

**LOWRANCE**

**SIMRAD**

# StructureScan 3D

## User Guide

ENGLISH

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# 1

## About StructureScan 3D

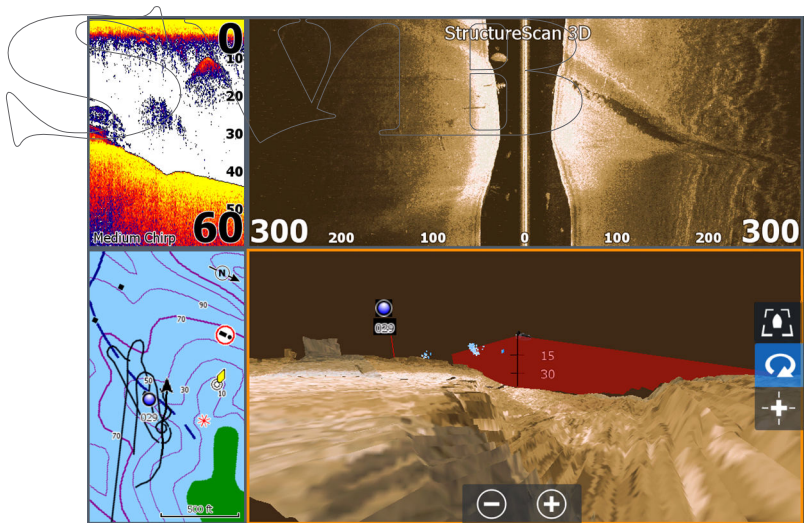
StructureScan 3D is a multi-beam sonar technology that allows anglers to see underwater structure and bottom contours in customizable, three-dimensional views.

The StructureScan 3D module supports both 2D and 3D views:

- 2D Sidescan views and 3D view provide a 182 m (600 ft) wide coverage image to the left and right side of your vessel - 365 m (1200 ft) in total
- 2D Downscan view provides an image directly below your vessel, down to 60 m (200 ft)

You must have a compatible software version on your display to use the StructureScan 3D features. Refer to your display's website for information about which software version that supports the StructureScan 3D.

The StructureScan 3D page is accessed by the StructureScan page icon on the **Home** page. A StructureScan panel can also be part of a multi-panel page as shown in the example.

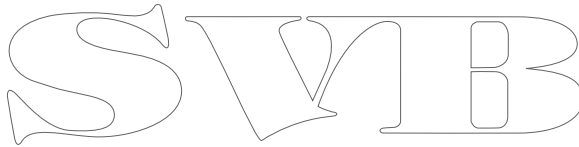


Separate Installation manuals are delivered for the StructureScan 3D module and for the StructureScan 3D transducer. Refer to these documents for installation instructions.

The Operator manual delivered with your MFD (Multi-Function Display: HDS Gen3, NSS/NSO evo2) describes general operation of

the display. Refer to this manual for operational details not covered in this document.

→ **Note:** This document covers several displays and brands. Most of the screen examples are from the NSS evo2. NSS evo2 and NSO evo2 are identical, but HDS Gen3 might differ slightly from the images used in this document. Where there are considerable differences between the displays both HDS Gen3 and NSS evo2 examples are included.

The logo consists of the letters 'S', 'V', 'I', and 'B' in a stylized, outlined font. The 'S' is a large, bold, serif-style letter. The 'V' is a smaller, bold, serif-style letter. The 'I' is a very thin, vertical line. The 'B' is a large, bold, serif-style letter. The letters are arranged horizontally and are connected at the top and bottom by thin lines.

# 2

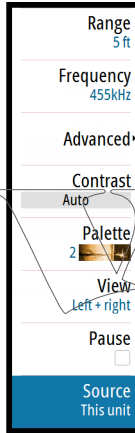
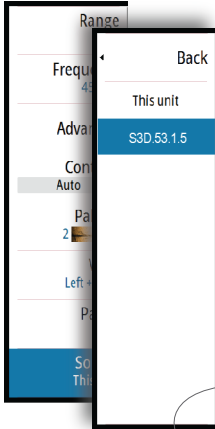
## Basic operation

This section describes functions that are common for all views. For 2D and 3D specific options, refer to *"The 2D image"* on page 11 and to *"The 3D Image"* on page 13.

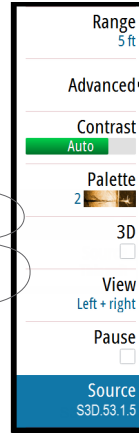
### Selecting the StructureScan source

When a StructureScan 3D module is available on the Ethernet network, the StructureScan 3D source can be selected from the source option in the menu.

When a StructureScan 3D module is selected as source, the StructureScan HD menu is replaced by the StructureScan 3D menu.



StructureScan HD menu



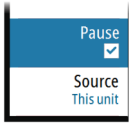
StructureScan 3D menu

This document covers use of the StructureScan 3D features. Refer to your display's Operator manual for information about how to use StructureScan HD.

### Zooming

You zoom a StructureScan image by:

- using the zoom panel buttons
- using the zoom keys (if available)
- turning the rotary knob (if available)



## Stopping/pausing sonar transmitting

Use the **Stop sonar** (HDS Gen3) or **Pause** (NSS/NSO evo2) menu option when you want to turn off the data processing.

In 2D mode this option pauses the image and allows you to examine the image in detail. This function is useful when you need to position a waypoint exactly on the StructureScan image, or if you are using the cursor to measure a distance between 2 points on an image.

## Using the cursor on the StructureScan image

By default, the cursor is not shown on the image.



On a 3D image you need to select the Cursor Enable panel button to use the cursor.

When you position the cursor on an image, the Cursor information window and the History bar are activated.

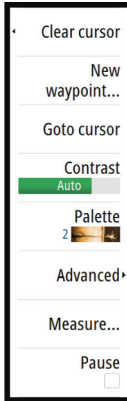
Depth 42.00 ft  
Temp 32,0 °F  
N 30°25.627'  
W 81°14.483'  
519 ft, 277 °M

The Cursor information window shows available data at the cursor position, including the distance and range from the vessel to the cursor position.

The History bar is used to pan back in the stored data. The highlighted part of the History bar shows the image you are currently viewing in relation to the total StructureScan image history stored. Refer to "*Viewing image history*" on page 10.

→ **Note:** For DownScan and for 3D images you can select to turn off the History bar. Refer to "*Advanced menu options*" on page 16.



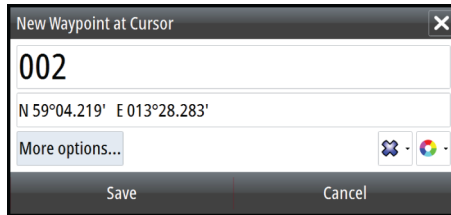


When the cursor is active, the menu will change to include cursor functions.

To remove the cursor and the cursor elements from the panel, press the **X** key or select the **Clear cursor** option.

## Saving waypoints

You can save a waypoint at a selected location by positioning the cursor on the panel, and then selecting the new waypoint option in the menu.



If the cursor is positioned on a 3D image, no depth information is included for the waypoint. The waypoint on a 3D image is drawn with a line beneath it to indicate its point on the sea floor.



## GoTo cursor

You can navigate to a selected position on the image by positioning the cursor on the panel, then using the **Goto Cursor** option in the menu.

## Measuring distance

→ **Note:** This function is only available in 2D view modes.

The cursor can be used to measure the distance between two observations on the image.

It is easier to use the measuring function when the image is paused.

1. Position the cursor on the point from where you want to measure the distance
2. Start the measuring function from the menu
3. Position the cursor on the second measuring point
  - A line is drawn between the measuring points, and the distance is listed in the Cursor Information window
4. Continue selecting new measuring points if required

You can use the menu to re-position the start point and the end point as long as the measuring function is active. When you select **Finish measuring** or press the **X** key, the image resumes to normal scrolling.

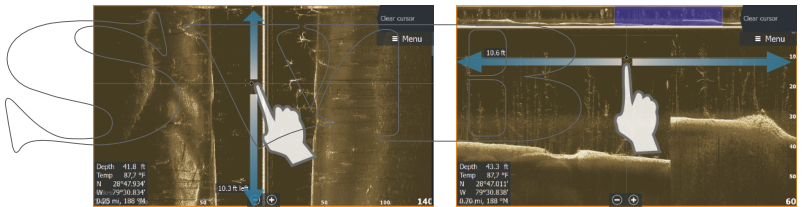
## Viewing image history

The highlighted part of the History bar shows the image you are currently viewing in relation to the total StructureScan image history stored.

The History bar appears by default when the cursor is active. For DownScan and for 3D images you can turn off the History bar, have it always shown at the top of the screen, or have it appear only when the cursor is active. Refer to "*Advanced menu options*" on page 16.

The History bar is on the far right side for SideScan images, or at the top of the screen for DownScan and for 3D images.

You pan the image history by dragging on the image, or by dragging the highlighted region of the history bar.



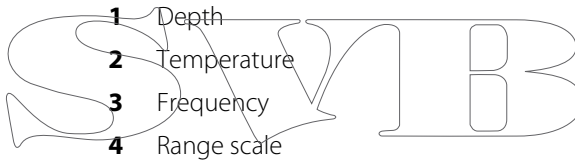
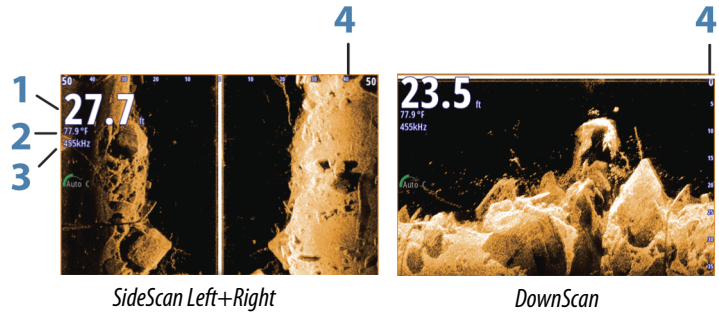
To resume normal StructureScan scrolling, select the **Clear cursor** menu option or press the **X** key.

# 3

## The 2D image

The 2D image is the default view when the StructureScan module is connected to the display.

The 2D view is displayed when the 3D menu option is not selected.



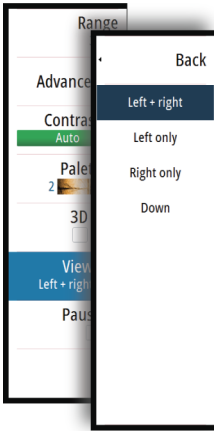
→ **Note:** The 2D image examples are from the NSS evo2. On HDS Gen3 images the range scale is located at the bottom of the image, and temperature and depth overlay can be placed in a user specified location.

## 2D view options

The 2D view can be set up as a DownScan image, or as a SideScan image showing left, right or left+right side scanning.

The DownScan image can be added as an overlay to the traditional Sonar image.

The SideScan image can be added as an overlay on a chart.



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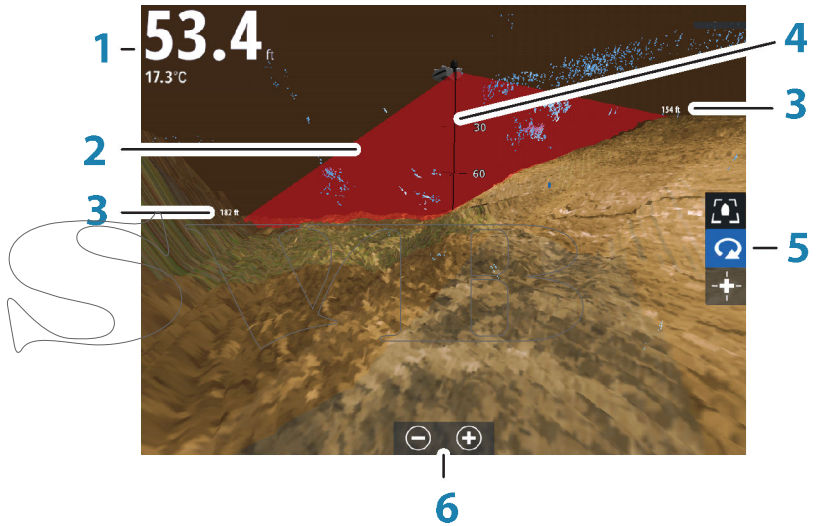
## The 3D Image

The 3D view is displayed when the 3D checkbox is selected.

→ **Note:** When switching from 2D view to 3D view the 2D view option has to be set to Left, Right or Left + Right. If Down is selected, the 3D checkbox is unavailable.



In 3D view, the sea floor image is built up in real-time directly under the vessel as the boat moves. If you are not moving the image will remain stagnant. You can also see other underwater objects and clusters of fish. The 3D view shows both the left and right channels of data.



- 1 Depth and temperature
- 2 Transducer beam
- 3 Range
- 4 Depth indication line
- 5 3D panel buttons
- 6 Zoom panel buttons

→ **Note:** If a page includes more than one StructureScan panel, only one of them can have the 3D view at one time.

On HDS Gen3 temperature and depth overlay can be placed in a user specified location.

## The 3D mode options

There are two modes for the StructureScan 3D panel:

- Vessel Mode
- Cursor Mode

You switch between vessel mode and cursor mode by selecting the 3D panel buttons. You can also return from cursor mode to vessel mode by selecting the **Clear cursor** menu option.

### 3D Vessel Mode



In this mode, the view is locked to the vessel, and the image moves with the vessel.

You can rotate the camera around the vessel, and you can change the camera elevation to look down or look more sideways at the vessel:

- To change the camera rotation, drag horizontally on the screen
- To change the camera elevation and tilt, drag vertically on the screen

### 3D Cursor mode

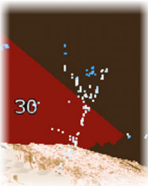


When you activate Cursor mode, the camera position is the same as when Cursor mode was enabled.

In Cursor mode, the image does not move with the vessel. You can zoom the image, and you can rotate the camera in any direction by dragging on the screen.

Cursor mode includes the cursor functions described in *"Using the cursor on the StructureScan image"* on page 8.

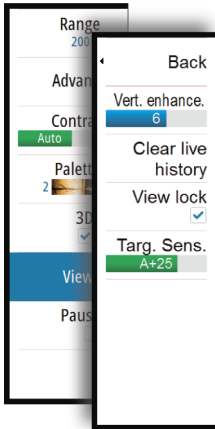
## Fish rendering



When objects are identified in the water column, they are shown as clusters of dots. The point color corresponds to the target intensity, and the point colors are automatically adjusted to complement the chosen StructureScan palette.

## The 3D view options

When in 3D mode, the following view options are available:



### Vertical enhancement

This option stretches the data so that the differences between depths are greater on screen, which help you to see the changes in depth in relatively shallow areas. On HDS Gen3 the options are presented as Off/Low/Medium/High. On NSS/NSO evo2 products, this control includes settings from 0-10.

### Clear live history

When selected, the live history is removed from the 3D image.

### View lock

When enabled, the camera will maintain the set relative rotation from the vessel. For example, if you rotate to face the starboard side of the vessel, the camera will rotate to maintain the starboard view when the vessel rotates.

### Target sensitivity

This setting adjusts how many and what intensity points are included in the water column. Turn it down to see less noise or things you don't want to see, and turn it up to see more information.

The **Auto** option automatically adjusts the settings to the optimal levels. Auto sensitivity can be adjusted (+/-) to your preference while still maintaining the auto sensitivity functionality.

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## Setting up the image

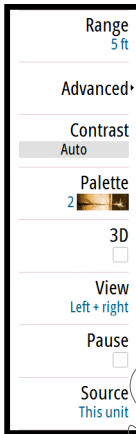
You use the options in the menu for setting up the StructureScan image.

The **Pause** (NSS/NSO evo2) / **Stop sonar** (HDS Gen3) and **Source** menu options are described in "*Basic operation*" on page 7.

### Range

The range setting determines the water depth (2D view - Downscan) or side range distance (2D view - SideScan or 3D view) that is visible on the screen.

You select between a number of pre-defined ranges, or you can select to let the system automatically set the range depending on the water depth.



### Advanced menu options

#### Noise rejection

Signal interference from bilge pumps, engine vibration and air bubbles can clutter the sonar screen. The noise rejection option filters the signal interference and reduces on-screen clutter.

→ **Note:** By default, Noise rejection is set to **On** for optimal signal returns and clarity in most conditions.

#### TVG/Surface clarity

Wave action, boat wakes and temperature inversions can cause on-screen clutter near the surface.

The **TVG** (NSS/NSO evo2) and **Surface clarity** (HDS Gen3) option reduces surface clutter by decreasing the sensitivity of the receiver near the surface.

→ **Note:** For optimal image return and clarity in most conditions, the default value is set to a low value.

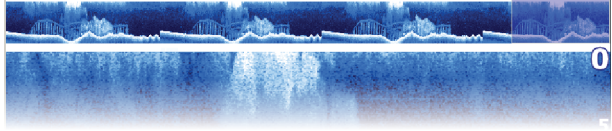
#### Flipping the image left/right

If required, the left/right SideScanning images can be flipped to match the corresponding side of your vessel if the transducer has been mounted backwards. Refer to the transducer installation guides.



## Preview

For DownScan and for 3D images you can turn off the History bar, have it always shown at the top of the screen, or have it appear only when the cursor is active.



By default, the History bar appears when the cursor is active.

## Range Lines

(2D views only)

Range lines can be added to the image to make it easier to estimate depth and distance to structures and targets.

## Logging StructureScan data

You can record StructureScan data and save the file internally in the display unit or onto a memory card inserted in the card reader. For more information about recording and viewing recorded StructureScan data, refer to the display operator manual.

## Contrast

The contrast determines the brightness ratio between light and dark areas of the screen. This makes it easier to distinguish objects from the background.

To adjust the contrast setting:

1. Activate the contrast option in the menu or select the contrast icon (NSS evo2 and NSO evo2 touch options) in the panel to display the contrast adjustment bar.
2. Drag the bar, use the arrow keys or use the rotary knob (if available) to get the desired contrast setting.

## Auto contrast

This option sets the contrast value automatically based on the current conditions. Auto contrast can be adjusted (+/-) to your preference while still maintaining the auto contrast functionality.

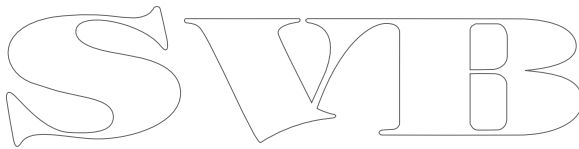
## Palettes

You can select between several display palettes optimized for a variety of conditions.

## View

You use the **View** options to select how to present the StructureScan image on the display.

The **View** options are different for 2D and 3D views. These options are described in "*The 2D image*" on page 11 and in the "*The 3D Image*" on page 13.



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