

LOWRANCE®

StructureScan™ HD

Sonar Imaging

Operation Manual



**Copyright © 2012 Navico
All Right Reserved.**

No part of this manual may be copied, reproduced, republished, transmitted or distributed for any purpose, without prior written consent of Navico.

StructureScan™ is a trademark and Lowrance® and Navico® are registered trademarks of Navico, Inc.

Navico may find it necessary to change or end our policies, regulations and special offers at any time. We reserve the right to do so without notice. All features and specifications subject to change without notice.

For user manuals and the most current information on this product, its operation and accessories, visit our web site:

www.lowrance.com

Disclaimer

As Navico is continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the instrument and transducers in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing safe boating practices.

NAVICO HOLDING AS. AND ITS SUBSIDIARIES, BRANCHES AND AFFILIATES DISCLAIM ALL LIABILITY FOR ANY USE OF THIS PRODUCT IN A WAY THAT MAY CAUSE ACCIDENTS, DAMAGE OR THAT MAY VIOLATE THE LAW.

Governing Language: This statement, any instruction manuals, user guides and other information relating to the product (Documentation) may be translated to, or has been translated from, another language (Translation). In the event of any conflict between any Translation of the Documentation, the English language version of the Documentation will be the official version of the Documentation.

This manual represents the product as at the time of printing. Navico Holding AS. and its subsidiaries, branches and affiliates reserve the right to make changes to specifications without notice.

Copyright © 2012 Navico Holding AS.

Contents

StructureScan	3
Sidescan.....	3
Downscan.....	4
Displaying Sidescan and Downscan	6
Screen Configurations	6
Overlay Downscan	7
Overlay Transparency	8
StructureScan Menu	9
Contrast.....	9
Range.....	9
View.....	10
Structure Options	11
Structure Surface Clarity	11
Structure Noise Rejection	11
Stop Sonar.....	13
Log sonar.....	13
Viewing Structure History	14
Save Waypoints.....	15
StructureMap	16
Turning on Structure overlay	17
Selecting Structure Source	17
Live mode.....	17
Saved mode	18
Recording Structure data.....	19
Scanning Fishing areas	20
Sharing files.....	20
Structure options	22

Softkeys

Instructions in this manual are based on HDS unit menus, not softkeys. If you have an HDS-8 or HDS-10, you can get the same results using the softkeys.



To use softkeys:

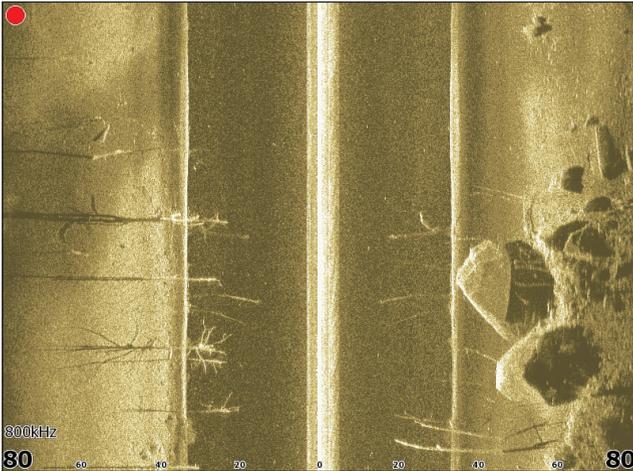
1. Touch the desired softkey to change settings, view a softkey menu or adjustment scrollbar.
2. Use the keypad to select menu items and make adjustments to scrollbars. Press **EXIT** to close softkey menus.



NOTE: After making adjustments to options or settings, use the **EXIT** key to resume normal operation.

StructureScan

Consists of two powerful sonar views: Sidescan and Downscan. Used in conjunction with the built-in broadband sounder, StructureScan gives you an underwater panoramic view.



Sidescan

Sidescan

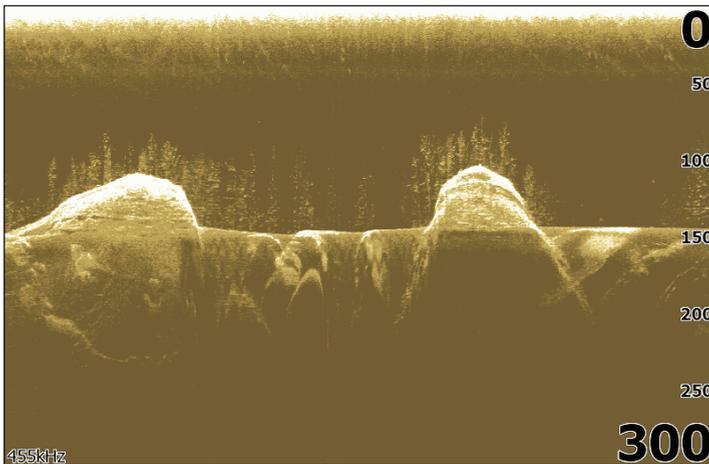
Broadcasts a sonar beam to each side of your boat allowing you to view structure, and terrain without having to drive your boat over the top of it.

You can use Sidescan to:

- Save waypoints at objects/locations off to side of the boat
- Review history
- Measure the size of underwater objects and the distance from one object/location to another object/location using live Sidescan returns or Sidescan history
- Create sonar logs

Downscan

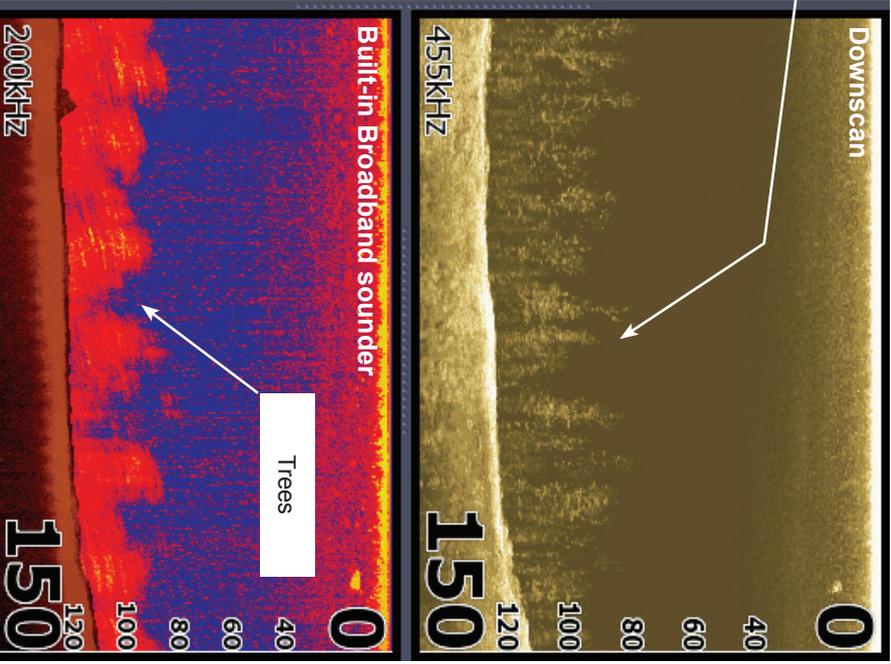
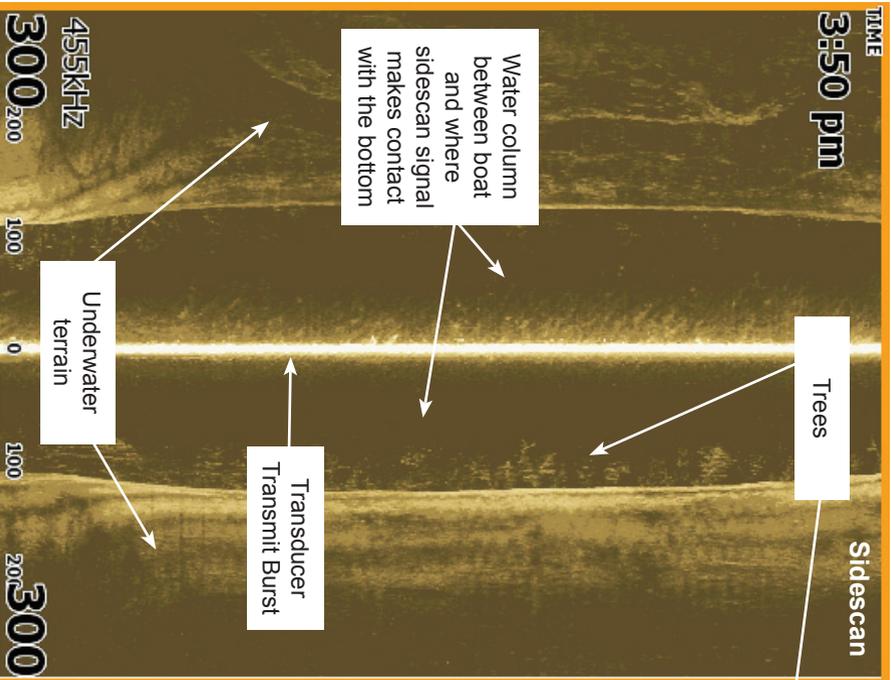
Uses the same technology as sidescan, but broadcasts the beam downward, giving you the same high resolution in a familiar right to left display.



Downscan

You can use Downscan to:

- See different view of objects/locations selected with cursor on Sidescan panel
- Save waypoints
- Review history and create sonar logs
- Overlay Downscan imaging on the sonar page

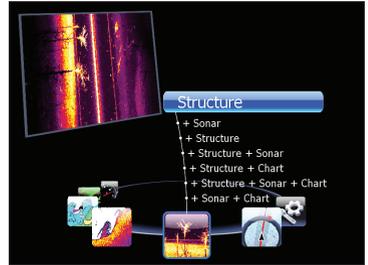


Displaying Sidescan and Downscan

Sidescan and Downscan can be shown on the display individually or together in different split screen configurations.

To display Sidescan:

1. Press the **PAGES** key.
2. Use the keypad to rotate the carousel menu until *Structure* is selected.
3. Press **ENTER**.



Pages screen for HDS-8 /10 units.

To display Downscan:

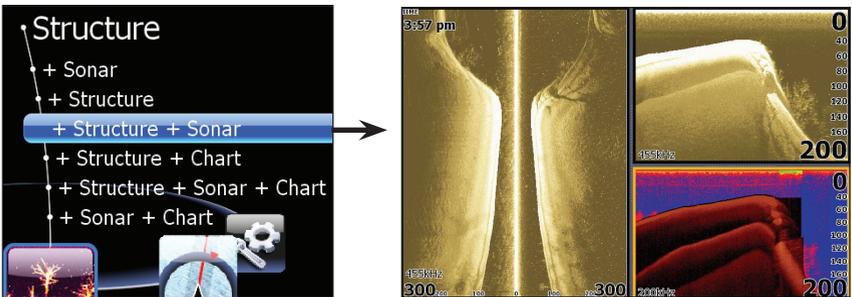
1. From the Sidescan onscreen display, press **MENU**.
2. Select *Structure Options* and press **ENTER**.
3. Highlight *View* and press **ENTER**.
4. Select *Down* and press **ENTER**.



NOTE: To access the StructureScan menu, press **MENU** from a StructureScan page or from an active StructureScan panel.

Screen Configurations

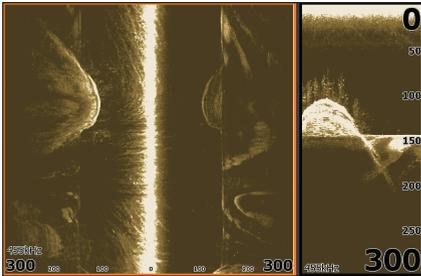
StructureScan can be shown with other pages in various screen configurations including: splitscreen, tri-screen and quad screen (HDS-8/10 only).



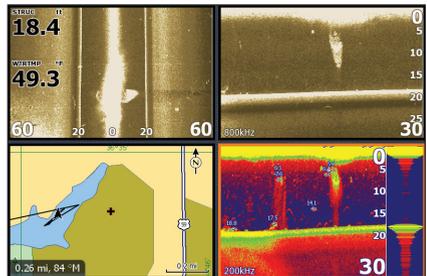
Selecting *Structure + Sonar* from the Structure menu displays a tri-screen with two StructureScan panels and a sonar panel.

To display a split, tri or quad screen:

1. Press the **PAGES** key.
2. Press the keypad left/right to rotate the carousel menu until *Structure* is selected.
3. Press the keypad up/down to select the desired combination of panels and press **ENTER**.



Structure + Structure Splitscreen



Structure + Structure + Sonar + Chart Quadscreen (HDS -8/10 only).



NOTE: To switch the active panel on a multi-screen display, hold down the Pages key until the orange border switches to the next panel. Repeat this step to rotate active status to the next panel.

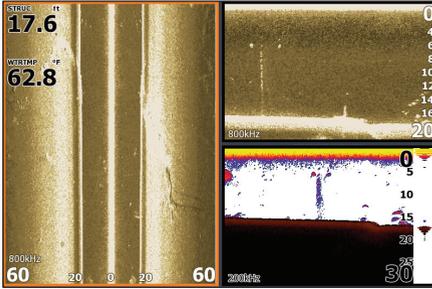
Overlay Downscan

Places downscan data on top of sonar data, making it easier to separate fish from structure.

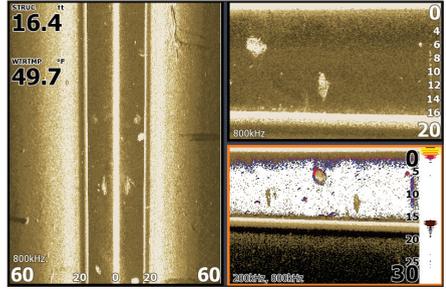
To turn on Downscan Overlay:

1. Press **MENU** twice.
2. Select *Sonar* and press **ENTER**.
3. Highlight *Overlay Downscan* and press **ENTER**.





Downscan overlay set to 0%.



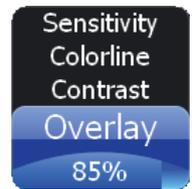
Downscan overlay set to 85%

Overlay Transparency

Controls the transparency of Downscan overlay on the sonar page, allowing you to select an overlay level best suited for current water conditions.

To make adjustments to Overlay:

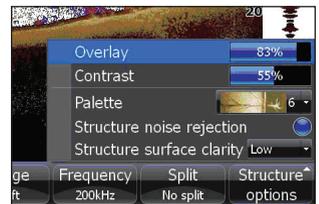
1. Make sure the sonar panel is the active panel. Press **MENU**.
2. Select *Adjust* and press **ENTER**.
3. Use the keypad to highlight *Overlay*.
4. Press the keypad left/right to decrease/increase overlay transparency.



StructureScan Options Softkey

If you have an HDS-8 or HDS-10, you will notice the Stop Sonar softkey is replaced with the Structure Options softkey when Overlay Downscan is turned on.

That gives you one-touch access to StructureScan display options and settings, including the Overlay adjustment scrollbar.



StructureScan Menu

Provides access to StructureScan features, settings and the Structure Options menu.

To access the StructureScan menu, press **MENU** from the StructureScan page.



Structure menu

Contrast

Controls the level of contrast used on the display.

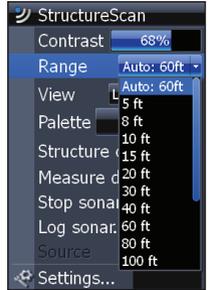
To make adjustments, highlight **Contrast** on the StructureScan menu and press the keypad left/right to decrease/increase the contrast level.

Range

Used to adjust the width of a sidescan image and controls the section of the water column shown when downscan is the selected view.

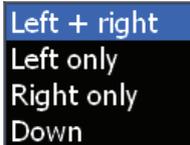
To select Range:

1. Select **Range** from the Structure menu and press **ENTER**.
2. Use the keypad to select the desired range and press **ENTER**.



View

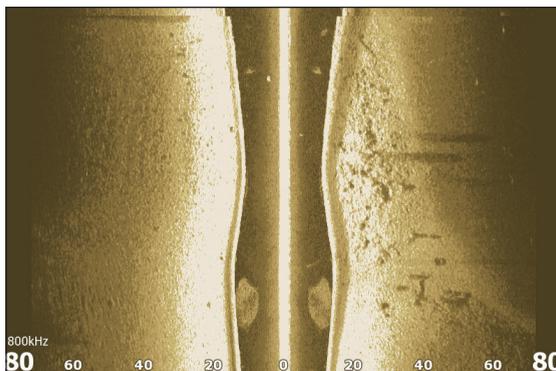
Controls the view your unit will use when displaying StructureScan data. In a multi-panel display, you can select different views for each StructureScan panel.



View menu

To select a View:

1. Select *View* from the StructureScan menu and press **ENTER**.
2. Highlight the desired option and press **ENTER**.



Left and Right selected on View menu.



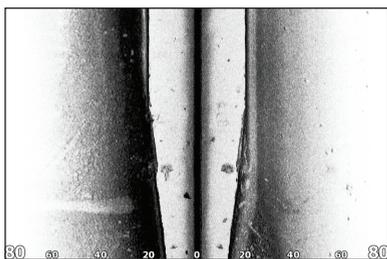
Left Only



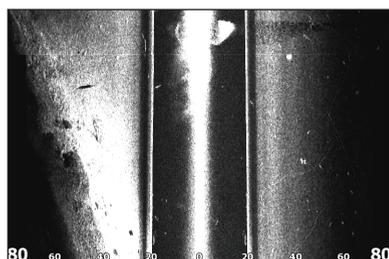
Right Only

Palette

Gives you control of the overall look and feel of the display by allowing you to select a palette with color and brightness levels geared toward your viewing preferences.



Palette No. 1



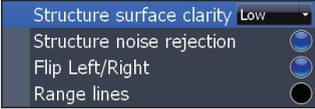
Palette No. 2

To select a Palette:

1. Select *Palette* from the StructureScan menu and press **ENTER**.
2. Use the keypad to select the desired palette and press **ENTER**.

Structure Options

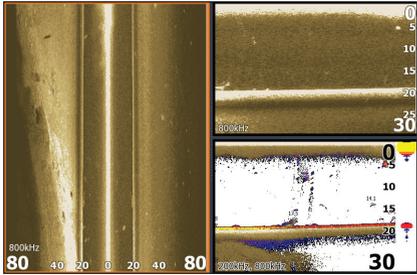
To make adjustments to StructureScan display settings, highlight *Structure Options* on the StructureScan menu and press **ENTER**.



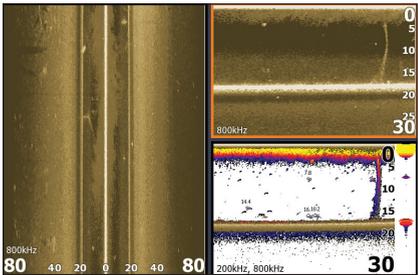
Structure Options menu

Structure Surface Clarity

Adjusts sensitivity near the surface of the water to reduce or eliminate onscreen clutter caused by wave action, boat wakes, temperature inversion, etc.



Structure Surface Clarity turned off.



Structure Surface Clarity on High.

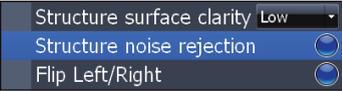
To adjust Surface Clarity:

1. Select *Structure Surface Clarity* from the Structure Options menu and press **ENTER**.
2. Use the keypad to select the desired setting and press **ENTER**.

Structure Noise Rejection

Reduces onscreen clutter caused by bilge pumps, engine vibration, air bubbles or other transducers on your boat.

To turn Structure Noise Rejection On/Off, highlight *Structure Noise Rejection* on the Structure Options menu and press **ENTER**.



Flip Left/Right

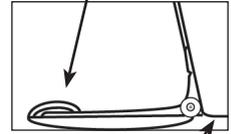
Controls the orientation of the sidescan/downscan onscreen display.

If the transducer is installed with the cabled end pointing away from the back of your boat (Direct Step Mount) or pointing away from the front of your trolling motor, you must turn on Flip Left/Right.

Cabled end of transducer

That will ensure that what is on the left or right side of your boat underwater, will be shown on the corresponding side of the screen on your display unit.

To turn on/off Flip Left/Right, highlight *Flip Left/Right* on the Structure Options menu and press **ENTER**.

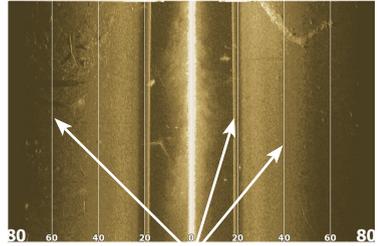


Back of the boat

Range Lines

Onscreen lines that make it easier to estimate depth of sonar targets (Downscan) or distance from sonar targets (Sidescan).

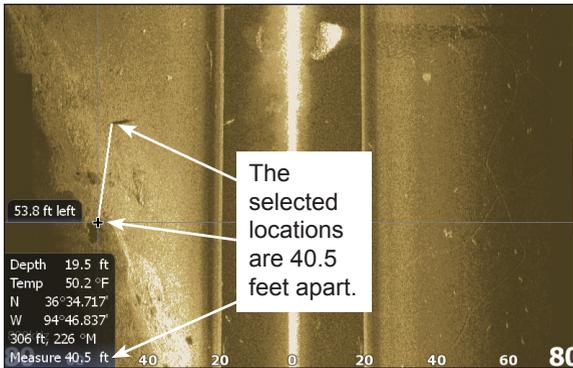
To turn on/off Range Lines, select *Range Lines* on the Structure Options menu and press **ENTER**.



Range Lines shown in Sidescan view.

Measure Distance

Measures the size of underwater objects and the distance from one object/location to another object/location.



To Measure Distance:

1. Press **MENU** from a StructureScan page.
2. Highlight *Measure Distance* and press **ENTER**.
3. Use the keypad to move the cursor into the desired position.
4. To measure the distance from the selected location to another object or location press **ENTER** and move the cursor.
5. Press **EXIT** to return to normal operation.

Stop Sonar

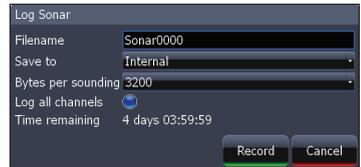
Stops Sidescan and Downscan sonar from the scrolling, allowing you to get a closer look at onscreen objects or locations.

To pause/restart the chart, highlight **Stop Sonar** on the Structure menu and press **ENTER**.

Log sonar

Records sonar logs, allowing you to review StructureScan and broadband sonar data later via an MMC or SD card.

To access the Log Sonar menu, select **Log Sonar Data** from the Structure menu and press **ENTER**.



Log Sonar Menu	
Filename	Input the desired name for the sonar log file
Save to	Selects location where sonar log will be saved/stored; to save data to MMC/SD card, select Memory Card
Bytes	Controls number of bytes per sounding. More bytes yields better resolution/shorter logging time; conversely, fewer bytes produces longer sonar logs/lower resolution
Log All Channels	Logs StructureScan data and conventional sonar data simultaneously. When logging all channels, logs are saved in .SI2 format instead of .slg format. <i>The .SI2 file format is not compatible with non-HDS units.</i>
Time Remaining	Recording time left until memory storage runs out

To input a filename:

1. Highlight the Filename text box and press **ENTER**. A keypad will appear on the screen.
2. Use the keypad to input the desired filename.
3. Select **OK** and press **ENTER**.



To adjust *Save to* or *Bytes per Sounding*:

1. Highlight *Save to* or *Bytes per Sounding* from the Sounder Logging menu and press **ENTER**.
2. Use the keypad to select the desired option and press **ENTER**.

To turn on/off *Log All Channels*:

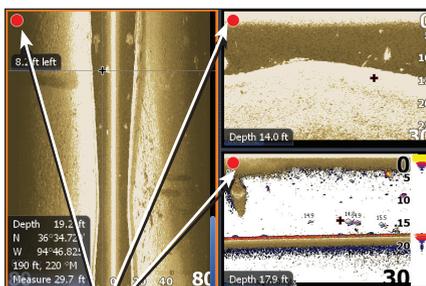
1. Highlight *Log All Channels* on the Log Sonar menu.
2. Press **ENTER**.

Record

To record a sonar log, highlight the Record button and press **ENTER**.

To stop logging:

1. Select *Stop* from the Sounder Logging menu and press **ENTER**.
2. Highlight the *Stop Logging* button and press **ENTER**.



Red circle indicates sonar log is being recorded;
All Channels are being logged in this example

Source

Selects the transducer data that will be shown by a your display unit when there is more than one StructureScan transducer connected to an ethernet network.

To select a source:

1. Select *Source* from the Structure menu and press **ENTER**.
2. Highlight the desired option and press **ENTER**.

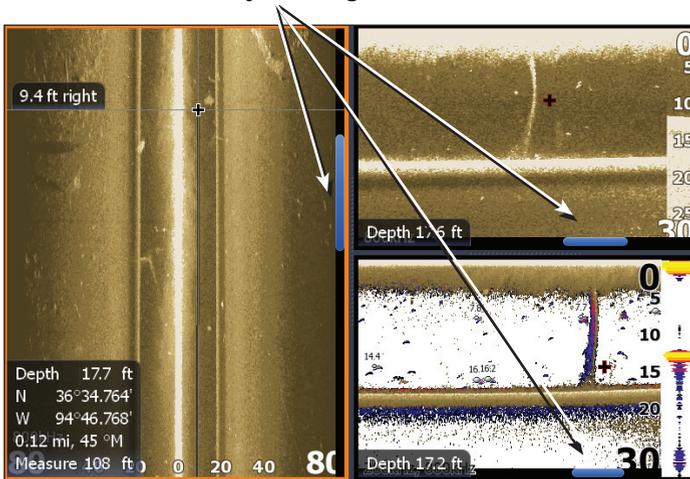
Settings

Opens the Sonar Settings menu.

Viewing Structure History

You can view Sidescan or Downscan history individually — by displaying them full screen — or simultaneously by adding them to a multi-panel screen.

Blue history tracking bars



To view history:

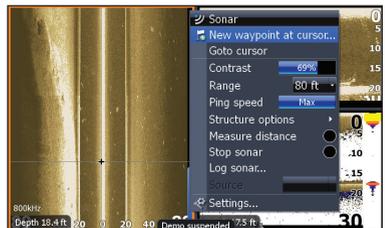
1. From a StructureScan page, press the keypad down (Sidescan) or to the left (Downscan). The blue history tracking bar will appear helping you keep tabs on where you are in the history log.
2. To return to normal operation, press **EXIT**.

Save Waypoints

You can save waypoints using both Sidescan and Downscan views, allowing you to mark a desired object/location so you can revisit it later.

To save a waypoint:

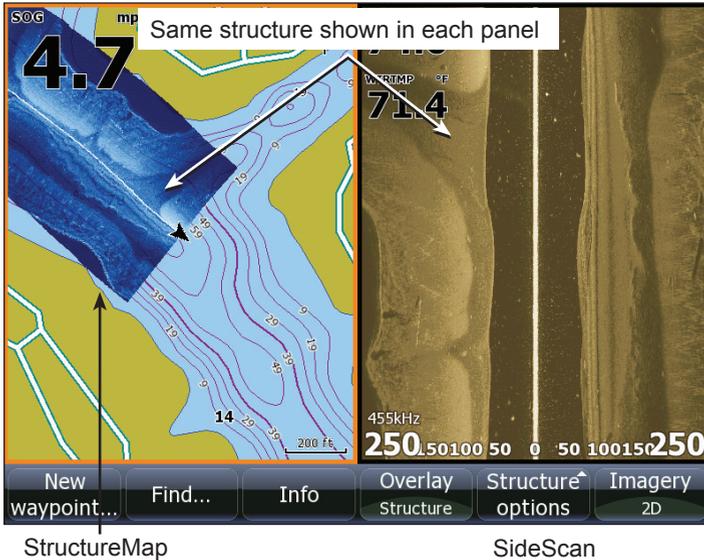
1. Press the keypad to activate the cursor.
2. Move the cursor over the desired object/location and press **MENU**.
3. Select *New Waypoint at Cursor* and press **ENTER**.



NOTE: You can save a waypoint by moving the cursor into the desired position and pressing Enter or the Wpt key from the StructureScan or Sonar pages.

StructureMap

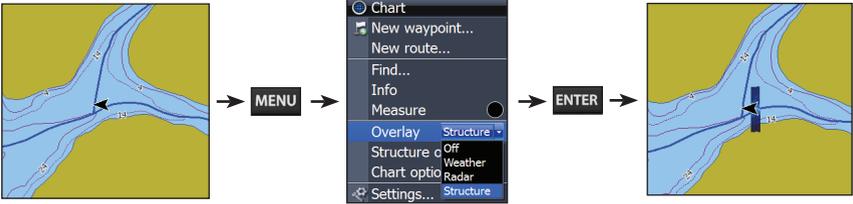
StructureMap is a tool that allows you to overlay SideScan sonar returns on top of the chart, giving you a birds-eye view of underwater structure below and beside your boat. StructureMap makes it easier for you to visualize the underwater environment in relation to your position and aids the user in interpreting sidescan sonar images.



Viewing StructureMap data

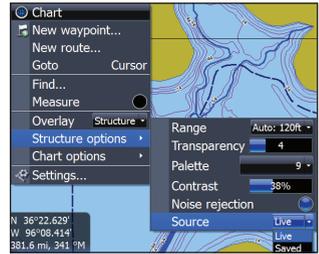
You can view StructureMap data by turning on Structure overlay from the Chart menu, or by using the Overlay softkey (HDS-8/10). StructureMap data will start to appear on the Chart screen as soon as Structure overlay is enabled. The Structure Source setting determines whether the StructureMap information you want to view is live or previously recorded.

Turning on Structure overlay



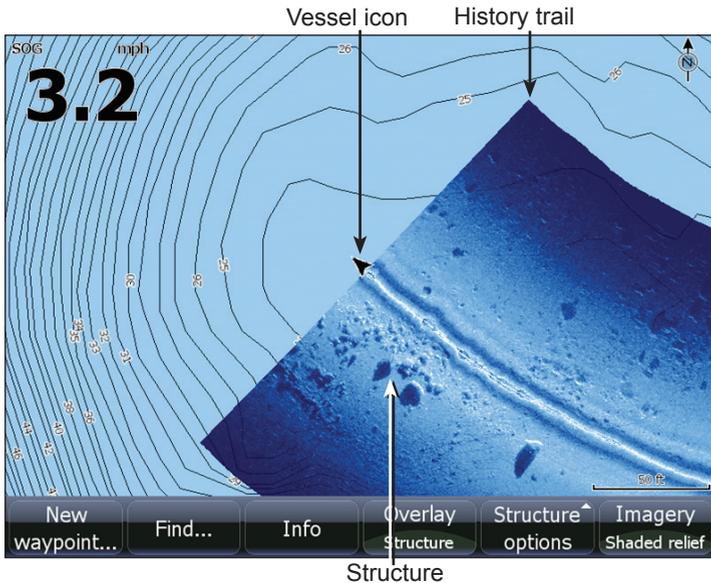
Selecting Structure Source

StructureMap can be used in Live mode or Saved mode. Live mode allows you to view real-time StructureMap data on the screen. Saved mode is used to display StructureMap data previously saved to a SD card or the unit's internal memory.



Live mode

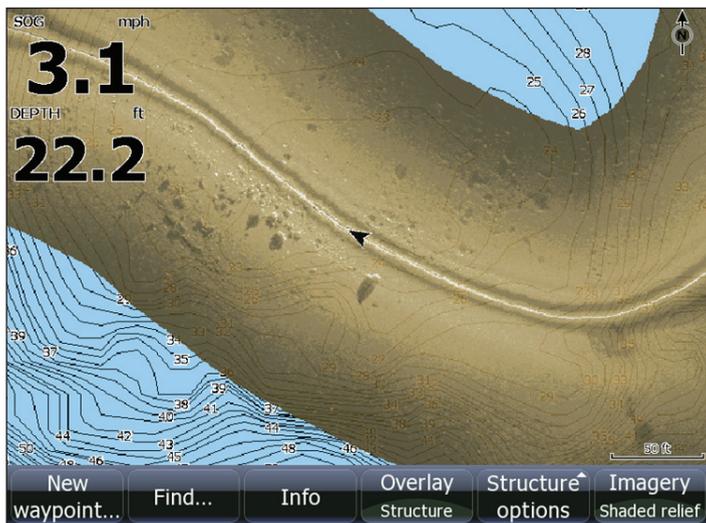
Displays the last few minutes of the Side Imaging history as a trail behind the vessel icon. The length of this trail will vary depending on the Side Imaging and Down Imaging range settings. The higher the range settings the longer



the history length that will show up behind the vessel icon. Typically it will display the last 4-5 minutes of recording. Live mode allows the user to quickly identify interesting areas of the lake and how they relate to vessel position. It also allows the user to scroll back and zoom in on a recently scanned areas of the lake to look at additional details of what was scanned. Live mode does not save any data. If the unit is turned off, all recent sonar history is lost. You must have Structurescan installed on your boat to use Live mode.

Saved mode

Displays StructureMap (.smf) files that have been created from structure sonar log (.sl2) files. Saved mode is used to view a map of the underwater environment that can be reviewed and examined either on or off of the



Navigating a StructureMap in saved mode

water. It can be used when revisiting an area that has already been scanned in order to assist the user in positioning the vessel or locating specific points of interest.



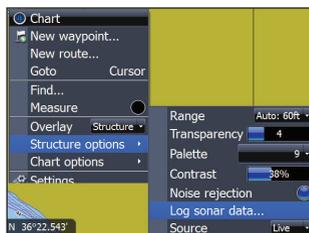
NOTE: *If there is more than one StructureMap of the same area on the same SD card, the maps will overlap on your screen. If you want to have more than one map of the same area, you should put the maps on separate SD cards.*

Accessing StructureMap files on SD card

All StructureMap files on your SD card or in the unit's internal memory will automatically appear on the screen when Saved mode is selected.

Recording Structure data

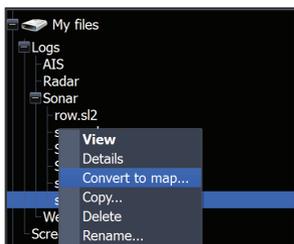
To record structure data, steer your boat over an area and select **Log Sonar data** from the Structure Options menu. Refer to your operation manual for more information about sonar log options.



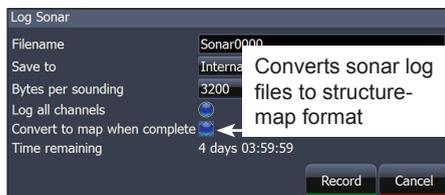
NOTE: For best results, we recommend turning off Auto Range when recording a structure sonar log (.sl2).

Converting files

To create a StructureMap file you must convert a structure sonar log (.sl2) file to StructureMap format (.smf). This can be done automatically from the Sonar Log menu, or manually by converting logs from the Files menu. We recommend using an SD card for recording when possible, due to the



Manual conversion



Automatic conversion



NOTE: Keep the size of your sonar logs to 100MB or less to allow for faster file conversion. Current file size is occasionally flashed on the screen during the recording process. You will not be able to use any of the unit's other functions while a file is being converted.

limited size of the HDS internal memory. To have structure sonar log (.sl2) files automatically converted to StructureMap file format (.smf), turn on **Convert to map when complete** on the Sonar Log menu. The (.sl2) file will be converted to a (.smf) file when recording is stopped.

Sharing files

After structure sonar log (.sl2) files are converted to StructureMap (.smf) files, they can be saved to a SD card and used on other GPS capable HDS Gen 2 units without the need for the StructureScan module.

Scanning Fishing areas

With the Structure Source set to the default Live mode, steer the boat over the desired location to scan the area. When conducting a side-by-side scan of an area, you will get a cleaner scan if you do not overlap history trails and you turn off auto ranging on the sidescan.



Side-by-side scan

Scanning tips

- To get a picture of taller structure (a wreck, etc) — don't drive over it. Steer the boat so the structure will be on the left or right side of your boat.
- Set your structure range to a significantly greater level (two-to-three times) than the water depth to ensure a complete scan and to maximize conversion accuracy.



NOTE: Optimal speed for viewing or logging StructureMap data is between 2-8 mph (3-12 kmh). Live mode is disabled for speeds greater than 10 mph.

Using StructureMaps with mapping cards

StructureMap allows you to maintain full chart capability and can be used with embedded cartography as well as Navionics, Insight and other third-party charting cards compatible with HDS units. To view StructureMap data with other mapping card data on an HDS-8 or HDS-10, place the mapping card in one card slot and the SD card with the StructureMap file in the other slot.

If you have an HDS-5 or HDS-7, copy the StructureMap (.smf) files to the units internal memory to view StructureMap data with data from another mapping card. We recommend only adding StructureMap (.smf) files of one lake at a time to the internal memory due to limited space. You should keep copies of StructureMap (.smf) files on an external SD card.

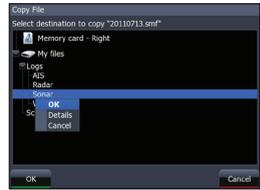
Copying StructureMap (.smf) files from SD to internal memory



Access files



Copy StructureMap (.smf) file from card



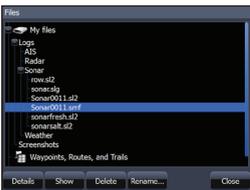
Place file into sonar logs

Refer to your operation manual for more information about copying files.

Show StructureMap (.smf) files

You can view StructureMap (.smf) files from the Files menu, which allows you to quickly see what area each StructureMap file covers.

Viewing StructureMap (.smf) files



Select StructureMap (.smf) file

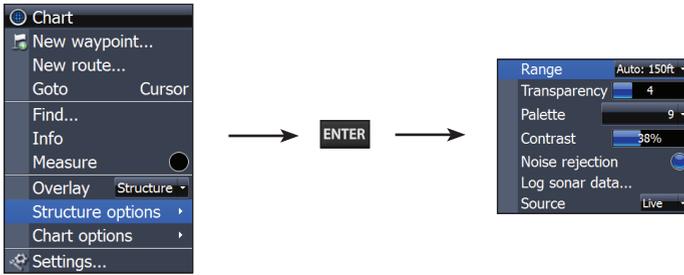


Select Show



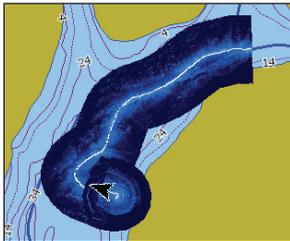
StructureMap appears on the screen

Accessing Structure Options

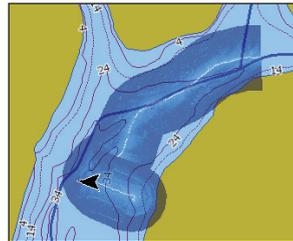


Structure options:

- **Range** — Adjusts the width of the sidescan history trail. The greater the range setting, the wider the StructureMap history trail; Lower range settings reduce the width of the history trail.
- **Transparency** — Increases/decreases the visibility of Structure overlay on top of the map. This is helpful when using marine mapping cards.



Minimum Transparency



Maximum Transparency

As you increase Structure overlay Transparency, you will be able to see more marine card map data through the Structure overlay.

- **Palette** — Used to select a color scheme that allows the Structure-map detail to appear more clearly on the underlying chart.
- **Contrast** — Adjusts the brightness ratio between light and dark areas on the screen, making it easier to distinguish suspended objects from the background.
- **Noise Rejection** — Monitors the effects noise (boat pumps, water conditions, engine ignition systems, etc.) has on your display, and then filters out undesired signals.
- **Source** — Selects StructureMap Source, Live mode or Saved mode

Accessory Ordering Information

store.navico.com/lowrance is the accessory source for sonar and GPS products manufactured by Lowrance Electronics. To order Lowrance accessories, please contact:

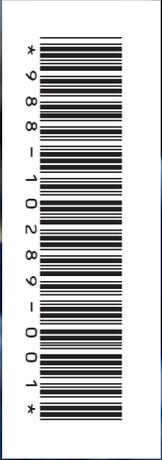
1) Your local marine dealer or consumer electronics store. To locate a Lowrance dealer, visit the web site, www.lowrance.com, and look for the Dealer Locator. To locate an Eagle dealer, visit the web site, www.eaglesonar.com, and look for the Dealer Locator. Or, consult your telephone directory for listings.

2) U.S. customers visit store.navico.com/lowrance.

3) Canadian customers: Lowrance/Eagle Canada, 919 Matheson Blvd. E. Mississauga, Ontario L4W2R7 or fax 905-629-3118.

Call toll free in Canada, 800-661-3983, or dial 905 629-1614 (not toll free), 8 a.m. to 5 p.m. Eastern Standard Time, M-F.

LOWRANCE®



© Copyright 2012
All Rights Reserved
Navico Holding AS