Simrad SU90

SIMRAD

Software Release Note 3.1.5

Introduction

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

- **Product**: SU90
- **Software version**: 3.1.5

This software controls all functionality in the Simrad SU90. 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 SU90 release.

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.

The following specific changes have been made.

Reducing bottom and surface reverberation with the RCG (Reverberation Controlled Gain) function

The RCG (Reverberation Controlled Gain) filter has been improved.

−	RCG 4	+
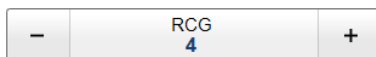
The functionality offered by this filter has been changed to reflect the settings in the old user interface. We hope this will make the SU90 easier to use. If you are used to the "old" settings you will find that the new settings are more aligned now.

The numerical settings do not express an increasing filter strength. They represent specific settings using different algorithms.

We recommend that the reverberation controlled gain is active all the time, but be careful in the vertical presentation. The filter works best on small schools. This rough guide to the settings can be used as a starting point for own experiments.

1   Use for scattered fish.

2   Use for schools.

3   Use for schools with higher density. This setting can also be used in horizontal views to detect schools close to the bottom.

4   Use for scattered fish located close to the bottom. This setting uses a slightly different algorithm than the other scattered fish settings.

5   Use for scattered fish located close to the bottom. This setting uses a slightly different algorithm than the other scattered fish settings.

6   Use for scattered fish. This setting uses a slightly different algorithm than the other scattered fish settings.

7   Use for scattered fish. This setting uses an algorithm dedicated for higher bandwidth.

8   Use for schools. This setting uses an algorithm dedicated for higher bandwidth.

9   Use for schools. This setting uses an algorithm dedicated for higher bandwidth.

You may find it useful to return to default factory settings and use those settings to try the RCG functionality.

The filters in the SU90 are implemented in "series". The reverberation controlled gain adjustment is made late in the sequence, so any changes to the preceding filters may have an effect on how it works.

More information: Reducing bottom and surface reverberation with the RCG (Reverberation Controlled Gain) function, page 3

Automatic adjustment of the echo presentations on wide display monitors

Wide displays are becoming more and more popular. The disadvantage is that it is not easy to present information that is basically square on a rectangular and oblong screen surface. If you choose to hide the menu system you may have a lot of unused screen space on either side of the echo presentation.

The **Longest Side Scaling** feature is designed to take full advantage of the free space on a wide screen. The presentation is scaled up to fit the screen width. However, scaling up the views to an oblong shape means that a part of the presentation must be sacrificed. The echoes from behind you own vessel are therefore removed.

The new function is provided on the **Off Centre** page in the **Display Options** dialog box.

More information: Automatic adjustment of the echo presentations on wide display monitors, page 4

HFM transmissions for LPT transceiver boards disabled

In software release 3.1.2 we allowed you to upgrade the **Pulse Type** function to include Hyperbolic FM (HFM). Unfortunately this option induced an unintended bug, as changes to the configuration where not saved. This option has been discontinued and must be removed.

This software update will not fix the bug. Manual actions must be taken. If you have implemented this feature the file must be deleted.

More information: Changing the setup files to disable HFM transmissions, page 5

The noise filter has been improved

Be careful if using *Medium strong* or *Strong*. These levels are very strong.

More information: Reducing propeller noise and interference with the Noise Filter, page 5

New presentation mode

The new presentation mode *Dual Vertical North Up* is added. The mode contains two vertical views and one omni view.

To obtain the default setup for this presentation mode you must load the factory default settings once. Until that is done the view is placed in a random order. You can of course use the **Docking Views** function later to place the views wherever you wish.

Specific bug fixes

- The NMEACUR interface now handles relative direction correctly. In the previous releases the values were always handled as true.

- Fixed rare error which caused reduced performance when only one ping was transmitted.
- The panel backlight has been modified. In earlier versions the backlight was tuned off if multiple sonars were connected to one panel. This is now fixed, but you still have to set the backlight individually for each sonar.

Do I need to upgrade?

This is an important update. The introduction of new functionality and improvement in the existing functionality will add value to your installation.

We recommend that all users update their software.

Software licenses

The Simrad SU90 is not a licensed product.

Software installation

When a new SU90 software version is released, it must be installed on your Processor Unit. Contact your local dealer, or a Simrad distributor, to have the new software version installed.

A dedicated wizard is used to install the SU90 software. Installation of additional operating system components may be required. These are installed automatically. Observe the information offered in the wizard.

If you have a preliminary ("Beta") software version installed, it must be removed before you can update. Use the operating system functionality to remove the old software version.

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

- https://www.simrad.com/sdc

Reducing bottom and surface reverberation with the RCG (Reverberation Controlled Gain) function

When you transmit an acoustic pulse into the water to search for a target, echoes will also be returned from any other objects in the beam. The energy reflected from these "unwanted" objects is referred to as *reverberation*. Reverberation is often a limiting factor, especially if you are searching for smaller targets.

Context

Reverberation is often regarded as noise. There are several types of reverberation.

- **Volume reverberation**: The volume reverberation is caused by minute plankton and air-bubbles in the water. This reverberation has often daily cycles in intensity.
- **Surface reverberation**: The surface reverberation depends on the weather condition and the waves.
- **Bottom reverberation**: The bottom reverberation depends on the roughness and physical properties of the sea bottom.

The **RCG** (Reverberation Controlled Gain) controls the receiver processing. The algorithm handles each receiver beam individually. The filter reduces the unwanted echoes from the bottom and from the sea surface. This enhances the visibility of schools.

Note

The numerical settings do not express an increasing filter strength. They represent specific settings using different algorithms.

The algorithms in the filter may interpret scattered fish as reverberation. Use reverberation controlled gain carefully if you wish to detect scattered fish.

We recommend that the reverberation controlled gain is active all the time, but be careful in the vertical presentation.The filter works best on small schools.

This rough guide to the settings can be used as a starting point for own experiments.

1   Use for scattered fish.

2   Use for schools.

3   Use for schools with higher density. This setting can also be used in horizontal views to detect schools close to the bottom.

4   Use for scattered fish located close to the bottom. This setting uses a slightly different algorithm than the other scattered fish settings.

5   Use for scattered fish located close to the bottom. This setting uses a slightly different algorithm than the other scattered fish settings.

6   Use for scattered fish. This setting uses a slightly different algorithm than the other scattered fish settings.

7   Use for scattered fish. This setting uses an algorithm dedicated for higher bandwidth.

8   Use for schools. This setting uses an algorithm dedicated for higher bandwidth.

9   Use for schools. This setting uses an algorithm dedicated for higher bandwidth.

The filters in the SU90 are implemented in "series". The reverberation controlled gain adjustment is made late in the sequence, so any changes to the preceding filters may have an effect on how it works.

Procedure

1   Click in any 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.

2   Open the **Active** menu.

3   Select **RCG** (Reverberation Controlled Gain).

4   Select a value from the options provided.

The choice you make is by default only applied to the currently selected (active) view.

## Automatic adjustment of the echo presentations on wide display monitors

Wide displays are becoming more and more popular. The disadvantage is that it is not easy to present information that is basically square on a rectangular and oblong screen surface. If you choose to hide the menu system you may have a lot of unused screen space on either side of the echo presentation.

Context

The **Longest Side Scaling** feature is designed to take full advantage of the free space on a wide screen. The presentation is scaled up to fit the screen width. However, scaling up the views to an oblong shape means that a part of the presentation must be sacrificed. The echoes from behind you own vessel are therefore removed.

Procedure

1   Open the **Display** menu.

2   Select **Display Options** to open the dialog box.
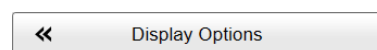
3   Select **Off Centre** to open the page.

4   Enable **Longest Side Scaling**.

5   Select **OK** to save the selected setting and close the dialog box.

Changing the setup files to disable HFM transmissions

In software release 3.1.2 we allowed you to upgrade the **Pulse Type** function to include Hyperbolic FM (HFM). Unfortunately this option induced an unintended bug, as changes to the configuration where not saved. This option has been discontinued and must be removed.

Prerequisites

It is assumed that you are familiar with the Microsoft® operating system utilities for file handling.

Context

To find out which transceiver boards your transceiver is fitted with, see the **Transceiver** page in the **BITE** (Built-In Test Equipment) dialog box.

Procedure

1   Select **Power Off** on the top bar.

2   In the **Power Off** dialog box, select **Exit to Operating System** to close the SU90 program.

3   From the Windows® **Start** button, right-click to open Windows Explorer.

4   Navigate to the following folder: `C:\Pro-gramData\Simrad\SU90\Installation`

5   Delete the following file: `HFMforLPT32.xml`

6   Close Windows Explorer.

7   On the Processor Unit desktop, double-click the SU90 icon to start the program.

Reducing propeller noise and interference with the Noise Filter

Unless you synchronize the transmissions from your other hydroacoustic systems you may have an issue with interference. Even with synchronization activated the noise from other nearby vessels may cause noise.

Context

The **Noise Filter** is used to minimize the interference from other acoustics systems (sonars and echo sounders) on your own and/or other vessels. The filter also suppresses noise from your propellers, and from other similar noise sources. The **Noise Filter** is very effective if you are bothered by strong noise or interference, especially from your own vessel, or even from other vessels operating near you.

Tip _____

Use weak filtering - or turn the filter off - if you have strong echoes on short ranges. The filter may then be too powerful, and distort the echo presentation.
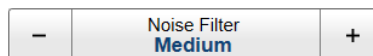
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The filters in the SU90 are implemented in "series". The noise filtering is done early in the receiver process.

Procedure

1   Click in any view to make it active.

     The active view is identified with a thicker border.

2   Open the **Active** menu.

3   Select **Noise Filter**.

4   Select a value from the options provided.

Automatic adjustment of the range when the vessel symbol is moved off centre

The **Set New Ship Centre** function on the shortcut menu moves the ship symbol away from the centre of the view. Place the cursor anywhere in the view, right-click and select **Set New Ship Centre**. The function moves the vessel symbol to the selected position.

Context

When the vessel symbol is moved away from the centre of the view, more space is made available for the echo presentations. If you keep the same range setting, this added space causes a "zoom" effect. The distance from the vessel to the outer edge of the search area is the same, but it is "stretched" out.

You may not want this to happen.

If you have moved the vessel symbol to increase the range you must specify this in the display settings.

Tip ───────────────────────────

*The 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. **Off Centre** is one of the functions that can be assigned. 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.*

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Procedure

1   Open the **Display** menu.

2   Select **Display Options** to open the dialog box.

«   Display Options

3   Select **Off Centre** to open the page.

4   Select the required setting.

- *Keep Display Range*: The range from the vessel symbol to the outer edge of the search area is automatically adjusted in order to keep the scale of the presentation and avoid the "zoom" effect. The value on the **Main** menu is changed accordingly.

- *Keep Sonar Range*: The currently selected range value on the **Main** menu is kept. The distance from the vessel to the outer edge of the search area is the same, but it is "stretched" out.

5   Select **OK** to save the selected setting and close the dialog box.

Minimum display requirements

Unless specifically ordered, the SU90 is not provided with a display. The display must then be purchased locally.

You can use one or two displays on your SU90 Processor Unit depending on personal and/or operational preferences.

Note ───────────────────────────

Make sure that the chosen display meets the SU90 requirements. 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.

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The minimum technical requirements for the display are:

- **Resolution**: 1280 x 1024 pixels (Minimum)

  The visual quality of the SU90 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 SU90 software supports 16:9 and 16:10 displays.