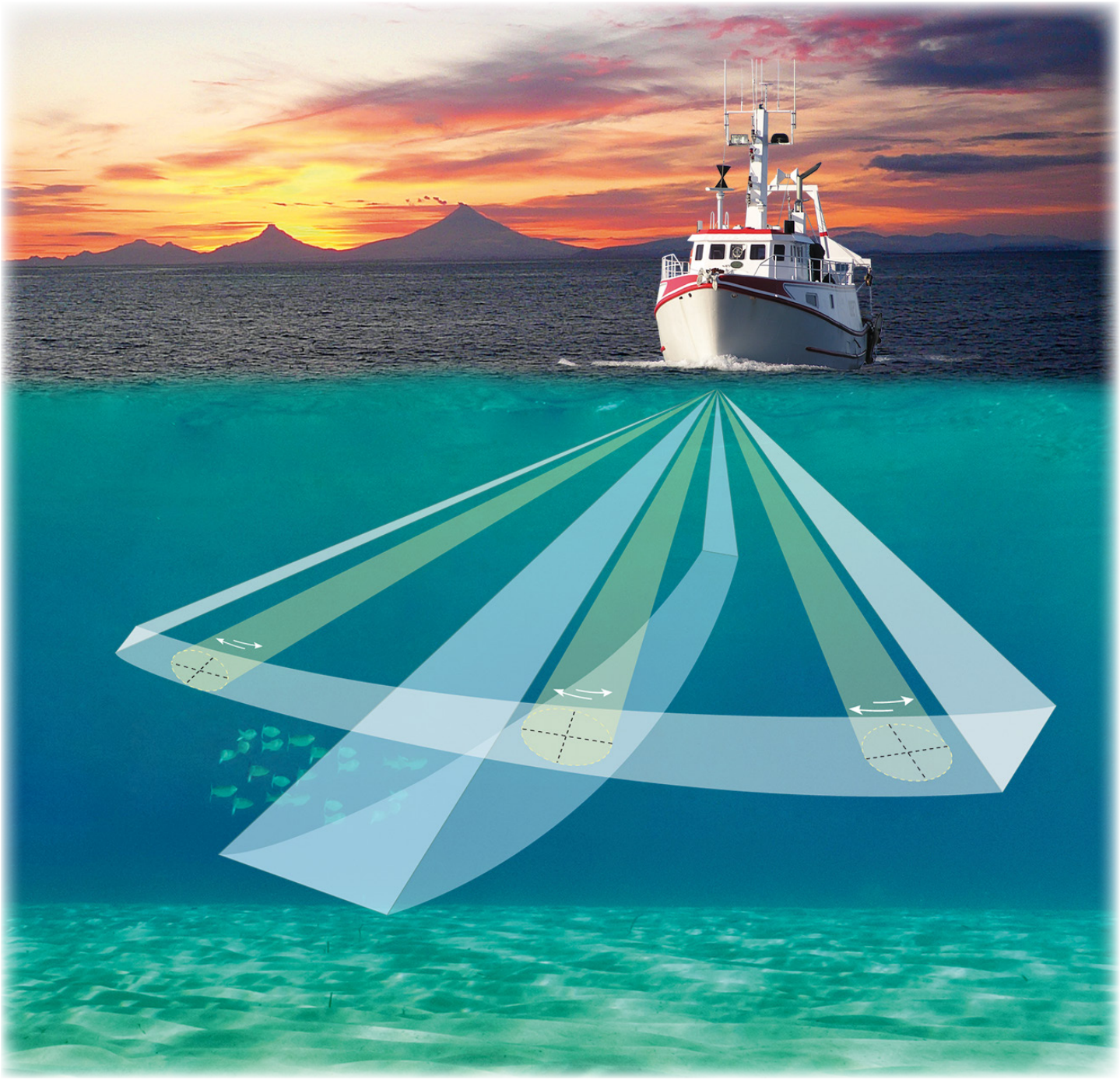
Quick start guide

Simrad SN90

Purse Seine and Trawl sonar



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TECHNOLOGY FOR SUSTAINABLE FISHERIES

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Simrad SN90
Purse Seine and Trawl Sonar
Quick start guide

This manual provides you with the basic information required to get you started with the Simrad SN90 Purse Seine and Trawl Sonar.

For a more detailed description of the operation and the functionality, including all menu and parameter details, see the SN90 *Reference manual* or the on-line help.

Caution

You must never power up the SN90 when the ship is in dry dock. The transducer will be damaged if it transmits in open air. To prevent inadvertent use of the SN90, pull out the mains plug on the Processor Unit whenever your vessel is in dry dock.

381297/A

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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. The user 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: simrad.support@simrad.com. If you need information about our other products, visit http://www.simrad.com. On this website you will also find a list of our dealers and distributors.

Kongsberg Maritime AS
www.kongsberg.com

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About this manual

Purpose

The purpose of this quick start guide is to provide an introduction to safe and efficient use of the Simrad SN90.

Target audience

This manual is intended for all inexperienced and new users of the SN90.

We assume that you are familiar with the basic acoustic principles of sound in water, and that you have some experience with sonar operation.

On-line information

All end user manuals provided for operation and installation of your Simrad SN90 can be downloaded from our website.

- http://www.simrad.com/sn90

Our website will also give you information about other Simrad products.

License information

The SN90 is not a licensed product.

Software version

This SN90 Quick start guide complies to software version xxx.

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Simrad SN90

Topics

Important

As with all other advanced instruments, there are a few important things that you must be aware of.

When the SN90 is not used

When you do not use the SN90, switch it off using the **Power** button on the Operating Panel.

When you are docking your vessel

If the transducer is activated when out of water it may be damaged beyond repair. It is therefore very important that the SN90 system remains switched off when the vessel is in dry dock, and that no one tries to use it.

To ensure that this can not happen, disconnect the power supply cable to the either the Processor Unit or to the Transceiver Unit - or both! You may also remove the circuit breakers on the AC mains supply to the SN90 Transceiver Unit. Do this before the vessel is placed in the dry dock!

If something breaks down

If you believe that something has broken down, contact your local dealer. He will be able to assist. A list of all our dealers is provided on our website.

- http://www.simrad.com

If you are unable to contact a dealer, observe the support information in this manual.

When you wish to switch off the SN90

You must NEVER switch off the SN90 by means of the on/off switch on the Processor Unit. You must ALWAYS use the Operating Panel or the **Exit** button on the top bar.

Note

If you power down the SN90 by means of the power switch on the Processor Unit you may damage the software program and the interface parameters used to communicate with external devices.

The SN90 transceiver will not power down.

Transducer handling

A transducer must always be handled as a delicate item. Wrongful actions may damage the transducer beyond repair.

Observe these rules:

- **Do not** activate the transducer when it is out of the water.
- **Do not** handle the transducer roughly, avoid impacts.

- **Do not** expose the transducer to direct sunlight or excessive heat.
- **Do not** use high pressure water, sand blasting, metal tools or strong solvents to clean the transducer face.
- **Do not** damage the outer protective skin on the transducer.

Related topics
Support information, page 12

System description

The Simrad SN90 is a directional high frequency fish finding sonar. Due to the high resolution and long range, a forward looking SN90 is a very efficient tool for trawlers during the search phase. Since the transducer is placed in the vessel's bow, the SN90 will not suffer from the acoustic noise generated by the hull, machinery and propellers.

Trawlers have for many years relied on high resolution echo sounders - such as the Simrad ES70 - to find and estimate their catch. The disadvantage with echo sounders is the fact that they look straight down. The SN90 offers the high resolution of an echo sounder, but also a large horizontal range that allows you to find fish - even close to the bottom - from a distance of several hundred meters.

The physical installation angle of the transducer must be determined based on the depth in the vessel's normal fishing waters. Even with a fixed installation angle, the SN90 will serve well in other waters too due to the swath and tilt functionality.

The large frequency bandwidth makes the SN90 ideal for species like pollock, cod and saith.

The Simrad SN90 is a unique sonar, both in design and functionality. The composite transducer and the transceiver each uses 256 individual channels for transmission and reception. A large frequency bandwidth is supported, as the SN90 allows you to choose an operational frequency bandwidth from 70 to 120 kHz. The frequency bandwidth can be set up individually for each sonar view.

The beams have a horizontal coverage area of maximum 160 degrees, and the vertical beam width is typically 6 degrees. The beams can be tilted from 0 down to 60 degrees. In addition to this, an adjustable split-beam inspection beam of typically 5 x 5 degrees can be used for a more detailed study of a school of fish, such as observing fish behavior, target strength and biomass.

The absence of a hull unit allows for easier and less space demanding installation, and the transducer is either mounted flush with the hull plating, or in a streamlined blister. The transducer installation removes the chance to get tangled up or damaged by wires, and greatly reduces the risk of being damaged by objects in the water.

Great emphasis has been placed on giving the best possible sonar presentations on a high resolution colour display.

The SN90 is equipped with Simrad's celebrated signal processing software. It includes Hyperbolic FM transmissions (also know as "Chirp") to ensure a clutter free picture with very high resolution in range.

The signal processing and beamforming is performed in a fast digital signal processing system using the full dynamic range of the signals. In addition to the traditional single frequency transceiver system, the SN90 contains an advanced frequency modulated filter system (FM).

The SN90 Processor Unit is controlled by the Microsoft® Windows® operating system, which result in a flexible choice of presentation modes for a large range of user applications.

Related topics
System diagram, page 11

Key features

The Simrad SN90 introduces a new and efficient search and investigation tool for trawlers and purse seiners.

For use on trawlers, the transducer is mounted on the vessel's bow in a "forward looking" position. It is well protected against acoustic noise from hull, machinery and propellers. The high resolution and long range allows you to detect and investigate single fish and schools - even those close to the bottom - from a distance of several hundred meters.

For use on purse seiners, the transducer is mounted on the side of the hull, and protected from the purse wire. The SN90 allows you to run alongside a school of fish to observe it, and you can analyze the school without passing over it.

- Up to 160° horizontal coverage
- Up to 80° vertical coverage
- Thee separate 5x5° inspection beams
- 0 to -60° tilt
- Operational frequency 70 to 120 kHz in steps of 1 kHz
- Narrow vertical beam
- Hyperbolic FM transmissions ("Chirp")
- Wide bandwidth
- Large dynamic range
- High resolution
- Stabilized beams
- Easy operation
- Store and replay raw sonar data

- Define and save your own user settings
- Clear and easily comprehensive sonar data
- Cost efficient solution

System diagram

The system diagram identifies the main components of a basic SN90 system, as well as the key connections between the units. Interface capabilities and power cables are not shown.

A *Processor Unit*

B *Colour display*

C *Operating Panel*

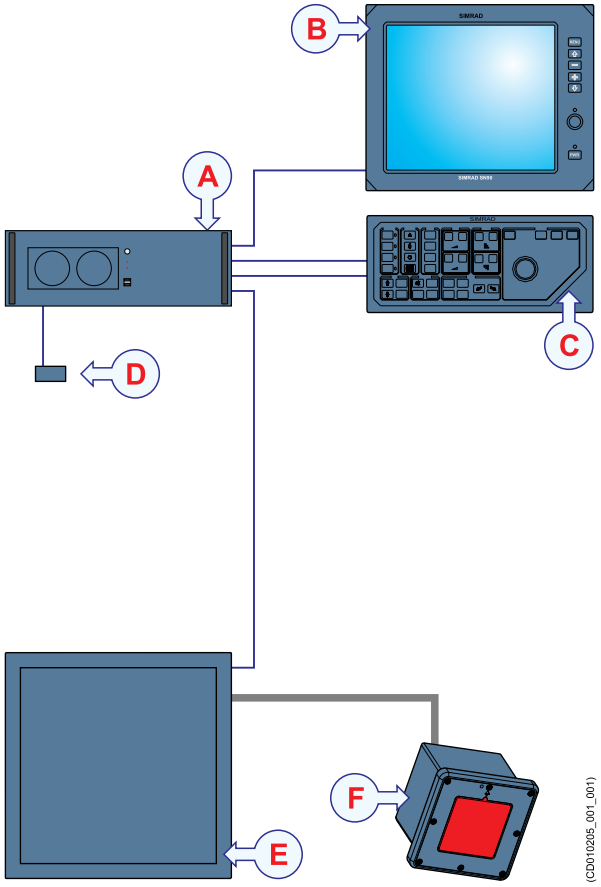
D *Operating Panel Power Supply*

E *Transceiver Unit*

F *Transducer*

Note that the display is not a standard part of the SN90 delivery.

This is a commercial item that can be purchased locally.



Related topics

System description, page 8

Support information

If you need technical support for your Simrad SN90 you must contact your local dealer, or one of our support departments. A list of all our offices and dealers is provided on our website. You can also contact our main support office in Norway.

Norway (Main office)

- **Company name**: Kongsberg Maritime AS / Simrad
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- **Telefax**: +47 33 04 29 87
- **Website**: http://www.simrad.no
- **E-mail address**: simrad.support@simrad.com

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- **Telefax**: +34 966 852 304
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- **E-mail address**: simrad.asia@simrad.com

Related topics

Important, page 7

Getting started

Topics

Powering the SN90 on and off

Topics

Powering up the SN90 for normal use

To power up the SN90, use the **Power** button on the Operating Panel.

Context

The SN90 software is automatically started when the Processor Unit is powered up. When started, **Operation** is by default set to *Normal*, while **TX Power** is set to *Off*.

Caution

You must never start SN90 transmissions ("pinging") when the ship is in dry dock. The transducer will be damaged if it transmits in open air.

Procedure

1 Power up the display.

If required, refer to the instructions provided by the display manufacturer.

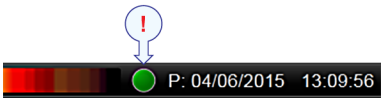
2 On the Operating panel, press the **Power** button, and keep it depressed for approximately two seconds.

The green lamp on the right side of the button will flash to indicated that the power has been switched on. The Processor Unit and the Transceiver Unit are both automatically powered up.

3 Once the SN90 program has started, observe that the presentation fills the entire screen.

4 In the bottom right corner of the presentation, observe the small green indicator.

This indicator will flash to show you the progress of the start-up sequence. When the green light is steady, the SN90 is ready for use.



Note

If you wish to monitor the power sequence, double-click the indicator to open the **TRU On/Off Monitor** *dialog box.*

5 At the bottom of the **Main** menu, observe that the **Operation** menu icon is flashing.

It is flashing to indicate that the SN90 is powered up and in *Normal* mode, but with the **TX Power** set to *Off* to prevent transmission.

6 Set **TX Power** to *Maximum* (or an other power rating) to start "pinging".

Result

The SN90 starts up using the same operational parameters as the last time you used it. If these parameters are acceptable, continue operation. If you wish to alter basic operational parameters, see the relevant procedures.

Power off the SN90

To power off the SN90 press **Power** on the Operating Panel.

Context

When you do not use the SN90, switch off the entire system.

The **Close** button on the top bar will close the SN90 program and power down the Transceiver Unit. It will however not power down the Processor Unit.

Note

You must NEVER switch off the SN90 by means of the on/off switch on the Processor Unit. You must ALWAYS use the Operating Panel.

Procedure

1 Press **Power** on the Operating Panel.

2 Observe that the SN90 program and the Transceiver Unit stops.

This may take a minute or two.

3 Power off the display.

Operating principles

Topics

Using the Operating Panel and/or a mouse

The SN90 is controlled from the Operating panel. You can also use a standard computer mouse or a trackball. For specific purposes, you can even connect an optional computer keyboard to the Processor Unit.

Definitions

In this manual, the phrases "click" and "select" means that you shall place the cursor over the specified button, field or function, and press the **Select** button on the Operating Panel (or the left mouse button) once. The phrase "double-click" means that you shall press the **Select** button (or the left mouse button) twice rapidly.

The phrase "right-click" means that you shall place the cursor over the specified button, field or function, and press the **Object** button on the Operating Panel (or the right mouse button) once.

The phrase "press" means that you shall press a physical button with your finger, this is typically any button on the Operating Panel.

Cursor

The mouse (or trackball) controls the cursor movement on the SN90 presentation. By moving the cursor over the various information provided, and clicking the left mouse button, you are able to control all operation.

Tip

If you are left-handed, the operating system allows you to redefine the mouse buttons. You can then choose to click with the right button.

The shape and purpose of the cursor change depending on its location in the SN90 user interface.

- Move the cursor over the top bar at the top of the SN90 presentation and status bar at the bottom, and left-click the icons and buttons to access the functionality offered.

- Move the cursor over the information in the views, and observe the tooltip that provides relevant information about the echoes.
- Move the cursor over the menu and menu buttons, and click to alter the operational parameters and open dialog boxes. Observe that the shape of the cursor changes over the menu buttons to indicates which choices you have to control these parameters.

Mouse

A computer mouse is optional.

It can be connected to the Processor Unit, or to the sapre USB socket under the Operating Panel.

The mouse can be used to control the functionality provided by the SN90. The mouse controls the movements of the cursor. Use the mouse buttons to click on menu buttons in the SN90 user interface, and to select parameters in the dialog boxes.

Keyboard

The SN90 user interface has been designed for use without the need of a computer keyboard. For special purposes, an optional keyboard can be connected to a USB socket on the Processor Unit.

Controlling the cursor

The trackball and adjacent buttons on the Operating Panel are used to control the cursor in the SN90 presentation. Use these to access the functions provided, and to open the shortcut menus.

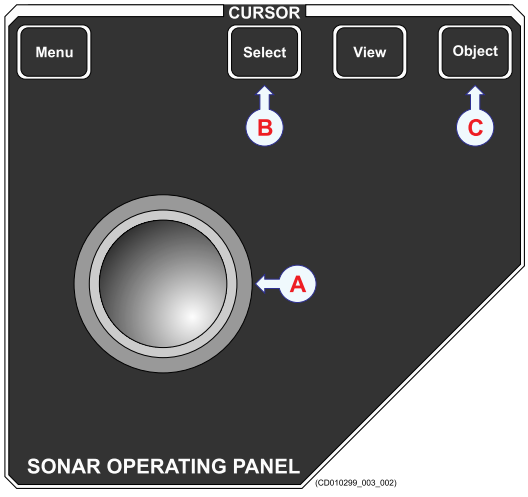
Context

The trackball and the **Select** and **Object** buttons correspond to a standard computer mouse with its left and right mouse buttons.

A *Trackball controls the cursor position*

B **Select** *button (same as left mouse button)*

C **Object** *button (same as right mouse button)*



Procedure

1 Use the trackball (**A**) on the Operating Panel.

Observe that the cursor moves in the SN90 presentation, and that it changes its shape depending on its location in the user interface.

2 Observe the location of the **Select** button (**B**).

3 Place the cursor in the middle of a sonar view, and press **Select**.

Observe that the view border changes to a thicker line. You have now "activated" the view.

Note

This is a key function. You must first activate a view before you can define the operational settings for it!

4 Move the cursor inside the sonar view.

Observe that relevant information is shown next to the cursor, and that this information is changed when the cursor is moved inside the view.

5 Place the cursor in the middle of a menu button, and press **Select**.

Depending on the nature of the selected button, this may open a sub-menu or a dialog box. The settings you make will by default only be applied to the "active" view.

6 Place the cursor inside the *Horizontal* or *Vertical* sonar view, and press **Object**.

Observe that a short-cut menu opens with choices relevant to the view.

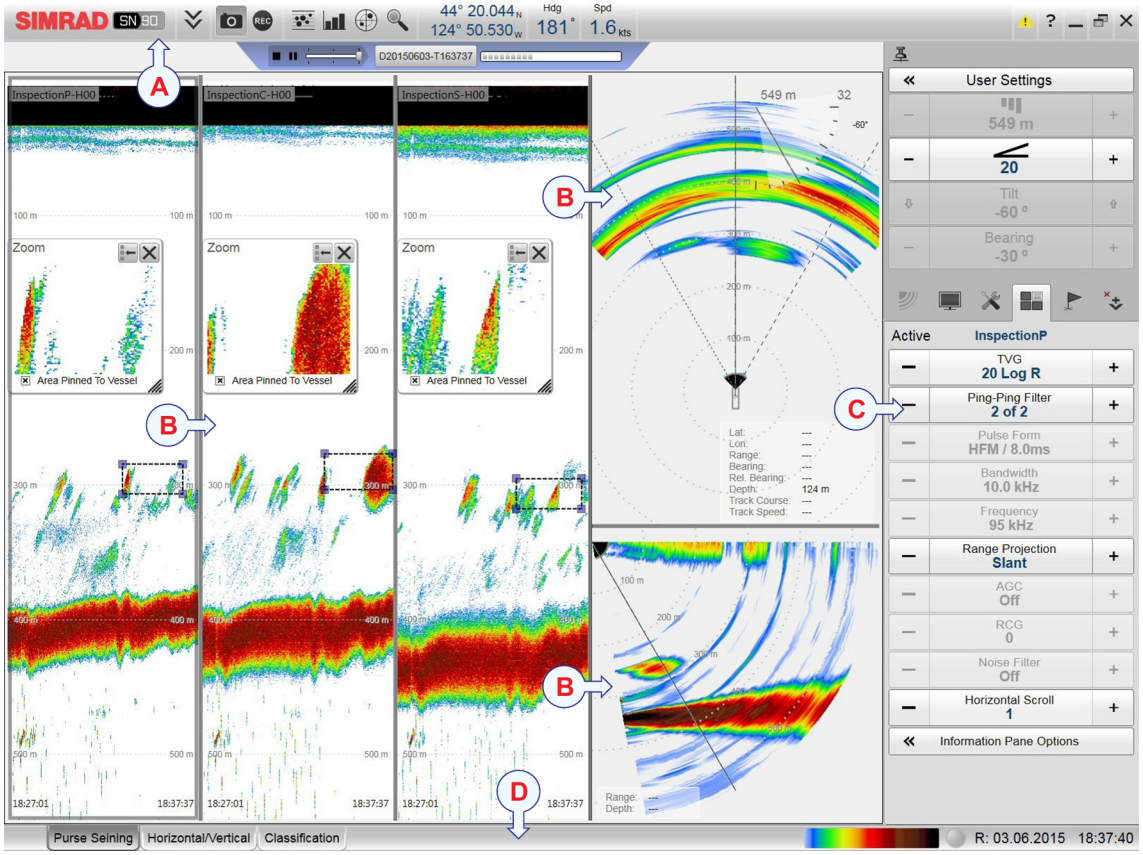
7 Move the cursor over the top bar.

Observe that tooltips identify the functions available.

Familiarize yourself with the user interface

The SN90 consists of specific visual elements that work together. These elements shall provide you with the echo information you need, help you to control the functionality needed to understand this information, and finally allow you to control the operational parameters.

Context



The following visual elements are in use:

A *Top bar*

B *Sonar views*

C *Menu system*

D *Status bar*

Procedure

1 Move the cursor to the top bar, and investigate the functions provided.

Observe that small tooltips open to identify the various functions you can use. You can hide the menu, make screen captures and start and stop echo recording. You can also open "information panes" to investigate details in the echo information.

2 Move the cursor to the menu system on the right side of the SN90 presentation.

Observe the **Main** menu in the top right corner, and the small icons under the **Main** menu. Click on these icons to open and close the secondary menus.

3 Move the cursor to the status bar at the bottom of the SN90 presentation.

Observe the tabs on the left side, these allow you to choose between the presentation modes. Click on each of these tabs, and notice that the contents of the main presentation change to give you different rectangular "sonar views".

4 Move the cursor to the sonar views in the main SN90 presentation.

Observe that the various modes selected on the status bar gives you different configurations of rectangular sonar views.

You can change the physical size any view by clicking on the view border, and then drag it to create a larger rectangle. Note that the size of the other views will be reduced accordingly!

5 Click inside one of the sonar views.

Observe the border lines of the view are drawn with a thicker line. The view is "activated".

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

Related topics

Presentation modes, page 37
Sonar views, page 38
Top bar description, page 40
Status bar, page 41
Information panes, page 42
Menu system, page 43

Activating a sonar view to change the operational settings

All echo information offered by the SN90 are shown using rectangular "sonar views". Each of these views can be set up with independent operational settings. In order to select which sonar view to change, it must first be "activated".

Context

The SN90 presents the echo data using different views. All information from one single ping is shown in all views simultaneously. Each view can operate with any operational frequency in the available range, and they can be set up with different operational parameters.

Which views to see, and how they arranged in the SN90 presentation, is controlled by the presentation modes chosen by the tabs on the status bar.

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

Procedure

1 At the bottom of the SN90 presentation, observe the horizontal status bar.

2 Click any of the tabs on the left side of the status bar to choose between the presentation modes (sonar view combinations).

3 Observe that the number of views that are shown in the SN90, and their locations, are changed.

4 To activate one of the views, click once in it using the **Select** button on the Operating Panel or the left mouse button.

Observe that the selected view is shown with a thicker border line. The content of the **Active** menu is also changed to reflect the parameters available for the "activated" view.

Operating Panel description

The Operating Panel contains all necessary control functions for normal operation of the SN90.

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.

The majority of the SN90 functions can be accessed using the trackball on the Operating Panel and the menu system shown on the display. You can also use a standard computer mouse, and connect it either to the Operating Panel or directly to the Processor Unit.

A ***Main switch****: Power the sonar on (and off). The* ***Up****,* ***Middle*** *and* ***Down*** *buttons are not functional on the SN90.*

B ***Symbol****: Control the target markers providing exact latitude and longitude positioning.*

C ***Mode****: Select your favourite presentation mode.*

D ***Gain****: Separate gain controls for the horizontal and vertical views.*

E ***Range****: Separate range control for the horizontal and vertical views.*

F ***Cursor****: Menu and cursor control. The* ***View*** *button is not functional on the SN90.*

G ***Tilt****: Easy control of the sonar's tilt angle in the horizontal, vertical and inspection beam views. Select active view first!*

H ***Various****: Store interesting screen captures, and zoom in on details.*

I ***Train****: Manual control of beam training in the horizontal, vertical and inspection beam views. Select active view first!*

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

Starting normal operation

Topics

Introduction to the basic procedures

Once you have powered up the complete SN90 system, and started the SN90 program, you are ready to start the actual operation.

Observe these brief procedures to familiarize yourself with the basic operation.

When started up, the SN90 will automatically apply its previous setup parameters. These procedures are partly provided to get you acquainted with the basic functionality provided by the SN90, and partly to set up the system for normal use. If you already know the SN90, or the current operational parameters are acceptable, you may not need to do any of these procedures.

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

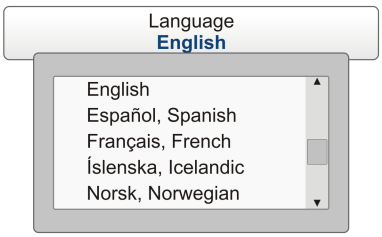
Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

Selecting menu language

The menu buttons - as well as other texts in the SN90 user interface - are available in several languages.

Context

The SN90 on-line help may not be available for the language you choose. By default, the English version will then be shown.



Procedure

1 Observe the **Main** menu.

Its default location is on the right side of the SN90 presentation.

2 Click the **Setup** icon.

This icon is located under the **Main** menu. It is used to open the **Setup** menu.

3 Click the middle of the **Language** button to open the list of available languages.

4 Click once on the language you wish to use.

5 Observe that the list is closed.

Result

All text in the user interface (menu buttons, dialog boxes etc) are changed to the selected language.

Further requirements

The context sensitive on-line help file may also be available in your language. To change the language in the on-line help, you must restart the SN90 program. If your language is not offered, the English on-line help will appear.

Setting operational mode for normal use

In order to start transmitting ("pinging") you must set the SN90 to *Normal* operational mode. This is the default setting when the SN90 is powered up.

Context

The **Operation** function controls the operational mode of the SN90. You can set it to *Normal*, *Replay*, or *Inactive*.

WARNING

You must never start "pinging" when your vessel is in dry dock. Transmitting in air will damage the transducer beyond repair.

Once started, the SN90 transmissions are controlled by the **Transmission Mode** and **TX Power** functions, as well as the settings on the **Active** menu.

Procedure

1 Click the **Operation** icon.

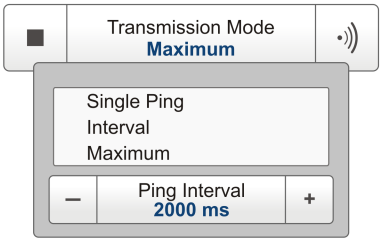
This icon is located under the **Main** menu. It is used to open the **Operation** menu.

2 Click **Operation**, and set it to *Normal*.

The system is now ready for transmission.

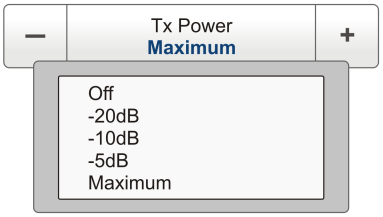
3 Click the middle of the **Transmission Mode** button to see the available options.

4 Click **Maximum** to choose maximum ping rate.



The SN90 will transmit ("ping") as often as possible. The ping rate mainly depends on the chosen presentation mode and the selected range. However, hardware and interface issues may also reduce the SN90 ping rate

5 Click the middle of the **TX Power** button to see the choices.



6 Click **Maximum** to choose maximum output power.

Result

The SN90 is now transmitting acoustic pulses into the water.

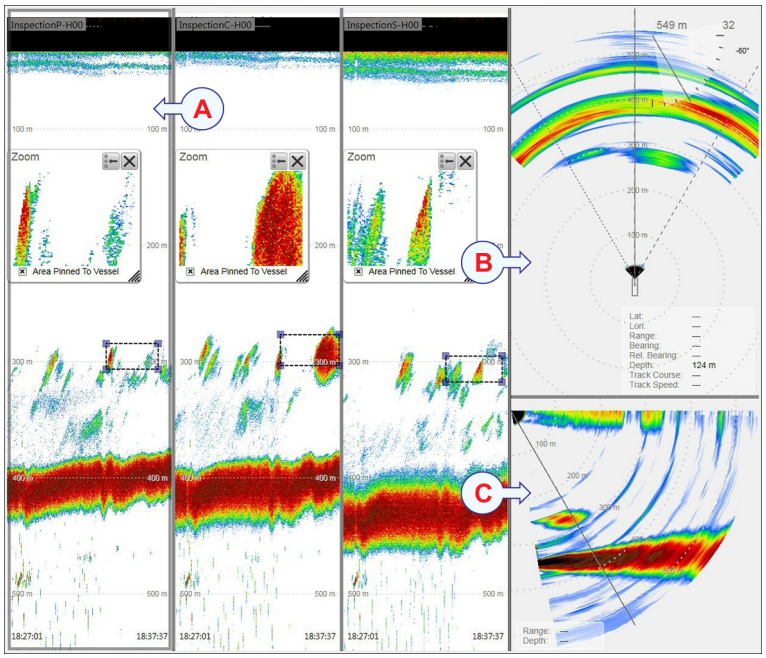
Choosing which sonar views to use

The SN90 offers three different sonar views. Combinations of these views are organized in presentation modes, which you can select from the tabs on the status bar.

Context

The SN90 presents the echo data using different views. All information from one single ping is shown in all views simultaneously. Each view can operate with any operational frequency in the available range, and they can be set up with different operational parameters.

Which views to see, and how they arranged in the SN90 presentation, is controlled by the presentation modes chosen by the tabs on the status bar.



A *Inspection Beam*: Note that the left *Inspection Beam* view has a thicker border than the other views. This is because it is presently the "active" view.

B *Horizontal*: The three lines in the view identify the current horizontal directions of the three *Inspection Beam* views.

C *Vertical*: The solid line identifies the current tilt, and thus also the vertical direction of the centre *Inspection Beam* view.

The following views are available.

- **Horizontal view**

  The *Horizontal* view shows your the area covered by the SN90 "from above". The entire sector (90, 120 or 160°) is shown. The view also displays the current tilt as well as numerical information.

- **Vertical view**

  The *Vertical* view shows you the "vertical slice" of the echo data. The slice covers a vertical area from 0 to -60° relative to the physical installation angle of the transducer. You can train the slice within the currently selected swath width (90, 120 or 160°). Numerical information in the view shows you the current range and depth of the cursor position.

- **Inspection beam view**

  The SN90 offers three inspection beams; *Centre*, *Starboard* and *Port*. Each inspection beam has an opening angle of 5x5°, and allows you to investigate certain targets in more detail. The information from the inspection beams are presented in their own views.

  The tilt of the *Centre* inspection beam follows the tilt you have selected in the *Horizontal* view. You can train this beam within the currently selected swath width (90, 120 or 160°) using the **Train** buttons on the operating panel.

  Once the relevant view is "active", the *Starboard* and *Port* inspection beams are controlled individually using the **Train** and **Tilt** buttons on the operating panel. You can also use the **Bearing** and **Tilt** functions on the **Main** menu.

You can change the physical size any view by clicking on the view border, and then drag it to create a larger rectangle. Note that the size of the other views will be reduced accordingly!

Procedure

1 At the bottom of the SN90 presentation, observe the horizontal status bar.

2 Click any of the tabs on the left side of the status bar to choose between the presentation modes (sonar view combinations).

3 Observe that the number of views that are shown in the SN90, and their locations, are changed.

4 To change the physical size of a view:

   a Click on the border of the chosen view.

   b Press and hold the **Select** button on the Operating panel (or the left mouse button).

   c Drag the border sideways (or up/down) to change the size of the view.

Adjusting the signal gain

You can compare the gain setting with the volume control on your car radio. When the gain is increased, the echoes will appear stronger, and weak echoes will be easier to see. However, since you also increase the acoustic noise in the reception, the SN90 echo presentations will also show this noise. Too much gain may therefore "distort" the presentation.

Context

The purpose of the **Gain** function is to adjust the echo level in the SN90 presentations. In other words, it controls how much amplification that is applied to the received echoes. Note that the selected gain is by default only applied to the active view.

Tip

Do not confuse this setting with the **Display Gain** *setting on the* **Display** *menu.*

The **Display Gain** *controls the "visual amount" of echo that are displayed, in other words the strength of the echo presentation. Use this parameter together with* **Gain** *to control the SN90 sensitivity.*

Procedure

1 Observe the **Main** menu.

Its default location is on the right side of the SN90 presentation.

2 Observe the **Gain** button on the **Main** menu.

3 Click in any sonar view to make it active

The active view is identified with a thicker border. Unless you use the **Apply to all** function, all changes you make will only be applied to this view.

4 **Method 1**

a Click [+] or [-] to choose gain.

5 **Method 2**

a Click the middle of the **Gain** button, hold the mouse button depressed.

b Drag the cursor sideways to increase or decrease the gain.

6 **Method 3**

a Click the middle of the **Gain** button to open the submenu.

b Type the requested gain value.

Note

You can only use this method if you have computer keyboard connected to your Processor Unit.

Choosing the sonar range

In all echograms, the start depth of the echogram is defined by the **Start Range** depth value. The range starting from this chosen start depth is defined by the **Range** value.

Context

The range setting defines how "far" you wish the SN90 to detect echoes: the horizontal or vertical distance from the vessel to the outer edge of the search area.

Horizontal and vertical ranges can also be selected using the relevant buttons on the Operating Panel.

In addition to the read-out on the menu button, the current ranges are also shown with the range rings in the *Horizontal* and *Vertical* views, and with the horizontal range lines in the *Inspection beam* views. When you move the cursor inside the *Horizontal* and *Vertical* views, you can also read the actual range from the vessel to the current cursor position.

Note

Even though you can choose a large range value, that does not mean that you can detect your targets on the same range. The range value only defines the range that is shown in the views. Actual target detection will always depend on the operational environment, such as water temperature, salinity, interference and layers in the water column.

The **Range** function will only work on the currently selected view. This view is identified with a thicker border frame. This means that you must first click in the view to select it, and then change the range for that view.

Procedure

1 Observe the **Main** menu.

Its default location is on the right side of the SN90 presentation.

2 Click in any sonar view to make it active

The active view is identified with a thicker border. Unless you use the **Apply to all** function, all changes you make will only be applied to this view.

3 On the **Main** menu, click **Range** to activate the function.

4 Choose the **Range** value.

- To change the horizontal range in a *Inspection Beam* or *Horizontal* view, click once inside the view to select it, then click **Range** to change the value.
- To change the vertical range in the *Vertical* view, click once inside the view to select it, then click **Range** to change the value.
- To change the range in all views simultaneously, click the middle of the **Range** button to open the menu, and then click **Apply To All**.

Use any of the following methods to change the depth range.

a Click [+] or [-] to adjust the range manually.

b Click the middle of the button, hold the mouse button depressed, and drag sideways.

c Click the middle of the button to open it, then type the requested range on the keyboard.

Choosing echo colours

Several different colour scales are predefined and available for the presentation of sonar echoes. You can easily choose which colours to use.

Context

Which colour scale to use is mainly a personal preference based on ambient light conditions, the nature of the echoes and your own experience.

Keep in mind that in the basic scale with 12 colours, each discrete colour represents a 3 dB range of echo signal strength. This implies that the next colour is selected every time the echo strength is doubled.

12 colours Sonar colours Echogram colours Grayscale BI500 colours

The **Echogram colours** scale is based on the standard 12-colour scale, but additional colours have been added between these to make smoother colour transitions.

The currently selected colour scale is shown at the bottom of the SN90 presentation.

Tip

Do not confuse this setting with **Colour Threshold** *on the* **Display** *menu.*

The **Colour Threshold** *function allows you to reduce or increase the number of colours. This will provide a filtering effect that removes the weakest echoes.*

Procedure

1 Click the **Display** icon.

This icon is located under the **Main** menu. It is used to open the **Display** menu.

2 Click **Colour Setup**.

Observe that the **Colour Setup** dialog box opens.

3 Select the number of colours you wish to use.

Note

If you wish to apply the predefined colour scales you must select 24 colours.

4 Select the colour scale you wish to use.

5 Click **Apply** if you wish to preview the choice you have made.

6 Click **OK** to save the chosen parameters and close the dialog box.

Using the SN90 filters

The SN90 offers several filters in the signal path. You can use these filters to enhance the echo presentation, but it important to understand that the filters are mutually dependent. All the filters are implemented using software algorithms.

Context

The following filters are available in the SN90 user interface:

1 **Noise filter**

The **Noise Filter** function removes unwanted acoustic noise from the SN90presentation. It will reduce the interference from other acoustic systems (sonars and echo sounders), and reduce the noise from propellers and similar noise sources.

Note that the noise filter is applied in two stages in the filter sequence.

2 **AGC (Automatic Gain Control)**

The **AGC** (Automatic Gain Control) function runs an automatic analysis of the echo strength. The AGC analysis will maintain a proper dynamic range based on all the current echo values. This is done by automatically reducing the gain if you have reverberation and noise, or increasing the gain if the acoustical conditions permit it.

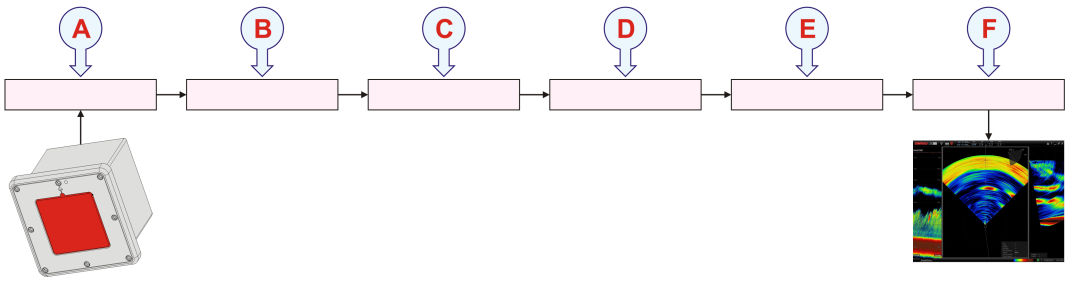
3 **RCG (Reverberation Controlled Gain)**

The **RCG** (Reverberation Controlled Gain) controls the receiver processing individually for the receiving beams. It will automatically remove unwanted reverberation from the bottom or from the sea surface. It may however also remove scattered fish from the presentation.

4 **Ping-Ping filter**

The **Ping-Ping Filter** analyzes the historical information from previous consecutive pings in order to remove unwanted noise and interference from the SN90 presentation.

The filters are implemented in a sequence. This makes them mutually dependent. Any change to a filter section early in the sequence will have an effect on the performance of the filters following it.



A *Noise filter* (Part 1)

B *Gain and Time Varied Gain (TVG) adjustments*

C *Noise filter* (Part 2)

D *AGC (Automatic Gain Control)*

E *RCG (Reverberation Controlled Gain)*

F *Ping-Ping filter*

The **Gain** and **Time Varied Gain (TVG)** functions are not filters, but they are shown here because they will also have an effect on the filter performances.

Note

By default, each filter setting will only be applied to the currently active view. The active view is identified at the top of the **Active** *menu.*

Procedure

1 Click in any sonar view to make it active

The active view is identified with a thicker border.

2 Observe the **Main** menu.

Its default location is on the right side of the SN90 presentation.

3 Click the **Active** icon.

This icon is located under the **Main** menu. It is used to open the **Active** menu.

4 Switch all filters off.

5 While observing the filter sequence, define new settings for each filter.

Opening the context sensitive on-line help

The SN90 is provided with an extensive context sensitive on-line help system. All information of the SN90 *Reference manual* is also provided in the on-line help.

Context

The context sensitive on-line help is located in a single proprietary Microsoft® CHM file. This CHM file will run on any computer with a Microsoft operating system. You can also copy the CHM file to any tablet device if you have a reader application that supports the CHM format.

Note

Due to limitations defined by Microsoft®, CHM files will not open from websites and servers.

To open the help system, click the **Help** button in any dialog box. This will provide instantaneous information about the relevant dialog box with links to related procedures and topics.

Navigation in the on-line help file is made by means of the menu system on the left side, as well as the interactive links in the document.

Note

The on-line help may not be available in the language you have chosen for the user interface. By default, the English on-line help will then be used.

Procedure

1 Click the **Help** button on the top bar.

This will open the on-line help file on its start page. Observe the menu on the left side, or use the search functionality.

2 Click the **Help** button in any dialog box.

The description of the related dialog box will appear in the help window.

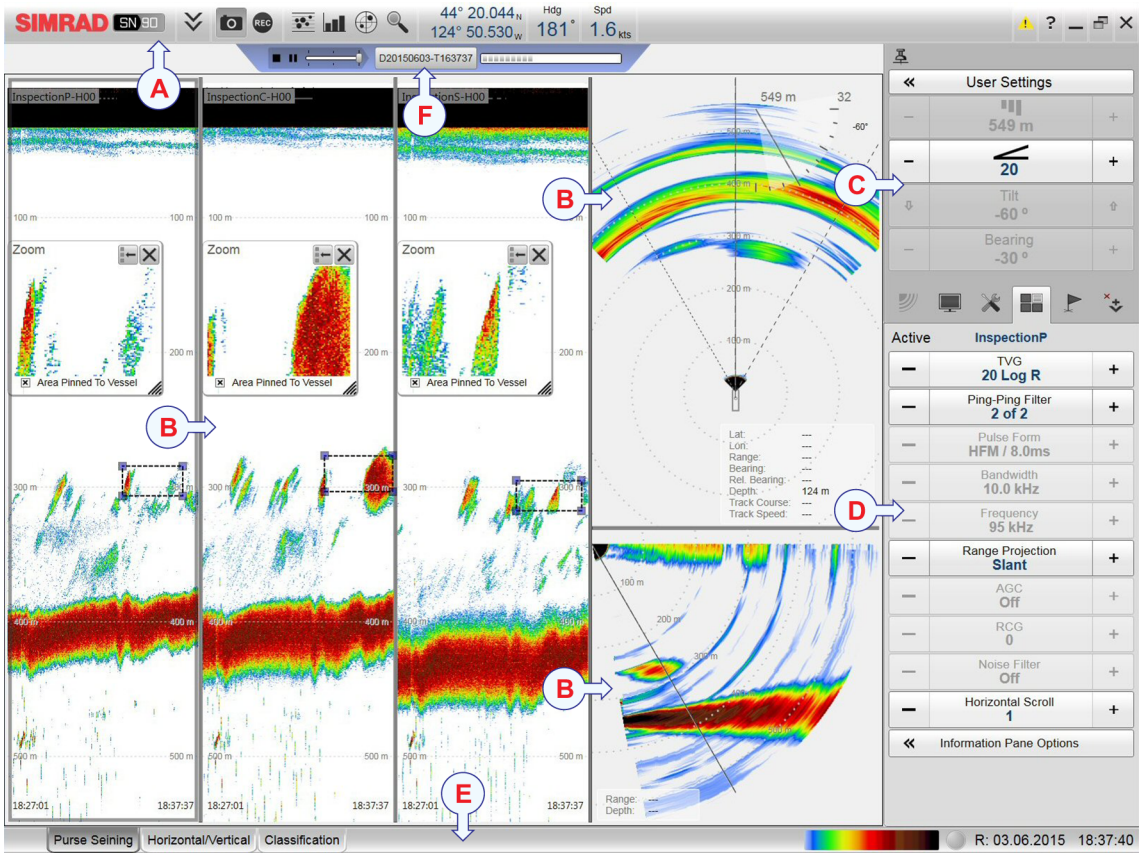
User interface

Topics

SN90 presentation overview

By default, the SN90 presentation covers the entire screen.

This SN90 screen capture shows you a typical operational situation.



The presentation provides you with a lot of information. You can see several rectangular sonar views presenting sonar echo data in different ways. The top bar shows you navigational information, and offers buttons for key functions and information panes. The menu system on the right side gives you easy access to all the functionality offered by the SN90.

A Top bar

The top bar identifies Simrad as the manufacturer, and the name of the product (SN90). It also provides several information read-outs and buttons. These are used to hide or retrieve the menu system and the information panes, show you navigational information, and to enable basic system functionality.

B Sonar views

The graphical presentation of sonar data occupies the greater part of the SN90 presentation. The sonar uses a number of different sonar views. These are arranged into presentation modes that can be selected on the status bar.

C **Main menu**

The menu system is by default located on the right hand side of the presentation. To open any of the sub-menus, click the icons under the **Main** menu. To hide or retrieve the **Main** menu, click the **Menu** button on the top bar.

D **Secondary menus**

The secondary menus are opened and closed by clicking the buttons at the bottom of the **Main** menu.

E **Status bar**

The status bar is located at the bottom of the SN90 presentation.

F **Replay bar**

During replay a dedicated replay bar is provided under the top bar. The replay bar allows you to retrieve saved files, and to control the playback.

Related topics

Presentation modes, page 37
Sonar views, page 38
Top bar description, page 40
Status bar, page 41
Information panes, page 42
Menu system, page 43

Presentation modes

Each presentation modes offered by the SN90 arrange a selection of views in a predefined pattern. First you must find the mode that fits your operational requirements, then you can change the size of the individual views.

How to open

To open a presentation mode, use the relevant tab on the status bar.

Description

Once the views are automatically arranged in the chosen presentation, you can click and drag the borders on the individual views to change the size of the rectangles. Please note that by increasing the size of one view, the others will be smaller.

The following presentation modes are available.

- **Purse Seining**

  The *Purse Seining* presentation modes presents three *Inspection beam* views on the left side of the SN90 screen. On the right side, the *Horizontal* and *Vertical* views are stacked with the *Horizontal* view on the top.

- **Horizontal/Vertical**

  The *Horizontal/Vertical* presentation modes presents one *Inspection beam* view on the left side of the SN90 screen. The *Horizontal* and *Vertical* views are also shown, and all three views are placed side by side.

- **Classification**

  The three *Inspection beam* views are placed side by side on the SN90 screen. The *Horizontal* and *Vertical* views are not shown.

Related topics

SN90 presentation overview, page 36
Familiarize yourself with the user interface, page 19

Sonar views

All echo information offered by the SN90 are shown using rectangular "sonar views".

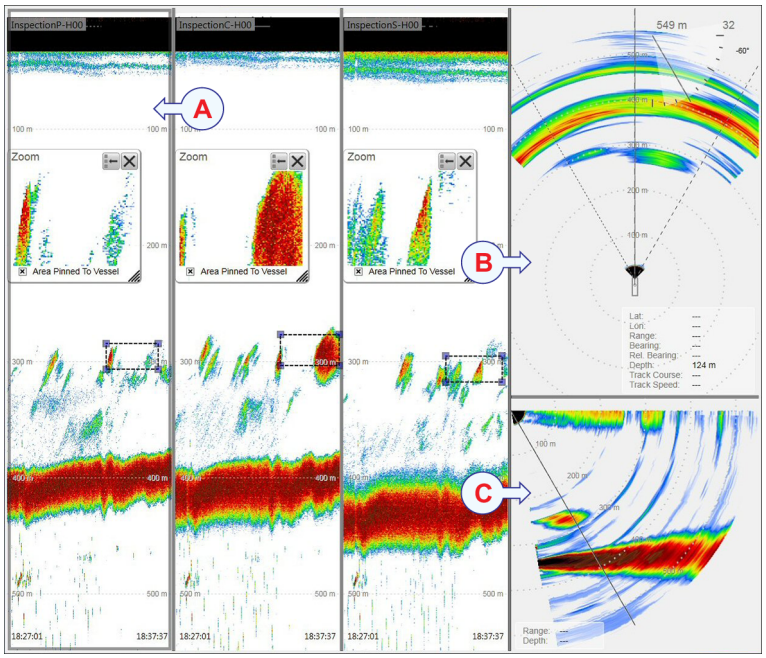
How to open

To open the various views, select a presentation mode from the status bar. Each presentation mode offers a different combination of views.

Description

The SN90 presents the echo data using different views. All information from one single ping is shown in all views simultaneously. Each view can operate with any operational frequency in the available range, and they can be set up with different operational parameters.

Which views to see, and how they arranged in the SN90 presentation, is controlled by the presentation modes chosen by the tabs on the status bar.



A *Inspection Beam*: Note that the left *Inspection Beam* view has a thicker border than the other views. This is because it is presently the "active" view.

B *Horizontal*: The three lines in the view identify the current horizontal directions of the three *Inspection Beam* views.

C *Vertical*: The solid line identifies the current tilt, and thus also the vertical direction of the centre *Inspection Beam* view.

The following views are available.

- **Horizontal view**

  The *Horizontal* view shows your the area covered by the SN90 "from above". The entire sector (90, 120 or 160°) is shown. The view also displays the current tilt as well as numerical information.

- **Vertical view**

  The *Vertical* view shows you the "vertical slice" of the echo data. The slice covers a vertical area from 0 to -60° relative to the physical installation angle of the transducer. You can train the slice within the currently selected swath width (90, 120 or 160°). Numerical information in the view shows you the current range and depth of the cursor position.

- **Inspection beam view**

  The SN90 offers three inspection beams; *Centre*, *Starboard* and *Port*. Each inspection beam has an opening angle of 5x5°, and allows you to investigate certain targets in more detail. The information from the inspection beams are presented in their own views.

  The tilt of the *Centre* inspection beam follows the tilt you have selected in the *Horizontal* view. You can train this beam within the currently selected swath width (90, 120 or 160°) using the **Train** buttons on the operating panel.

  Once the relevant view is "active", the *Starboard* and *Port* inspection beams are controlled individually using the **Train** and **Tilt** buttons on the operating panel. You can also use the **Bearing** and **Tilt** functions on the **Main** menu.

You can change the physical size any view by clicking on the view border, and then drag it to create a larger rectangle. Note that the size of the other views will be reduced accordingly!

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

Related topics

SN90 presentation overview, page 36
Familiarize yourself with the user interface, page 19

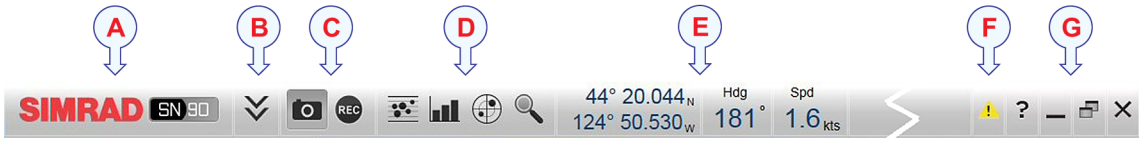
Top bar description

The SN90 top bar is located on the top of the display presentation, and stretches from the far left to the far right side.

The top bar gives you fast access to key functionality and navigational information. It provides buttons to hide or show the menu, to start and stop data recording, to open the **Messages** dialog box, and to open the context sensitive on-line help.

And more important, the top bar holds the dedicated buttons to open the various information panes.

It also provides a few buttons related to operating system features.



A **Logo and product name**

This element identifies the manufacturer and the product.

B **Menu button**

Click this button to hide or show the menu system.

C **Screen capture** and **Record**

These buttons are provided for easy access to recording functions.

D **Information panes**

Click any of these buttons to open and close selected information panes.

E **Navigational information**

These are not buttons, but information read-outs providing current data related to the vessel location, heading and movements. To select which information to see here, use the **Display Options** dialog box on the **Display** menu.

F **Messages**.

Click this button to open the **Messages** dialog box. This button will flash to indicate that a message is posted. The button colour indicates the severity of the message.

G **Operating system functions**

- **Help**: Click this button to open the context sensitive on-line help.
- **Minimize** : Click this button to minimize the SN90 presentation.
- **Maximize/Normalize**: Click this button to change the size of the SN90 presentation.
- **Close**: Click this button to close down the SN90.

Note

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

Related topics

SN90 presentation overview, page 36
Familiarize yourself with the user interface, page 19

Status bar

The status bar is located at the bottom of the SN90 presentation. It allows you to choose presentation mode (sonar view combinations). It also shows you the current colour scale in use, the status of the transceiver, as well as time and date.

How to open

The status bar is available all the time.

Description

A **Presentation modes**

Each presentation modes offered by the SN90 arrange a selection of views in a predefined pattern. First you must find the mode that fits your operational requirements, then you can change the size of the individual views.

Once the views are automatically arranged in the chosen presentation, you can click and drag the borders on the individual views to change the size of the rectangles. Please note that by increasing the size of one view, the others will be smaller.

B **Colour scale**

The colour scale on the status bar reflects the colour choice you have made for the echograms. To change the colour scale, use the **Colour Setup** dialog box on the **Display** menu.

C **Transceiver status**

The small button on the status bar reflects the status of the transceiver using colour codes. A green button means that the system is operational. You can right-click this button to start, restart or stop the transceiver. You can also open the **TRU On/Off** dialog box to monitor the start-up sequence.

D **Date and Time**

The current date and time is shown on the right side of the status bar.

Note

During replay, the date and time recorded with the data file are shown. The date is then shown with prefix "R:" to indicate that a replay is in progress.

Related topics

SN90 presentation overview, page 36
Familiarize yourself with the user interface, page 19

Information panes

The SN90 offers several *information panes* to provide additional and detailed data from the SN90 presentation. The information panes are opened and closed using the relevant buttons on the top bar.

In order to open an information pane, you must first click in a *Inspection Beam* view to make it "active". The data in the information pane you open will only be valid for the selected view.

To *close* the information pane, click the button one more time. You can also click the **Close** button in the top right corner of the pane.

The SN90 offers the following information panes (from left):

- **Biomass**

  The *Biomass* information pane displays the biomass (the mass of living biological organisms) in the zoomed area in the current *Inspection Beam* view.

- **Size Distribution**

  The *Size Distribution* information pane shows you a histogram of the echoes detected from single fishes. The histogram presents the actual size of the fish in weight or length, or the echo strength (shown in dB).

- **Fish Position**

  The *Fish Position* information pane shows the position of the detected single echoes for the current ping (largest circles) and the three previous ping (smaller circles). The view is "from above". The colours indicate the echo strength.

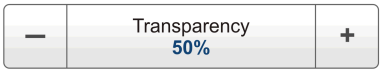
- **Zoom**

  The *Zoom* information pane allows you to zoom in on a chosen area in the current *Inspection Beam* view.

Tip

You can easily change the size and shape of each information pane by clicking in its lower right corner and drag to a new size. To reset the pane to its default size, click the **Reset size** *button in its top right corner.*

To change the transparency of the information pane use the **Transparency** function on the **View** menu.

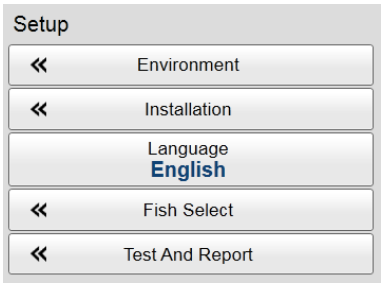


Related topics

SN90 presentation overview, page 36
Familiarize yourself with the user interface, page 19

Menu system

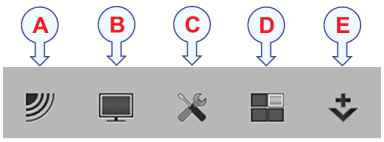
The menu system is by default located on the right hand side of the SN90 presentation.



To change operational settings in the SN90, use the tree structure. It offers a main menu, a set of submenus, and several menu buttons. Some of the menu buttons open dialog boxes or sub-menus to present additional parameters.

The **Main** menu offers the settings most frequently used during normal operation.

Below the main menu, a set of dedicated icons are used to open the secondary menus. These are (from left):



A The **Operation** menu controls the main operational parameters.

B The **Display** menu controls the visual aspects of the system, such as parameters related to the display presentation

C The **Setup** menu allows you to control the configuration of the signal processing, as well as system installation and maintenance, and the interfaces to peripheral devices.

D The **Active** menu has its content linked to the current active view. Use it to access special features available for the selected view.

E The **Object** menu provides functionality related to marker objects. Use it to access the special features available when you work with markers in the SN90 presentation.

Tip

You can hide the menu from view if you do not need it. Click the **Menu** *button on the top bar to hide the menu, and click one more time to retrieve it. When the menu is hidden, it will automatically reappear on the left or right side of the SN90 presentation if you move your mouse cursor to one of those positions.*

Related topics

SN90 presentation overview, page 36
Familiarize yourself with the user interface, page 19
Main menu, page 47
Operation menu, page 48
Display menu, page 49
Setup menu, page 50
Active menu, page 53
Objects menu, page 55

Online help description

The SN90 is fitted with a comprehensive context sensitive on-line help system.

The context sensitive on-line help is located in a single proprietary Microsoft® CHM file. This CHM file will run on any computer with a Microsoft operating system. You can also copy the CHM file to any tablet device if you have a reader application that supports the CHM format.

Note

Due to limitations defined by Microsoft®, CHM files will not open from websites and servers.

To open the help system, click the **Help** button in any dialog box. This will provide instantaneous information about the relevant dialog box with links to related procedures and topics.

Navigation in the on-line help file is made by means of the menu system on the left side, as well as the interactive links in the document.

Tip

To open the on-line help on its start page, click the **Help** *button on the top bar.*

The on-line help may not be available in the language you have chosen for the user interface. By default, the English on-line help will then be used.

Menu system

Topics

Main menu

The **Main** menu is located at the top of the menu structure. It provides the most common functions for efficient use of the SN90. Unless you hide the entire menu system, the **Main** is visible at all times, even if you close the secondary menus.

How to open

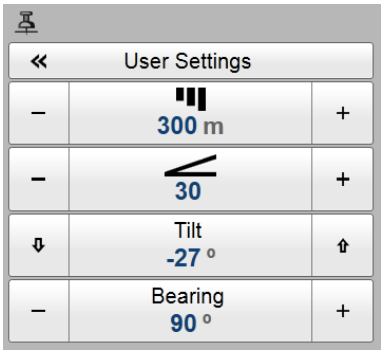
On the top bar, click once on the **Menu** button to hide the menu, and one more time to bring it back again. When the **Menu** is hidden, it will temporarily be shown on the left or right hand side of the display if you move the cursor to that position.

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

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.

- **Range**

  The **Range** function allows you to specify the vertical and horizontal ranges shown on the SN90 presentation. The selected range value is by default applied only to your active view.

- **Gain**

  The purpose of the **Gain** function is to adjust the echo level in the SN90 presentations. In other words, it controls how much amplification that is applied to the received echoes. Note that the selected gain is by default only applied to the active view.

- **Tilt**

  The **Tilt** function allows you to control the vertical angle of the sonar beam.

- **Bearing**

  The **Bearing** function allows you to control the horizontal direction of the sonar beam in the *Inspection Beam* and *Vertical* views.

Tip

For detailed information about every function, button and dialog box, refer to the SN90 Reference manual or the context sensitive on-line help.

Secondary menus

The bottom of the **Main** menu holds the icons to open (and close) the secondary menus. Click once on an icon to open the requested menu, and one more time to close it.

Hiding the menu

If you do not need to use the menu system, click once on the **Menu** button on the top bar. This will hide the menu. Click one more time to bring it back again. When the **Menu** is hidden, it will temporarily be shown on the left or right hand side of the SN90 presentation if you move the cursor to that position.

Related topics

Menu system, page 43

Operation menu

The **Operation** menu offers the most common functions for basic SN90 operation.

How to open

Click once on the icon under the **Main** menu to open the **Operation** menu.

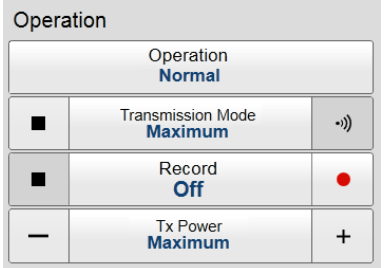
Click one more time on the icon to close the menu.

Note

Immediately after you have powered up the SN90 system, you will see that the menu icon is flashing. This is to remind you that the SN90 is currently passive.

To start the SN90, you must set **Transmission Mode** *to Active, and* **TX Power** *to On.*

Description



1 **Operation**

The **Operation** function controls the operational mode of the SN90. You can set it to *Normal*, *Replay*, or *Inactive*.

2 **Transmission Mode**

The **Transmission Mode** function allows you to control how often the SN90 shall transmit acoustic energy into the water ("ping").

3 **Record**

The **Record** function allows you to record the sonar data, and save this on the Processor Unit hard disk. The data files can later be copied or moved to other recordable media.

4 **TX Power**

The **TX Power** function allows you to increase or decrease the transmitted power in predefined steps (dB). You can also use this function to disable the transmission ("pinging"), and to enable maximum output power.

Tip

For detailed information about every function, button and dialog box, refer to the SN90 Reference manual or the context sensitive on-line help.

Related topics

Menu system, page 43

Display menu

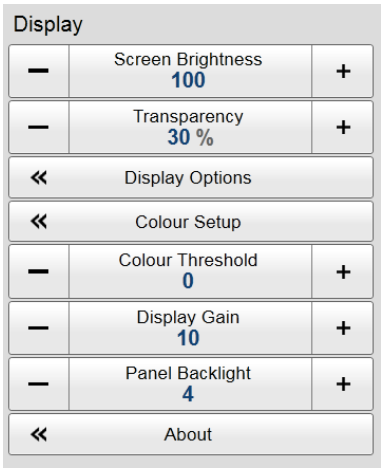
The **Display** menu provides basic functions related to the screen behaviour and presentation of SN90 data.

How to open

Click once on the icon under the **Main** menu to open the **Display** menu.

Click one more time on the icon to close the menu.

Description



1 **Screen Brightness**

The purpose of the **Screen Brightness** function is to adjust the intensity of the light given off by the display presentation.

2 **Transparency**

When you open an information pane, you will see that it is transparent. The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened.

3 **Display Options**

The **Display Options** dialog box allows you to control the location of the menu. It also controls which information you wish to see on the top bar and in the status bar.

4 **Colour Setup**

The **Colour Setup** dialog box allows you to select the presentation colours used by the SN90.

5 **Colour Threshold**

The **Colour Threshold** function allows you to reduce or increase the number of colours. This will provide a filtering effect that removes the weakest echoes.

6 **Display Gain**

The **Display Gain** controls the "visual amount" of echo that are displayed, in other words the strength of the echo presentation. Use this parameter together with **Gain** to control the SN90 sensitivity.

7 **Panel Backlight**

The buttons on the Operating Panel have built-in lamps to increase the visibility on a dark bridge. The **Panel Backlight** function allows you to control the intensity of the light in the buttons.

8 **About**

The **About** dialog box allows you to see the current SN90 software version.

Tip

For detailed information about every function, button and dialog box, refer to the SN90 Reference manual or the context sensitive on-line help.

Related topics

Menu system, page 43

Setup menu

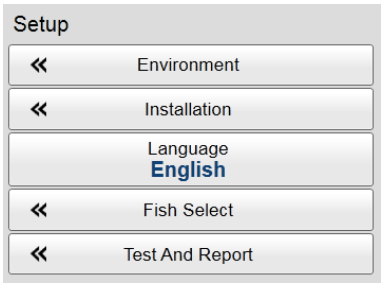
The **Setup** menu provides basic functions related to SN90 installation parameters and communication with peripheral systems.

How to open

Click once on the icon under the **Main** menu to open the **Setup** menu.

Click one more time on the icon to close the menu.

Description



- **Environment**

  The **Environment** dialog box allows you to adjust the parameters related to salinity and sound speed.

- **Installation**

  The **Installation** dialog box allows you to control basic operational parameters related to SN90 installation and operation.

  The following options are provided:

  – **Navigation**

    The **Navigation** page controls how the SN90 receives information from external peripherals, such as positioning and/or gyro compass systems. The information provided by these systems are shown in the top bar.

  – **Motion Reference Unit**

    A motion reference unit (MRU) measures the vessel's pitch and roll movements in the sea. Depending on make and type, some sensors will also measure heave. The information provided by the motion sensor is used by the SN90 to stabilize the sonar beams.

  – **I/O Setup**

    The **I/O Setup** parameters allow you to define which data are that exported or imported on each of the available Ethernet and serial ports on the SN90 Processor Unit. For each port, you can also set up the communication parameters, and monitor the data flow.

  – **Installation Parameters**

    The **Installation Parameters** pages allow you to define physical dimensions related to the vessel and to the SN90 units. All relevant system units and key sensors must be defined with their physical offset values in relation to the defined origo in the vessel's coordinate system. You will only need to do this once.

  – **Synchronization**

    The purpose of the **Synchronization** parameters are to set up the SN90 to operate alone, or as a master or slave in a synchronized system. Synchronization is required in order to avoid interference if the SN90 is used simultaneously with other hydroacoustic instruments within the same frequency range.

  – **Units**

    The parameters on the **Units** page allow you to control the units of measurements used by the SN90.

- **Operating Panel**

  The SN90 Operating Panel is connected to a serial communication port on the Processor Unit. The **Operating Panel** page allows you to define which communication port to use. You can also define which port to use for an optional second Operating Panel.

- **Echogram Orientation**

  The inspection beams offered by the SN90 resembles three individual split beam echo sounders that you can point in the desired directions. The *Inspection beam* views contain detailed "echograms". Using the **Echogram Orientation** function, you can choose if you wish to see the "echograms" with the start depth and the transmit pulse at the transducer face ("Downwards"), or vice versa ("Upwards").

- **Language**

  The purpose of the **Language** function is to select the language to be used in the SN90 user interface. This includes all texts in the echo presentations, in the menus and in the dialog boxes.

- **Fish Select**

  The parameters in the **Fish Select** dialog box allows you to select the fish species you expect to catch, and manually adjust the fish size distribution.

- **Test and Report**

  The **Test and Report** dialog box offers functionality related to system testing using the BITE (Built-In Test Equipment). You can also use this dialog box to export reports related to the current configuration and operational status. The **Test and Report** dialog box also holds a "short-cut" to the **Messages** dialog box.

  The **Test and Report** dialog box offers the following pages:

  - **Messages**

    The **Messages** dialog box allows you to read and acknowledge messages from the SN90.

  - **BITE**

    The **BITE** (Built-In Test Equipment) dialog box controls the test and diagnose program that checks the performance of the SN90.

  - **Import and Export**

    The **Import and Export** page allows you to export user settings, configuration files, message logs and information related to hardware and software troubleshooting.

Tip

For detailed information about every function, button and dialog box, refer to the SN90 Reference manual or the context sensitive on-line help.

Related topics

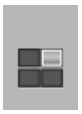
Menu system, page 43

Active menu

The **Active** menu offers parameters related to current views and data presentations shown by the SN90.

How to open

Click once on the icon under the **Main** menu to open the **Active** menu.



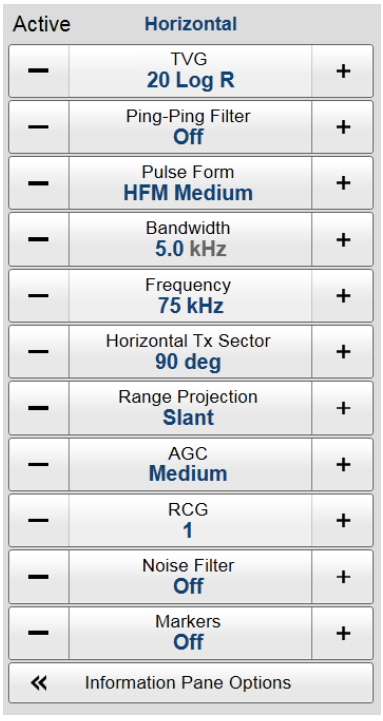
Click one more time on the icon to close the menu.

Note

Before you can change the operational parameters for a sonar view, you must click in the view to make it "active". The changes you make with the buttons on the Operating Panel - or with the mouse - are by default only valid for the "active" view.

Some functions offer an **Apply to All** *choice. If you enable this, the chosen setting is applied to all the sonar views simultaneously.*

Description



- **TVG**

  The **TVG** parameter allows you to choose the Time Variable Gain setting in the SN90. This function will automatically adjust the gain in the SN90 to compensate for geometric spreading and absorption.

- **Ping-Ping Filter**

  The **Ping-Ping Filter** analyzes the historical information from previous consecutive pings in order to remove unwanted noise and interference from the SN90 presentation.

- **Pulse Form**

  The **Pulse Form** function allows you to select between the different shapes that are available for the SN90 transmissions ("pings").

- **Bandwidth**

  The **Bandwidth** function allows you to select the frequency range in the SN90 transmissions ("pings").

- **Frequency**

  The **Frequency** function allows you set the centre frequency of the transmitted pulse ("ping").

- **Horizontal Tx Sector**

  The SN90 transmits in a swath with maximum horizontal opening angle 160°. By means of the **Horizontal Tx Sector** function, you can reduce this opening angle to 90, 120 or 160°.

  This function is only available for the *Horizontal* view.

- **Range Projection**

  The **Range Projection** function allows you to choose how the distance to the current target is calculated; either as a horizontal distance, or along the tilt angle.

- **AGC** (Automatic Gain Control)

  The **AGC** (Automatic Gain Control) function runs an automatic analysis of the echo strength. The AGC analysis will maintain a proper dynamic range based on all the current echo values. This is done by automatically reducing the gain if you have reverberation and noise, or increasing the gain if the acoustical conditions permit it.

  This function is only available in the *Horizontal* and *Vertical* views.

- **RCG** (Reverberation Controlled Gain)

  The **RCG** (Reverberation Controlled Gain) controls the receiver processing individually for the receiving beams. It will automatically remove unwanted reverberation from the bottom or from the sea surface. It may however also remove scattered fish from the presentation.

  This function is only available in the *Horizontal* and *Vertical* views.

- **Noise Filter**

  The **Noise Filter** function removes unwanted acoustic noise from the SN90presentation. It will reduce the interference from other acoustic systems (sonars and echo sounders), and reduce the noise from propellers and similar noise sources.

- **Markers**

  The **Markers** function controls how the SN90 marker symbols are shown in the *Horizontal* view.

  The function is only available for the *Horizontal* view.

- **Horizontal Scroll**

  The **Horizontal Scroll** function controls how fast the echo presentations shall move across the view.

  The function is only available for the *Inspection Beam* views.

- **Information Pane Options**

  The **Information Pane Options** dialog box allows you to change the operational parameters used to present the data in the information panes.

  – **Size Distribution**

    The **Size Distribution** page allows you to set up the parameters for the histogram presented in the *Size Distribution* information pane.

  – **Fish Position**

    The **Fish Position** parameters are used to control the operational settings for the detection of single fish in the inspection beam. In order to detect single fish correctly, these parameters must be defined to suit the target characteristics.

Tip

For detailed information about every function, button and dialog box, refer to the SN90 Reference manual or the context sensitive on-line help.

Context sensitivity

The choices in the **Active** menu depends on which view in the SN90 presentation that is currently "active".

The name of the currently active view is identified at the top of the menu.

To activate a view, click in it. The chosen view will appear with a thicker frame to indicate that it is active. The **Active** menu may therefore change from one view to another.

For this reason, the illustration shown here does not include all possible choices.

Related topics

Menu system, page 43

Objects menu

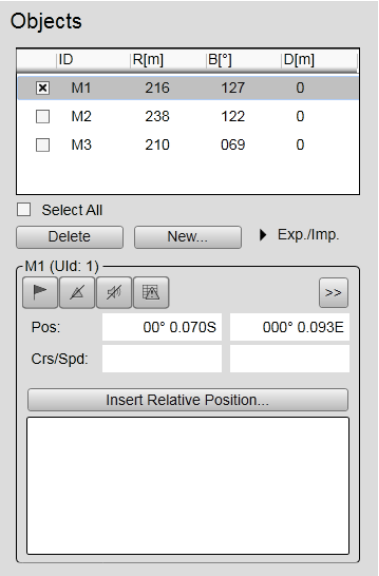
The **Objects** menu offers basic functionality related to markers that you have defined in the SN90 presentation.

How to open

Click once on the icon under the **Main** menu to open the **Objects** menu.

Click one more time on the icon to close the menu.

Description



- **Marker list**

  The table at the top of the **Objects** menu displays all the current markers.

  To select one or several markers, click the left rectangle(s).

  Each marker is listed with the following information:

  a **ID**: This is a unique identification. Each marker is numbered sequentially. A "P" after the identification means that has been selected as a "priority target".

  b **R**: Range from the vessel

  c **B**: True bearing

  d **D**: Depth relative to surface

- **Select All**

  Click to select all the current markers.

- **Delete**

  Click to delete the currently selected marker(s).

- **New**

  Click to add a new marker. The **New Marker** dialog box is opened to retrieve the information.

- **Export/Import**

  A small menu allows you to save and retrieve markers from a file. In order to export markers, you must first select the relevant markers in the list.

  – **To External**: This option allows you to export marker information to an external system.

  – **To File**: This option allows you to save the marker information to a file on the Processor Unit. The file location and file format are predefined.

  – **From File**: This option allows you to retrieve marker information from a file. A small dialog box allows you to select which file to import.

- **Priority Target**

  Click the button to make the currently selected object the priority object.

- **Disable Alarm**

  Target behaviour may generate alarms. Click the button to disable alarms for the currently selected marker.

- **Suppress Alarm Audio**

  When a target behaviour generates an alarm, an audio signal will be sounded. Click to disable this audible signal for the currently selected target marker.

- **Shortcut to Alarm History**

  Click this button to open the **Messages** dialog box.

- **Position**

  These two text fields display the geographical position of the currently selected target.

- **Course/Speed**

  These fields display the course and speed of the currently selected target.

- **Insert Relative Position**

  Click to display the priority target's position relative to your vessel.

Related topics

Menu system, page 43