



Simrad SN90

Purse Seine and Trawling Sonar

Software Release Note

Release 22.1

This document describes the changes introduced with the new software version.

- **Product:** SN90
- **Software version:** 22.1
- **Upgrade from version:** 21.13

This software controls all functionality in the SN90 system. This includes transmission and reception, interfaces with external peripherals and sensors, and all user interface.

A firmware update for the Transceiver Unit is not included with this release.

Additional end-user documents related to the SN90 system can be found on our website. This includes publications that are translated to other languages. Selected publications are also provided on IETM (*Interactive Electronic Technical Manual*) formats.

- <https://www.kongsberg.com/sn90>

SIMRAD
By KONGSBERG

Document information

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- **Document:** Software Release Note
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Warning

The equipment to which this manual applies must only be used for the purpose for which it was designed. Improper use or maintenance may cause damage to the equipment and/or injury to personnel. You must be familiar with the contents of the appropriate manuals before attempting to operate or work on the equipment.

Kongsberg Maritime disclaims any responsibility for damage or injury caused by improper installation, use or maintenance of the equipment.

Disclaimer

Kongsberg Maritime AS endeavours to ensure that all information in this document is correct and fairly stated, but does not accept liability for any errors or omissions.

Support information

If you require maintenance or repair, contact your local dealer. You can also contact us using the following address: km.support.science@km.kongsberg.com. If you need information about our other products, visit <https://www.kongsberg.com/simrad>. On this website you will also find a list of our dealers and distributors.

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Software changes

This software update solves a number of software bugs that have been reported by our users, or detected during our own product testing. New functionality is also introduced.

Note

If you upgrade from version 3.1.8 or earlier make sure to read the release note for software version 21.13.21.

The following specific changes have been made.

Performance stability improvements

Some users with software version 21.13.21 installed reported that the sonar would stop for short periods giving a ping timeout message. This issue is now fixed.

Roll and pitch improvements

The roll and pitch offset functionality has been improved. The offset values now follow the rotation of the motion sensor (if it has rotation).

Improved presentation of water current

The presentation of the water current layers are updated to show speed with decimals.

New tracked target may not be priority target

Normally, a new tracked target will be given priority status and take control of the tilt and bearing settings. You can now prevent this so that a new tracked target does not automatically become a priority marker. Use a new setting in the **User Setting Setup** page in the **Installation** dialog box.

[User Settings Setup page](#) , page 14

Units for position formats

On the **Units** page you can now choose different units for the geographical position format. The same units are then also available in the **New Marker** dialog box.

[Units page](#), page 15

[New Marker dialog box](#), page 17

Linked inspection beams

The space between the linked inspection beams has been improved.

Additional functionality added to Operating Panels Mk2 and M3

In the **Operating Panel** page for Mk2 and M3 you can now choose to use one of the buttons to delete the oldest marker.

[Operating Panel Mk2, page 19](#)

[Operating Panel Mk3, page 22](#)

Temperature readout on top bar

If you have a suitable sensor connected to your system, the sea temperature can be shown on the top bar.

[General page, page 25](#)

Do I need to upgrade?

This software update introduces new functionality. It also addresses software bugs that have been reported by our users, or detected during our own product testing.

We recommend that all users update their software.

Software licenses

The Simrad SN90 is not a licensed product.

The SN90 system does not need any software licenses to operate. However, specific software license codes "unlocks" additional functionality.

The software license is a 32 character hexadecimal string based on the hardware identifier (**Hardware ID**). This unique identifier is generated using information from key components in the Processor Unit. The software license is linked to the physical Processor Unit. You cannot move the SN90 system software from one Processor Unit to another unless you also request and install a new license.

In order to obtain a software license you must contact one of our dealers or distributors. You can also use the request form on our website, or contact our support department directly.

Software installation

When a new software version is released for the SN90 system it must be installed on your Processor Unit. Contact your local dealer, or a Simrad distributor, to have the new software version installed.

Note

You must remove the old version of the software before you install the new version.

A dedicated wizard is used to install the software. Installation of additional operating system components may be required. These are installed automatically. Observe the information offered in the wizard.

Registered dealers and distributors can download the new software version from the "Simrad Dealer Club". To access the "Simrad Dealer Club", visit our website.

- www.kongsberg.com/sdc

Topics

[Removing the operating software, page 9](#)

[Installing a new version of the operating software, page 11](#)

[Settings you need to restore after a software upgrade, page 12](#)

Removing the operating software

Before you can install the new software version, you must remove the old version.

Prerequisites

The following items may be useful:

- Computer mouse
- Computer keyboard

Neither tools nor instruments are required. This procedure is made for the Microsoft® Windows® 10 operating system. It is assumed that you are familiar with this operating system.


Context

Removal of the software is done using functionality provided by the operating system.

Procedure

- 1 Turn on the Processor Unit.
- 2 Select **Power off** to turn off the system.
- 3 In the **Power Off** dialog box, select **Exit to Operating System** to close the SN90 program.
- 4 If applicable: Connect the keyboard and the mouse to USB sockets on the front panel of the Processor Unit.
- 5 Uninstall the application.
 - a If applicable: Open the on-screen keyboard.
 - b In the bottom left corner of your desktop, select the looking glass to start a search.
 - c Type `Control Panel` to locate the application, then open it.



- d Select **Programs and Features**.
- 
- The icon for 'Programs and Features' in Windows, showing a small camera icon and the text 'Programs and Features' in green.
- e On the list provided, locate the software you shall uninstall.
 - f Select it, then select **Uninstall**.
 - g Observe the **Remove existing settings** dialog box.
 - h Do not select any check boxes!
 - i Select **Uninstall** in the dialog box to remove the software.
 - j Follow the instructions provided by the wizard.
 - 6 Click the [X] in the top right corner to close the Control Panel.
 - 7 If applicable: Disconnect the keyboard and the mouse from the Processor Unit.

Installing a new version of the operating software

A dedicated wizard is used to install the software. The operating software for the SN90 system must be downloaded on a separate computer.

Prerequisites

The following specific items are required for this task:

- Personal computer
- USB flash drive
- Computer mouse (Optional)
- Computer keyboard (Optional)

Neither tools nor instruments are required. This procedure is made for the Microsoft® Windows® 10 operating system. It is assumed that you are familiar with this operating system.

Procedure

- 1 On the personal computer:
 - a Download the new software version.
 - b Unpack the ZIP file to access the executable application file.
 - c Copy the application file to a USB flash drive.
- 2 Turn on the Processor Unit.
- 3 Make the following preparations.
 - a If applicable: Connect the keyboard and the mouse to USB sockets on the front panel of the Processor Unit.
 - b Insert the USB flash drive.
- 4 Install the new version of the application.
 - a From the Windows® **Start** button, right-click to open File Explorer.
 - b Locate the executable setup file (.exe).
 - c Copy the file to a temporary folder on the "D" drive.
 - d Double-click the setup executable file to start the installation.
 - e Select the check box to accept the license terms and conditions.
 - f Select **Install**.
 - g Follow the instructions provided by the wizard.

We recommend that you install the software in the default folder suggested by the wizard.

- h Close File Explorer.
 - i Remove the USB flash drive.
- 5 On the Processor Unit desktop, double-click the SN90 icon to start the program.
 - 6 If applicable: Disconnect the keyboard and the mouse from the Processor Unit.

Settings you need to restore after a software upgrade

Due to the multiple software changes made to the SN90 system, certain settings must be restored after the software upgrade.

Note

You only need to restore these settings if you are upgrading from software version 3.1.8.

Colour scales

In the **Colour Setup** dialog box, all existing user settings will for **Echo Colours** will revert to *Normsl*. If you have user settings with other settings you need to load these user settings, change **Echo Colours** from *Normal* to your own preference. To keep the same name for the user setting, just delete it first and save with old name.

Mode Selection on Operating Panel page

The default value for this setting is now to change presentation modes. If you still wish to use the buttons to select user settings you must activate this by deselecting . The old user settings will still be there.

Configuration of Operating Panel Mk1

The Mk1 Operating Panel uses serial line COM1 to communicate with the Processor Unit. This setting must be reconfigured after the software upgrade.

End-user documentation

The end user documentation and online help for the SN90 system is not updated with the latest software release.

The SN90 *Reference Manual* is included with the SN90 software as context sensitive on-line help.

Additional end-user documents related to the SN90 system can be found on our website. This includes publications that are translated to other languages. Selected publications are also provided on IETM (*Interactive Electronic Technical Manual*) formats.

- <https://www.kongsberg.com/sn90>

Updated functions and dialog boxes

This new software version has resulted in changes to some of the functions and dialog boxes in the SN90 user interface.

Topics

[User Settings Setup page , page 14](#)

[Units page, page 15](#)

[New Marker dialog box, page 17](#)

[Operating Panel page, page 17](#)

[Display Options dialog box, page 25](#)

User Settings Setup page

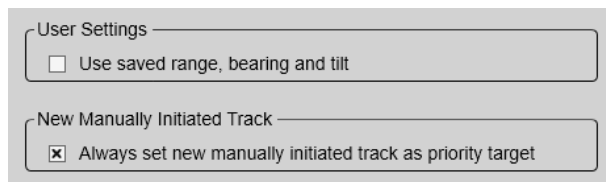
The **User Settings Setup** page is established to offer generic settings that do not naturally belong elsewhere.

Prerequisites

The **Installation** dialog box is not available when your SN90 system is set to *Replay* mode.

How to open

This page is located in the **Installation** dialog box. To open the page, select **Installation** on the **Setup** menu.



Description

User Settings

The **User Settings** dialog box allows you to save the current user settings (your current selection of operational parameters), and to retrieve factory or previously

saved user settings. These settings can be related to different operations, environmental conditions or basic personal preferences. By default, information about the current range, bearing and tilt will not be saved. On the **User Settings Setup** page, tick the box to include range, bearing and tilt information the next time you save the user settings.

New Manually Initiated Track

During normal operation, some echoes are clearly more interesting than others. In many situations specific echoes may be regarded as *targets*. To set up the SN90 system to provide such information, you can start *target tracking*.

The **Initiate Track** function allows you to manually start target tracking.

Place the cursor over the echo you wish to track. Select **Initiate Track**. The tracked target is regarded as an *object*, and it is identified with a circle and two lines. The bearing line is automatically locked on the object to reflect its bearing.

By default, a new manually initiated tracked object is automatically given priority status. If another object has this priority, the status is transferred to the new object. The priority is identified with a "P".

On the **User Settings Setup** page, *de-select* **New Manually Initiated Track** if you do not want new tracked targets to become priority targets.

Related functionality

User Settings dialog box

The **User Settings** dialog box allows you to save the current user settings (your current selection of operational parameters), and to retrieve factory or previously saved user settings. This dialog box is opened from the **Main** menu.

Units page

The user interface presents many measurements. These measurements are for example related to depth, range and distance. From the **Units** page you control which units of measurements that are used.

Prerequisites

The **Installation** dialog box is not available when your SN90 system is set to *Replay* mode.

How to open

This page is located in the **Installation** dialog box. To open the page, select **Installation** on the **Setup** menu.



Description

The SN90 system is prepared to work with several international standards for units of measurements.

Use the **Units** options to select the units of measurements you want to work with. The SN90 system uses them in all presentations. You only need to define them once. Use the drop-down lists provided to make the selections.

Note

*When you work in the **Installation** dialog box, you must always select **Apply** to save the changes made on a page. You must do this before you continue working on a different page.*

Details

Length

Choose the unit of measurement for all the readouts related to range and distances in the SN90 system user interface. This may for example be the cursor location.

Depth

Choose the unit of measurement for all the presentations of depth. This may for example be the current water depth.

Distance

Choose the unit of measurement for all presentations of sailed distance.

Position

Choose the unit of measurement for geographical positions.

Speed

Choose the unit of measurement for all the presentations of vessel speed.

Temperature

Choose the unit of measurement for all the temperature readings. This may for example be the current water temperature, but only if you have a suitable sensor connected to the SN90 system.

Fish Length

Choose the unit of measurement for all presentations of fish length.

| Unit Type | Selected Unit |
|-------------|----------------------|
| Length | <input type="text"/> |
| Depth | <input type="text"/> |
| Distance | <input type="text"/> |
| Position | <input type="text"/> |
| Speed | <input type="text"/> |
| Temperature | <input type="text"/> |
| Fish Length | <input type="text"/> |

New Marker dialog box

The **New Marker** dialog box allows you to create a new marker based on the known depth and geographical position of a new target.

How to open

The **New Marker** dialog box is opened from the **New** button in the **Objects** menu.

Description

Use this functionality if you need to create a marker based on geographical information from an external source. You can place markers on for example wrecks, obstacles on the seabed or coral reefs. For each new marker you must provide:

- Longitude
- Latitude
- Depth
- Position Input Format

The screenshot shows a dialog box titled "New Marker". It has a title bar with a question mark and a close button. The main area contains three rows of input fields: "Latitude:" with a spinner set to "0", a degree symbol, a spinner set to "0.000", a minute symbol, and a dropdown menu set to "N"; "Longitude:" with a spinner set to "0", a degree symbol, a spinner set to "0.000", a minute symbol, and a dropdown menu set to "E"; and "Depth:" with a spinner set to "0" and a unit "m". Below these is a section titled "Position Input Format" with three radio buttons: "Degrees and decimals", "Degrees, minutes and decimals" (which is selected), and "Degrees, minutes and seconds". At the bottom right are "OK" and "Cancel" buttons.

When the new marker is created, it is automatically assigned a unique identifier (UID) by the SN90 system.

Operating Panel page

The Operating Panel offers all necessary control functions for normal operation. It further allows you to assign certain functions to dedicated buttons and switches. The **Operating Panel** page is used to select which physical hardware panel you use, and to assign functionality to the programmable buttons.

Prerequisites

The **Installation** dialog box is not available when your SN90 system is set to *Replay* mode.

How to open

This page is located in the **Installation** dialog box. To open the page, select **Installation** on the **Setup** menu.



Description

The controls provided by the Operating Panel are arranged in logical functional groups. This offers you clear and easy operation with fast access to key functionality. All the

functionality provided by the SN90 system can be accessed using the trackball on the Operating Panel and the menu system shown in the display presentation.

The SN90 system supports three different operating panels. These are referred to as "Mk1", "Mk2" and "Mk3".

- The Mk1 Operating Panel is connected to the Processor Unit with three cables. The dual interface cable provides power and serial communication. The USB interface cable is used to read the trackball movements. The Processor Unit must be fitted with a custom made interface board. A small commercial power supply is used to provide power to the Operating Panel. (The Mk1 Operating Panel is no longer provided with new sonars. This information is provided for legacy reasons.)
- The Mk2 Operating Panel is connected to the Processor Unit using an Ethernet cable. The Operating Panel is provided with a built-in power supply.
- The Mk3 Operating Panel is connected to the Processor Unit with a USB cable. A dedicated power supply unit is not required.

Select which operating panel to use. Assign functionality as permitted by each type of operating panel.

Topics

[Operating Panel Mk2, page 19](#)

[Operating Panel Mk3, page 22](#)

Operating Panel Mk2

The Mk2 Operating Panel is connected to the Processor Unit using an Ethernet cable. The Operating Panel is provided with a built-in power supply.

Details

User Setting Buttons

On the Mk2 Operating Panel, the four buttons dedicated for user settings or presentation modes are located the top of the panel. Select **Mode Selection** to specify what you want to use the buttons for. Assign one predefined user setting *or* presentation mode to each button on the Operating Panel.



Tip

*Before you can assign custom user settings to the operating panel, a selection of settings must be available from the **User Settings** dialog box. The **User Settings** dialog box is located on the **Main** menu.*

*Any user setting selected on the Operating Panel is identified in the upper left corner of the Horizontal view. The identifying number refers to the **User Setting** number on the **Operating Panel** page. Click on the text to make it larger. Click one more time to restore the original font size.*

Rotary Switch Functions

The Mk2 Operating Panel is fitted with three rotary switches. The switches are identified with numbers. Each switch can be assigned a function related to range, gain, bearing or tilt.

Under **Rotary Switch Options**, assign one function to each rotary switch on the Operating Panel. The following functions can be assigned:

Horizontal Range

This is the range setting in the *Horizontal* view.

Vertical Range

This is the range setting in the *Vertical* view.

Inspection Range

This is the range setting in the *Inspection* view.

Plane Range

This is the range setting in the *Plane* view.

Active Ping Range

This is the range setting in the currently active view.

Active Ping Gain

This is the gain setting in the currently active view

Active Ping Bearing

This is the bearing setting in the currently active view.

Active Ping Tilt

This is the tilt setting in the currently active view

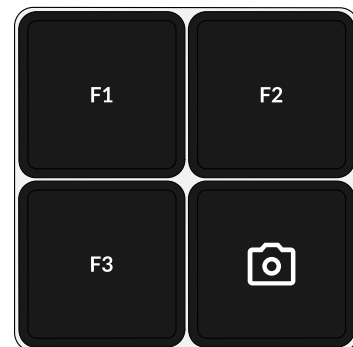
Button Options

The Mk2 Operating Panel is fitted with three function buttons. The buttons are identified as **F1**, **F2** and **F3**. Each button can be assigned a dedicated function. The three function buttons are grouped with the **Screen Capture** button.

Under **Button Options**, assign one function to each **Fx** button on the Operating Panel. The following functions can be assigned:

Auto Tilt

This is an "on/off" function. When *Auto Tilt* mode is activated the beam will automatically change its tilt angle for each transmission ("ping"). The centre of the tilt sector is defined by the chosen tilt angle just before the *Auto Tilt* mode is started. The chosen tilt sector is shown on the tilt indicator in the *Horizontal* view using a shaded background. The sector and step settings are made using the **Tilt** function on the **Main** menu.



Off Centre

This is the same function as **Set New Ship Centre** on the shortcut menu. Place the cursor anywhere in the view and press the button. The function moves the vessel symbol to the selected position.

Zoom

Place the cursor anywhere in the view, right-click and select **Zoom**. Only one zoom level is provided. Select **Zoom** one more time to restore the original view.

Menu Off

This is an "on/off" function. Unless you need to make frequent changes to the operating parameters, you may want to hide the menu from the display presentation. This gives you more space for echo information.

Own Ship

This is the same function as **Place Own Ship Marker** on the shortcut menu. Select this function to add a square symbol to the vessel's current position in the echo presentation. The own ship marker is now regarded as an *object*. All information about the object is shown in the **Objects** menu listed as "OSM". Use **Delete Own Ship Marker** on the shortcut menu to delete the marker from the current view.

Auto Bearing

This is an "on/off" function. Set this function to *On* to start the automatic search function. In the *Auto Bearing* mode the SN90 system will automatically search within defined sector limits. The sector is identified in the view using two angular symbols. The sector and step settings are made using the **Bearing** function on the **Main** menu.

Screen Recording

This is an "on/off" function. The **Screen Recording** function allows you to record and save the echo presentation as a video file. Each screen recording you make is saved in .mp4 format on the Processor Unit hard disk. The file name reflects the current date and time.

Select **Screen Recording** to start and stop the recording from the Operating Panel.

Use the **Screen Recording** page to define where the video files are saved. This page is located in the **Output** dialog box.

Delete Oldest Marker

The SN90 offers several different marker types. You can add as many markers as you like. The most common markers can be added using dedicated buttons on the Operating Panel. Other markers are added using the shortcut menu in each view. Each marker is identified with its geographical location.

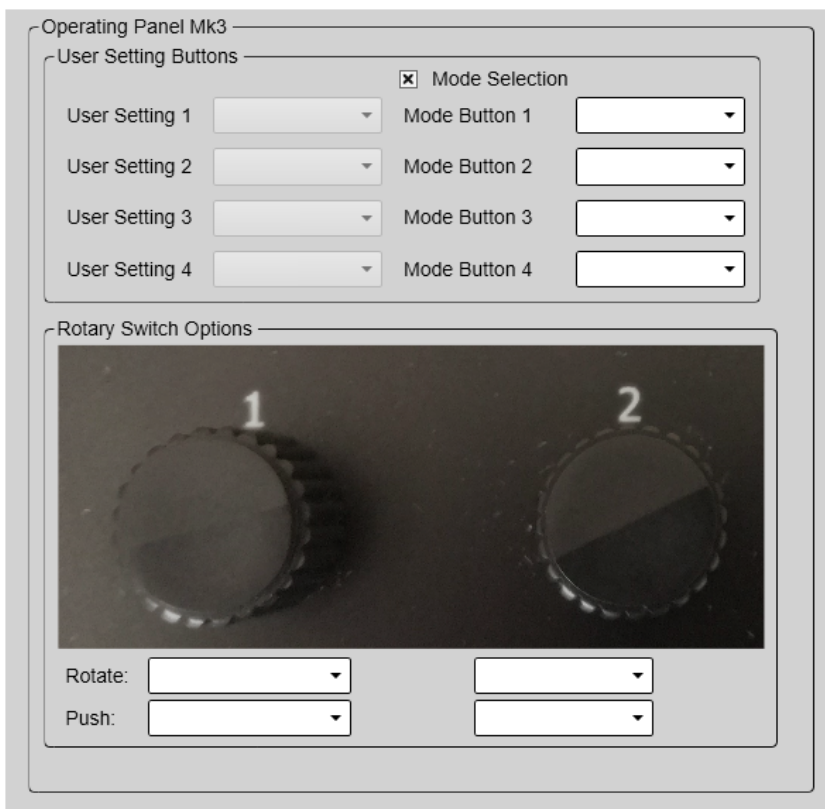
Select **Delete Oldest Marker** to use the Operating Panel to remove the oldest marker from the sonar view.

Joystick Options

Use these settings to set up the joystick operation.

Operating Panel Mk3

The Mk3 Operating Panel is connected to the Processor Unit with a USB cable. A dedicated power supply unit is not required.



Details

User Settings / Presentation modes

On the Mk3 Operating Panel, the requested user setting or presentation mode is chosen with a single button. Press the button repeatedly to cycle through the settings or modes. Select **Mode Selection** to specify what you want to use the button for.



Tip

Before you can assign custom user settings to the operating panel, a selection of settings must be available from the **User Settings** dialog box. The **User Settings** dialog box is located on the **Main** menu.

Any user setting selected on the Operating Panel is identified in the upper left corner of the Horizontal view. The identifying number refers to the **User Setting** number on the **Operating Panel** page. Click on the text to make it larger. Click one more time to restore the original font size.

Rotary Switch Functions

The Mk2 Operating Panel is fitted with three rotary switches. The Mk3 Operating Panel is fitted with two rotary switches. The switches are identified with numbers. Each switch can be assigned a function related to range, gain, bearing or tilt.

Under **Rotary Switch Options**, assign one function to each rotary switch on the Operating Panel. The following functions can be assigned:

Horizontal Range

This is the range setting in the *Horizontal* view.

Vertical Range

This is the range setting in the *Vertical* view.

Inspection Range

This is the range setting in the *Inspection* view.

Plane Range

This is the range setting in the *Plane* view.

Active Ping Range

This is the range setting in the currently active view.

Active Ping Gain

This is the gain setting in the currently active view

Active Ping Bearing

This is the bearing setting in the currently active view.

Active Ping Tilt

This is the tilt setting in the currently active view

For the Mk3 Operating Panel, assign one function to each rotary switch when you *press* it.

None

No specific functionality is assigned.

Auto Tilt

This is an "on/off" function. When *Auto Tilt* mode is activated the beam will automatically change its tilt angle for each transmission ("ping"). The centre of the tilt sector is defined by the chosen tilt angle just before the *Auto Tilt* mode is started. The chosen tilt sector is shown on the tilt indicator in the *Horizontal* view using a shaded background. The sector and step settings are made using the **Tilt** function on the **Main** menu.

Zoom

Place the cursor anywhere in the view, right-click and select **Zoom**. Only one zoom level is provided. Select **Zoom** one more time to restore the original view.

Menu Off

This is an "on/off" function. Unless you need to make frequent changes to the operating parameters, you may want to hide the menu from the display presentation. This gives you more space for echo information.

Own Ship

This is the same function as **Place Own Ship Marker** on the shortcut menu. Select this function to add a square symbol to the vessel's current position in the echo presentation. The own ship marker is now regarded as an *object*. All information about the object is shown in the **Objects** menu listed as "OSM". Use **Delete Own Ship Marker** on the shortcut menu to delete the marker from the current view.

Auto Bearing

This is an "on/off" function. Set this function to *On* to start the automatic search function. In the *Auto Bearing* mode the SN90 system will automatically search within defined sector limits. The sector is identified in the view using two angular symbols. The sector and step settings are made using the **Bearing** function on the **Main** menu.

Screen Recording

This is an "on/off" function. The **Screen Recording** function allows you to record and save the echo presentation as a video file. Each screen recording you make is saved in .mp4 format on the Processor Unit hard disk. The file name reflects the current date and time.

Select **Screen Recording** to start and stop the recording from the Operating Panel.

Use the **Screen Recording** page to define where the video files are saved. This page is located in the **Output** dialog box.

Delete Oldest Marker

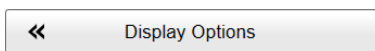
The SN90 offers several different marker types. You can add as many markers as you like. The most common markers can be added using dedicated

buttons on the Operating Panel. Other markers are added using the shortcut menu in each view. Each marker is identified with its geographical location.

Select **Delete Oldest Marker** to use the Operating Panel to remove the oldest marker from the sonar view.

Display Options dialog box

The **Display Options** dialog box is used to specify basic settings for the sonar presentation. The pages in the dialog box are described in a separate structure.



How to open

This dialog box is opened from the **Display** menu.

Description

This dialog box contains a number of pages selected from the menu on the left side. The choices you make in the **Display Options** dialog box have no effect on the overall performance of the SN90 system.

Note

The information shown on the top bar must not be used for vessel navigation.

Topics

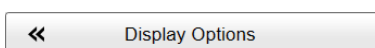
[General page, page 25](#)

General page

The **General** page in the **Display Options** dialog box controls the location of the menu. You can select which navigational information to be shown on the top bar. You can also choose to see Coordinated Universal Time (UTC) at the bottom of the presentation.

How to open

This page is located in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.

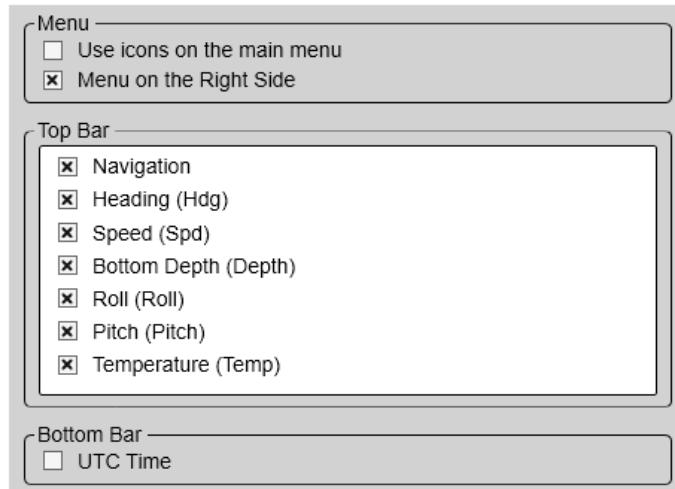


Description

The **General** page offers a range of "on/off switches". You use them to enable or disable the relevant functions.

Note

The information shown on the top bar must not be used for vessel navigation.



Menu

- Use icons on the main menu
- Menu on the Right Side

Top Bar

- Navigation
- Heading (Hdg)
- Speed (Spd)
- Bottom Depth (Depth)
- Roll (Roll)
- Pitch (Pitch)
- Temperature (Temp)

Bottom Bar

- UTC Time

Details

Use icons on the main menu

Select this function to use icons instead of text on the **Main** menu.

Menu on the Right Side

Select this option to place the menu system on the right side of the display presentation. This is the default setting. By deselecting this function, the entire menu system is placed permanently on the left side of the display presentation.

Top Bar

The top bar is located at the top of the display presentation and stretches from the far left to the far right. By means of these check boxes, you can select which elements to be shown at the top of the presentation.

For each option, the text in brackets is the identification used on the top bar.

Navigation

Select this check box to see the vessel's current geographical position on the top bar. The position information must be provided by an external navigation system connected to the SN90 system.

Heading

Select this check box to see the vessel's current heading on the top bar. The heading information must be provided by an external positioning system, or by a heading sensor or gyro compass connected to the SN90 system.

Speed

Select this check box to see the vessel's current speed on the top bar. The information must be provided by an external speed log or a navigation system connected to the SN90 system.

Bottom Depth

Select this check box to see the current water depth on the top bar. The information must be provided by an external depth sensor (echo sounder) connected to the SN90 system.

Roll

Select this check box to see the vessel's current roll movements on the top bar. The information must be provided by an external motion sensor (motion reference unit) connected to the SN90 system.

Pitch

Select this check box to see the vessel's current pitch movements on the top bar. The information must be provided by an external motion sensor (motion reference unit) connected to the SN90 system.

Temperature

Select this check box to see the current temperature on the top bar. The information must be provided by an external temperature sensor connected to the SN90 system.

Bottom Bar

UTC Time: Check the box to use Coordinated Universal Time (UTC). The time is shown on the bottom bar at the bottom of the display presentation. When disabled, the SN90 system uses local time.

Note

To enable UTC time, your SN90 system must be set up to accept the NMEA ZDA datagram. The NMEA ZDA datagram contains the universal time code (UTC), day, month, year and local time zone.

Coordinated Universal Time (French: Temps Universel Coordonné, UTC) is the primary time standard by which the world regulates clocks and time. It is one of several closely related successors to Greenwich Mean Time (GMT). For most purposes, UTC is used interchangeably with GMT, but GMT is no longer precisely defined by the scientific community. [...]

The current version of UTC is defined by International Telecommunications Union Recommendation (ITU-R TF.460-6), Standard-frequency and time-signal emissions and is based on International Atomic Time (TAI) with leap seconds added at irregular intervals to compensate for the slowing of Earth's rotation. Leap seconds keep UTC within 0.9 seconds of universal time, UT1.

Wikipedia, Copied June 2014

Related functionality

Top bar

The top bar is located at the top of the display presentation and stretches from the far left to the far right. The top bar gives you fast access to key functionality and navigational information. It provides buttons for hiding and showing the menu, making screen captures, opening the **Messages** dialog box, and opening context-sensitive help.

Menu

Unless you need to make frequent changes to the operating parameters, you may want to hide the menu from the display presentation. This gives you more space for echo information. To hide the menu, select **Menu** on the top bar. To retrieve the menu, select **Menu** one more time. When the menu is hidden, it is temporarily shown on the left or right side of the display presentation if you move the cursor to that position.

Navigational information

The navigational information is located in the middle of the top bar. These fields are separate read-outs. They present information related to the navigation of the vessel and operation of the SN90 system. The information shown on the top bar must not be used for vessel navigation.

Bottom bar

The bottom bar is located at the bottom of the display presentation and stretches from the left side to the right side. The tabs on the bottom bar allow you to choose presentation mode. The bottom bar is available all the time.

Minimum display requirements

Unless specifically ordered, the SN90 system is not provided with a display. The display must then be purchased locally.

You can use more than one display on your Processor Unit depending on personal and/or operational preferences.

Note

Make sure that the chosen display meets the requirements for the SN90 system. The design and construction must allow for marine use, and the display must be able to withstand the movements and vibrations normally experienced on a vessel. Verify that you have easy access to cables and connectors, and that the display can be installed in a safe and secure way.

The minimum technical requirements for the display are:

Resolution

Minimum requirement: 1280 x 1024 pixels

The visual quality of the presentation depends on the quality of your graphic adapter and display. We recommend that you use a large display with resolution 1920 x 1080 or 1920 x 1200.

Video interface

The video interface must match the output format(s) provided by the Processor Unit. The Processor Unit may offer video output on several formats. Investigate your options before you purchase a display.

Physical screen size

The screen size depends on personal and/or operational preferences. We recommend that you use 24 inch or bigger diagonal screen size. The SN90 software supports 16:9 and 16:10 displays.

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