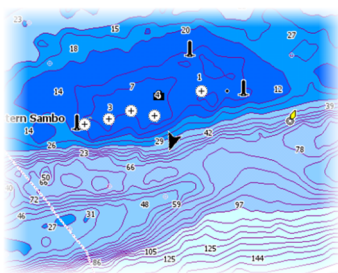
Shaded relief



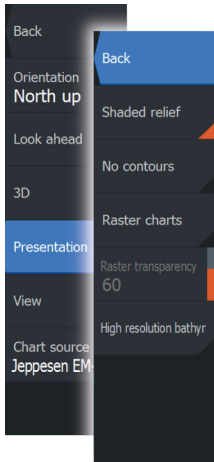
No contours



Raster imagery



High resolution bathymetry



Shaded relief

Shades seabed terrain.

No contours

Removes contour lines from the chart.

Raster charts

Changes the view to that of a traditional paper chart.

Raster transparency

Controls the transparency of raster imagery.

High resolution bathymetry

Enables and disables higher concentration of contour lines.

Jeppesen view options

Chart detail

- **Full**
All available information for the chart in use.
- **Medium**
Minimum information sufficient for navigation.
- **Low**
Basic level of information that cannot be removed, and includes information that is required in all geographic areas. It is not intended to be sufficient for safe navigation.

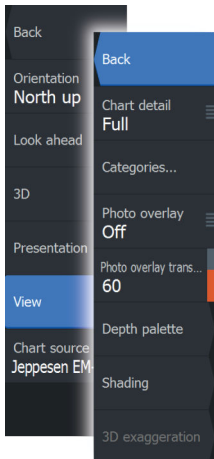
Jeppesen chart categories

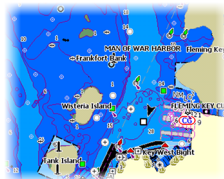
Jeppesen charts include several categories and sub-categories that you can turn on/off individually depending on which information you want to see.

Photo overlay

Photo overlay enables you to view satellite photo images of an area as an overlay on the chart. The availability of such photos is limited to certain regions, and cartography versions.

You can view photo overlays in either 2D or 3D modes.





No Photo overlay



Photo overlay, land only



Full Photo overlay

Photo transparency

The Photo transparency sets the opaqueness of the photo overlay. With minimum transparency settings the chart details are almost hidden by the photo.



Minimum transparency



Transparency at 80

Depth palette

Controls the Depth palette used on the map.

Paper chart

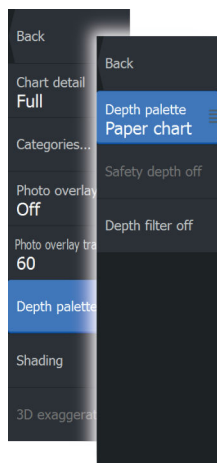
Changes the appearance of the map to a paper chart style.

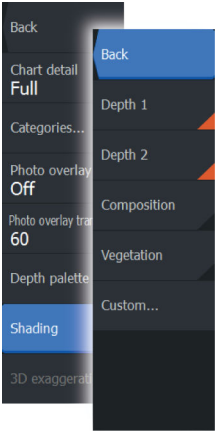
Safety depth

Jeppesen charts use different shades of blue to distinguish between shallow (lighter shades) and deep (darker shades) water. After enabling Safety depth, specify the desired safety depth limit. The Safety depth sets the limit at which depths will be drawn without blue shading.

Depth filter

Filters out depth values shallower than the selected depth filter limit.





Shading

Shades different areas of the seabed, depending on the selected Shading category. Shading options only work for certain Jeppesen charts.

→ **Note:** Composition and Vegetation shading are not applicable to Jeppesen charts.

Depth 1 and Depth 2

Depth presets that shade different depths in different colors.

Custom

You can adjust the depth threshold, color and opacity (transparency) of color shading for Depth 1 and Depth 2.

Custom Shading

Depth 1

Depth 2

Composition

Vegetation

Depth (m)	Color	Opacity (%)
0		100
12		100
24		100
37		100
49		100
61		100
73		100

3D exaggeration

Graphical settings that are available in 3D mode only. Exaggeration is a multiplier applied to the drawn height of hills on land, and troughs in water to make them look taller or deeper.

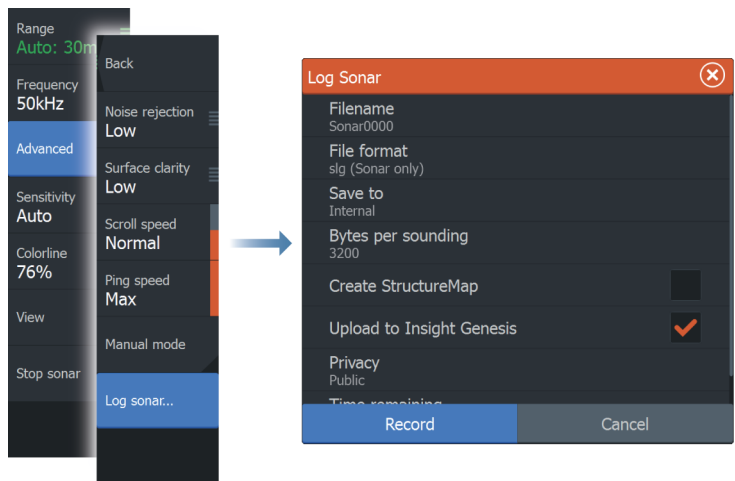
→ **Note:** This option is grayed out if the data is not available in the map card inserted.

Recording log data

You can record Sonar and StructureScan log data and save the file internally in the HDS Gen2 Touch unit, or save it onto a card inserted into the unit's card reader.

The **Log sonar** dialog is activated from the **Advanced** menu option, or the from the **Sonar Settings** dialog.

When the Sonar image is being recorded, there is a flashing red symbol in the top left corner and a message appears periodically at the bottom of the screen.



The following new options are available in the **Log Sonar** dialog:

Upload to Insight Genesis

Files are transmitted to Insight Genesis when recording completes, if you are connected to a wireless hotspot. For information about wireless hotspots, refer to "*Wireless connection*" on page 3.

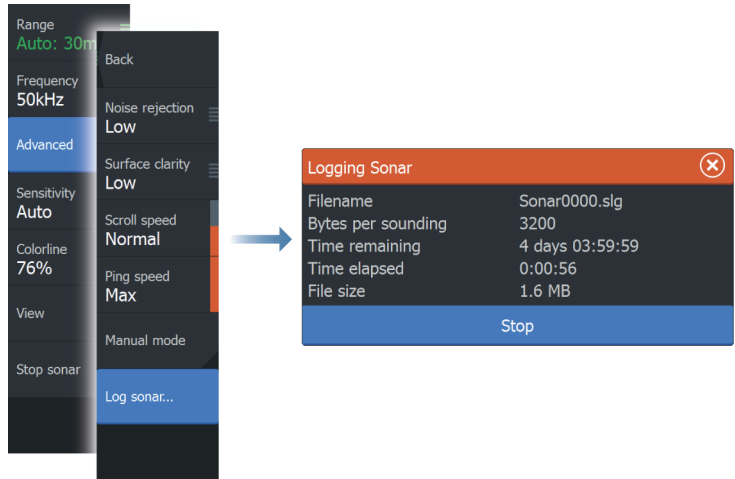
Privacy

If you have a Premium Insight Genesis account, you can set the recorded log files as **Private** at Insight Genesis. Otherwise, all log files uploaded are **Public**.

Stop recording log data

Select **Stop** in the Logging Sonar dialog to fully stop the recording of all sonar log data.

→ **Note:** If you have selected the **Upload to Insight Genesis** option and are connected to a wireless hotspot, your recorded files are transmitted to Insight Genesis when you select **Stop**.



Mercury VesselView integration

Mercury VesselView SmartCraft data display and interaction are enabled through the HDS Gen2 Touch when a VesselView 7 or VesselView 4 gateway device is present on the NMEA 2000 network.

A Mercury icon appears on the **Home** page when the device is available. Mercury VesselView settings are accessed from the menu bar at the bottom of the Mercury VesselView screen.

For more details on VesselView engine monitoring and control refer to Mercury VesselView documentation. The following VesselView interactions are not fully supported by your HDS:

- Smart Tow
- Descriptive fault text
- Zeus Axis AutoPilot control

Device identification

A Mercury VesselView 4 or 7 device connected to the NMEA 2000 network should automatically be identified by the HDS unit. If VesselView features are not automatically enabled, you can enable them from the System settings Advanced menu. Refer to your operation manual for information on enabling features.

Sonar, chart and radar features are activated on the Mercury VesselView7 when it is connected to an HDS unit. The VesselView7 unit does not have built-in sonar, but can display sonar from your HDS unit, when connected via Ethernet.

SmartCraft VesselView integration

SmartCraft data can be displayed and interaction are enabled through the HDS Gen2 Touch when a VesselView 7 or VesselView 4 gateway device is present on the network.

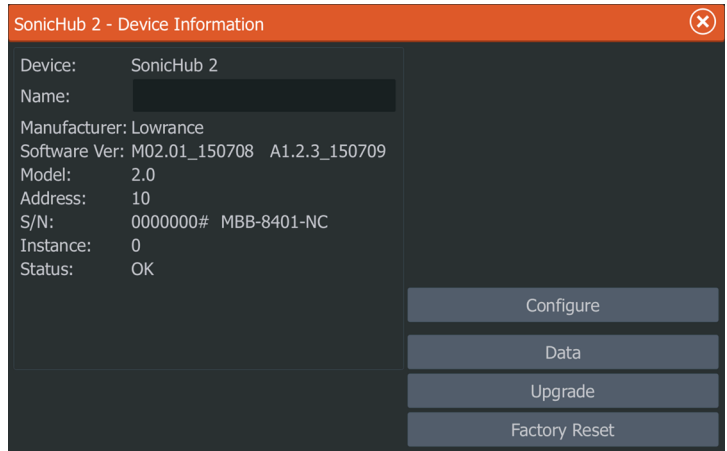
The engine supplier icon appears on the **Home** page when a device is available.

SonicHub 2 supported

A SonicHub 2 connected to the NMEA 2000 network is supported.

SonicHub 2 Device Information

Open the Network Settings dialog and select the SonicHub 2 device in the Device list. This opens the SonicHub 2 Device Information dialog.



Configure

Select to configure the device.

Upgrade

Updates the device software.

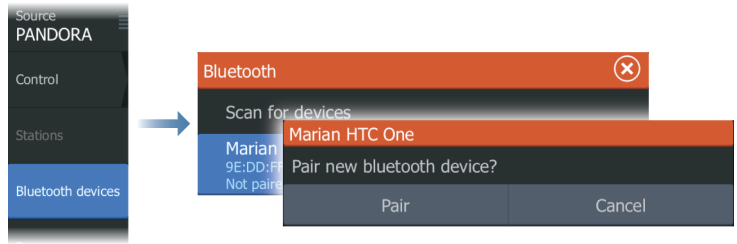
- **Note:** A USB memory stick with the software upgrade must be plugged into the device. Periodic software updates may be available from the product website. Detailed instructions for how to install the software are included with the upgrade files.

Factory Reset

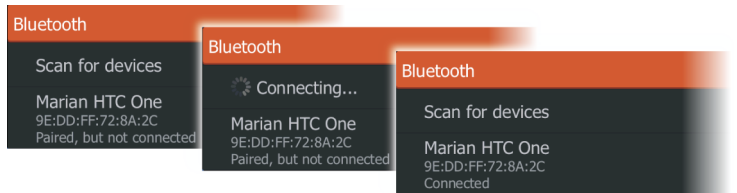
Resets the device to factory defaults.

SonicHub 2 is Bluetooth enabled

The SonicHub 2 is a Bluetooth enabled device. You can use the SonicHub 2's built-in Bluetooth wireless to connect it to Bluetooth enabled audio devices.



The SonicHub 2 connects to the paired device.

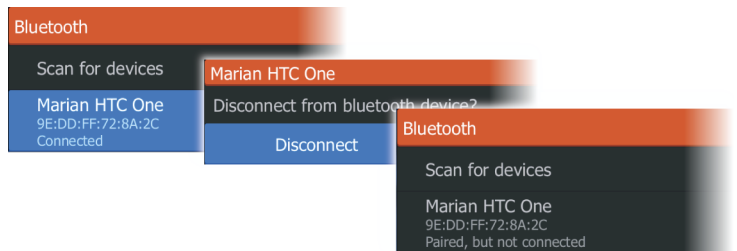


Connecting and disconnecting paired devices

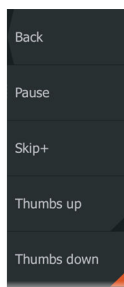
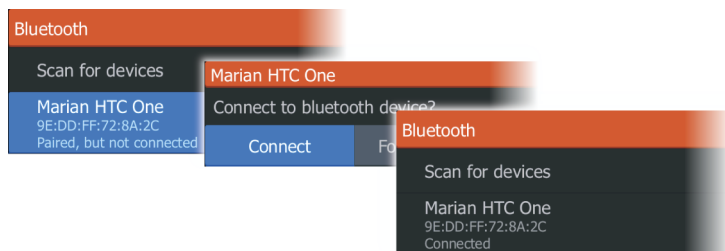
The SonicHub 2 automatically connects to a device when you pair them. You can pair it to several devices but only one device can be connected at a time.

You can manually disconnect and connect the SonicHub 2 to paired devices.

To disconnect a paired device, select the paired device in the device list and then select **Disconnect**.



To connect to a paired device, select the paired device in the device list and then select **Connect**.



Pandora

The SonicHub 2 supports streaming music from Pandora from an Android device (over Bluetooth) or IOS device (over USB and Bluetooth).



Note: You must be in a valid location to use Pandora. Refer to the Pandora website for more information.

Use menu controls to run Pandora on the smart device.

New SiriusXM weather features

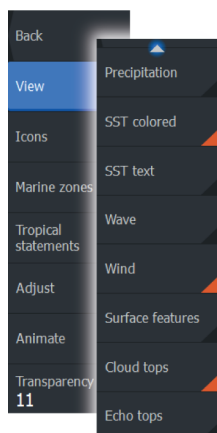
New SiriusXM weather features are supported. SiriusXM data sources have been integrated to provide improved accuracy and detail. Improvements include sea-surface temperature (coastal and the Great Lakes), nearshore wave height, and inland wind speed and direction. Support for new SiriusXM Canadian marine zone text is added and the Marine zone feature is changed. In addition, there are 3 new View menu options.

Marine zones

Depending on your selected subscription, SiriusXM services includes access to weather reports for U.S. and Canadian Marine Zones, with the exception of the high seas zones.

You can select a marine zone on a chart and view its forecast. You can also select a marine zone as your current zone of interest and you will be notified of any weather warnings in that zone.

New View menu options



Surface features

Turns surface features on/off. Surface features include fronts, isobars, and pressure points. Surface features cannot be shown at the same time as Wind.

Cloud tops

Turn Cloud tops on/off. Cloud tops indicate the height of the top of the clouds. The color palette used is grey with darker greys indicating lower clouds. Cloud tops cannot be shown at the same time as Precipitation or Echo Tops.

→ **Note:** This feature is only available for certain SiriusXM subscriptions.

Echo tops

Turns Echo tops on/off. Echo tops indicate the tops of storms. The color palette used is the same as for Precipitation. Echo tops cannot be shown at the same time as Precipitation or Cloud Tops.

→ **Note:** This feature is only available for certain SiriusXM subscriptions.

System and network devices analyzer

The system has a built-in network analyzer that creates a report of the devices installed on the NMEA2000 and Ethernet network. It can also create a service report about your system and network devices such as the software versions, serial numbers, and information from the settings file.

To use the analyzer, open the About page of the System settings dialog and select Support. Two options are displayed:

Create report

Prompts you for information for support and creates the report with information automatically gathered from the network. You can add screenshots and log files to the report. The maximum report size is 20 MBs. You can save the report to a memory card and email it to support.

Check system for updates

Checks if updates are available for compatible devices on your network.

→ **Note:** To ensure the internal list of software versions is up to date, your system must be connected to the internet.

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