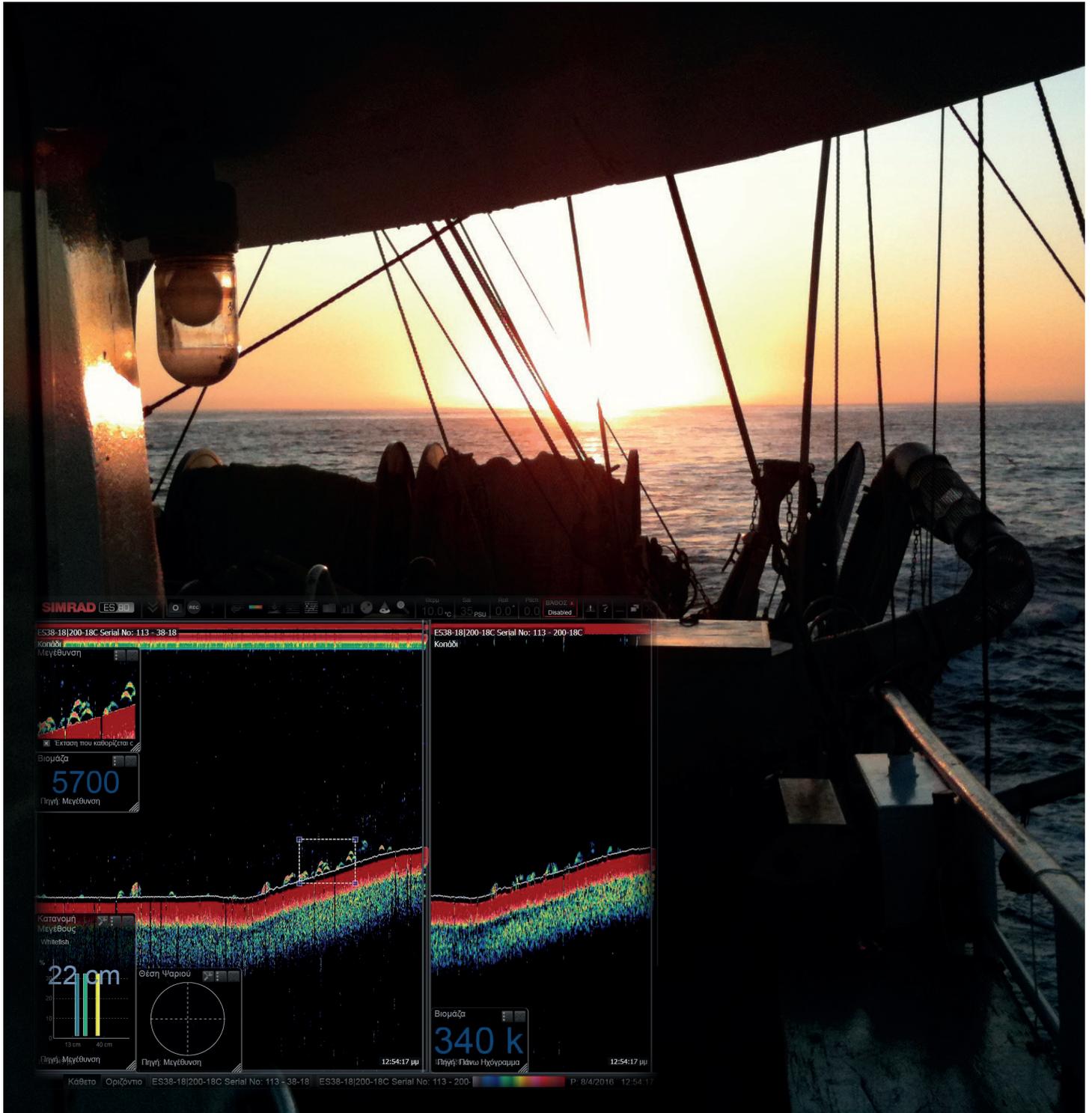


Operator manual

Simrad ES80

Wideband fish finding echo sounder





Simrad ES80
Wideband fish finding echo sounder
Operator Manual
Release 1.2.x

The purpose of this manual is to provide the descriptions and procedures required to allow for safe and efficient use of the Simrad ES80. The manual does not contained detailed information about functions, dialog boxes and parameters.

Caution _____

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

For more detailed information, consult the ES80 *Reference Manual*. All information related to ES80 operation is also available in the context sensitive on-line help.

Document information

- **Product:** Simrad ES80
- **Document:** Operator Manual
- **Document part number:** 429374
- **Document ISBN number:** —
- **Revision:** A
- **Date of issue:** 21 September 2017

Copyright

The information contained in this document remains the sole property of Kongsberg Maritime AS. No part of this document may be copied or reproduced in any form or by any means, and the information contained within it is not to be communicated to a third party, without the prior written consent of Kongsberg Maritime AS.

Warning

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

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

Disclaimer

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

Support information

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

Table of contents

ABOUT THIS MANUAL	9
SIMRAD ES80	11
Important.....	12
System description.....	13
System diagram.....	16
Main system units	17
Display description.....	17
Processor Unit description.....	18
Ethernet switch description	19
Wideband Transceiver (WBT) description.....	19
Transducers.....	20
Network security.....	21
Support information.....	22
GETTING STARTED	24
Starting normal operation	25
Powering up the ES80	25
Getting to know the user interface	26
Checking transceiver and transducer settings	28
Setting operational mode to <i>Normal</i> to start pinging	29
Verifying that the bottom is correctly detected	30
Checking and/or editing the transceiver parameters	31
Powering off the ES80.....	32
Basic operation.....	33
Introduction to the basic procedures	33
Selecting the language displayed in the menus and dialog boxes.....	34
Selecting which echogram type to use in the ES80 presentation.....	34
Adjusting the gain (echo sensitivity).....	36
Choosing the depth range and the start depth for the echograms.....	37
Choosing the colours used to present the echograms.....	39
Recording echo data	40
Opening the context sensitive on-line help	41
User interface introduction	43
ES80 user interface familiarisation	43
Top bar description.....	45
Information panes.....	46
Menu system.....	48
Bottom bar description	49

Echogram views	50
Setting up the ES80 Wideband fish finding echo sounder for the first time	52
Setting up summary	52
Adjusting the screen resolution	54
Installing the ES80 operational software.....	55
Defining the IP address on the Processor Unit network adapter for communication with the Wideband Transceiver (WBT).....	56
Powering up the ES80 to <i>Passive</i> mode.....	57
Obtaining and installing the software license.....	58
Installing one or more transducers	60
Installing transceiver channels	62
Defining the serial and Ethernet (LAN) port parameters	64
Setting up the input from a navigation system (GPS).....	65
Context sensitive on-line help.....	67
OPERATIONAL PROCEDURES	69
Power on/off procedures	70
Powering up the ES80	70
Powering off the ES80.....	71
Choosing operational mode and key transmit parameters	73
Selecting <i>Normal</i> operational mode	73
Selecting <i>Inactive</i> operational mode	74
Selecting <i>Replay</i> operational mode	75
Verifying that the bottom is correctly detected	76
Defining the ping (transmission) modes.....	77
Transmitting single pings	79
Transmitting with fixed time intervals	79
Verifying or changing the environmental parameters	80
Defining the sound speed close to the transducer.....	81
Opening the context sensitive on-line help	82
Controlling the gain and range settings	83
Adjusting the gain (echo sensitivity).....	83
Adjusting the TVG (Time Variable Gain) setting	85
Choosing Range and Start Range values in a surface related echogram	86
Choosing Range and Start Range values in a bottom related echogram.....	87
Recording and replaying raw echo data.....	89
Defining the file and folder settings for data recording.....	89
Recording echo data	90
Selecting <i>Replay</i> operational mode	92
Choosing which echo data file(s) to replay	93
Accessing the echo data files to delete, move or copy them	94

Saving and recalling screen captures	95
Saving an echogram screen capture image.....	95
Recalling single echogram screen capture images	96
Accessing the screen capture images to delete, move or copy them.....	96
Setting up the echogram presentation	98
Selecting which echogram type to use	98
Selecting echogram views on the bottom bar.....	100
Selecting the echogram presentation layout.....	101
Changing the size of the echogram views	102
Defining the ping (transmission) modes.....	102
Removing noise and false echoes from the echogram	104
Choosing the colours used to present the echograms.....	105
Adjusting the TVG (Time Variable Gain) setting	106
Adjusting the TVG in the Echogram dialog box.....	107
Selecting the horizontal scale in the echograms.....	109
Adding scale labels to the echograms	110
Enhancing the bottom contour in the echograms	111
Adding vertical marker lines to the echogram	112
Adding horizontal depth lines to the echograms.....	113
Adding a variable depth line to the echogram.....	114
Adding automatic trawl lines to the echogram presentation	115
Adding manual trawl lines to the echogram presentation	116
Adding a single manual annotation to the echogram	116
Adding annotations to the echograms	117
Investigating the sub-bottom conditions	118
Using the information panes to collect data from the echoes	120
Retrieving the latest echogram history.....	120
Disabling the automatic echogram history recording.....	121
Changing the colour scale in the ES80 presentations.....	122
Opening the Depth information pane to read the current depth.....	124
Investigating the biomass	125
Changing the calculation parameters for the Biomass information pane.....	126
Investigating the echo strength to determine the species in the school.....	128
Locating the position of single fish in the beam.....	129
Locating the position of single fish in the beam.....	131
Investigating the bottom characteristics.....	132
Selecting fish species and changing their size to improve the size distribution information	133
Changing the calculation parameters for the Size Distribution information pane.....	134

Using the Zoom information pane to study details in the echogram.....	134
Defining settings related to user preferences and individual customizing.....	137
Selecting menu language.....	137
Reducing the light emitted from the display presentation.....	138
Increasing the visibility of the information panes.....	139
Selecting the navigational information to appear on the top bar.....	139
Selecting which tooltips to appear in the user interface.....	140
Enabling Coordinated Universal Time (UTC) time on the bottom bar.....	140
Changing the colour palette ("skin") used in the ES80 presentations.....	141
Choosing the colours used to present the echograms.....	142
Selecting measurement units.....	143
Placing echogram channels in separate windows on multiple displays.....	144
Saving, retrieving and handling user settings.....	145
Saving the current user settings.....	145
Choosing previously saved user settings.....	146
Renaming existing user settings.....	147
Deleting user settings that are no longer used.....	148
Choosing ES80 factory default settings.....	148
Adjusting the transceiver parameters.....	150
Selecting <i>Passive</i> transceiver mode.....	150
Adjusting the output power.....	151
Adjusting the pulse duration.....	151
Defining the frequency sweep (chirp) within each transmission.....	152
Defining the pulse type for the ES80 transmissions.....	153
Interfacing peripheral equipment.....	154
Installing navigation and other sensors.....	154
Defining the serial and Ethernet (LAN) port parameters.....	155
Setting up the input from a navigation system (GPS).....	157
Configuring the sensor interface.....	159
Setting up a serial or LAN (Ethernet) port for annotation input.....	160
Connecting a catch monitoring system to a serial or LAN (Ethernet) port.....	162
Connecting a trawl system to a serial or LAN (Ethernet) port.....	164
Setting up the input from a motion reference unit (MRU).....	166
Setting up depth output to an external system.....	169
Exporting sensor data to a peripheral system.....	171
Setting up the ES80 in a synchronized system.....	173
System setup and software installation procedures.....	176
Defining the IP address on the Processor Unit network adapter for communication with the Wideband Transceiver (WBT).....	176
Checking the current software version.....	177

Installing the ES80 operational software.....	178
Obtaining and installing the software license.....	179
Moving the software license from one Processor Unit to another	181
Upgrading the ES80 operational software.....	182
Removing the ES80 operational software	183
Upgrading the software on the Wideband Transceiver (WBT).....	184
Installing one or more transducers	186
Installing transceiver channels	188
Installing GPT transceiver channels.....	190
Disconnecting transceiver channels	193
Maintaining the ES80	195
Updating the online help file	195
Adding an online help file in a new language	196
Accessing and retrieving message log files	198
Checking the transducer by means of the BITE functionality	198
Inspecting and cleaning the transducer face.....	199
Painting the transducer face	201
Rules for transducer handling.....	202
Approved anti-fouling paints.....	204
USER INTERFACE.....	205
ES80 user interface familiarisation.....	206
Top bar	208
Top bar overview	208
Logo and product name	209
Menu button	209
Screen Capture button description	210
Record indicator description	211
Event button description.....	212
Information panes overview	212
Navigational information	215
Messages button description	220
Help button description	220
Operating system button descriptions	221
Information panes	222
History information pane description.....	222
Colour Scale information pane description	223
Depth information pane description	225
Biomass information pane description	227
School Response information pane description	229
Bottom Hardness information pane description.....	231

Size Distribution information pane description.....	233
Fish Position information pane description.....	235
Echo Position information pane description	237
Zoom information pane description	239
Echogram views.....	241
About the echogram views	241
Surface echogram description	243
Bottom echogram description	245
Pelagic echogram description.....	248
Trawl echogram description.....	250
Echogram lines and markers.....	254
Annotation markers description	254
Biomass Line description	255
Bottom Line description.....	256
Hardness Line description	257
Label markers description	259
Range Other Line description.....	260
Scale Lines description.....	261
Trawl Line description	262
Variable Depth Line description.....	263
Vertical Tick description.....	264
White Line description	265
The ES80 menu system.....	266
Bottom bar description.....	267
Replay bar description	268
Screen capture browser description	270
MENU SYSTEM	271
About the menus and menu buttons.....	271
Using the “smart” menu buttons	272
Main menu	274
Operation menu.....	275
Display menu	276
Setup menu	278
Active menu	282
Extras menu	284

About this manual

The purpose of this manual is to provide the descriptions and procedures required to allow for safe and efficient use of the Simrad ES80. The manual does not contain detailed information about functions, dialog boxes and parameters. For more detailed information, consult the *ES80 Reference Manual*. All information related to ES80 operation is also available in the context sensitive on-line help.

Target audience

This manual is intended for all regular users of the ES80. Due to the nature of the descriptions and the level of detail provided by this manual, it is well suited for those who use the ES80 on a daily basis, and have access to expert users for advice.

We assume that you are familiar with the basic acoustic principles of sound in water. We also expect that you have some experience with echo sounder and/or sonar operation.

Use the Help button!

The ES80 is provided with an extensive context sensitive on-line help system. All information of the *ES80 Reference manual* is also provided in the on-line help. To open the context sensitive on-line help, select **Help** on the top bar, or the **Help** button in one of the dialog boxes.

Online information

All end user manuals provided for operation and installation of your Simrad ES80 can be downloaded from our website.

- <https://www.simrad.com>

Our website also provides information about other Simrad products.

License information

The ES80 is a licensed product. In order to obtain a license, contact your local dealer.

Software version

This ES80 Operator Manual complies to software version 1.2.x.

Registered trademarks

Observe the registered trademarks that apply.

Simrad®, SIMRAD® and the Simrad® logo are either registered trademarks, or trademarks of Kongsberg Maritime AS in Norway and other countries.

Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

We want your feedback

We want to make the ES80 as good as possible. We also want our end user documentation to be comprehensive and appropriate. You can help. Please provide comments, suggestions or constructive criticism to any of our support offices.

Simrad ES80

Topics

[Important, page 12](#)

[System description, page 13](#)

[System diagram, page 16](#)

[Main system units, page 17](#)

[Network security, page 21](#)

[Support information, page 22](#)

Important

The ES80 is an advanced product. As with most other advanced instruments, there are a few important things that you must know.

Before you power up the ES80

Before you power up the ES80, make sure that the transducer is submerged in water!

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

When the ES80 is not used

When you do not use the ES80, switch off the display and the Processor Unit. If you know that you will not use the ES80 for a long time, we recommend that you also switch off the transceiver(s).

When you are docking your vessel

You must never power up the ES80 when the ship is in dry dock. The transducer may be damaged if it transmits in open air. To prevent inadvertent use of the ES80, pull out the mains plug on the Processor Unit whenever your vessel is in dry dock. Additional precautionary measures should be considered.

If something breaks down

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

- <https://www.simrad.com>

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

When you wish to switch off the ES80

You must NEVER switch off the ES80 by means of the on/off switch on the Processor Unit. You must ALWAYS click the **Exit** button on the top bar.

Note

If you power down the ES80 by means of the on/off switch on the Processor Unit you may damage the software program and the interface settings used to communicate with external devices.

Rules for transducer handling

A transducer must always be handled as a delicate item. Wrongful actions may damage the transducer beyond repair. Observe these transducer handling 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 face.
- **Do not** lift the transducer by the cable.
- **Do not** step on the transducer cable.
- **Do not** damage the transducer cable, avoid sharp objects.

Related topics

[Support information, page 22](#)

System description

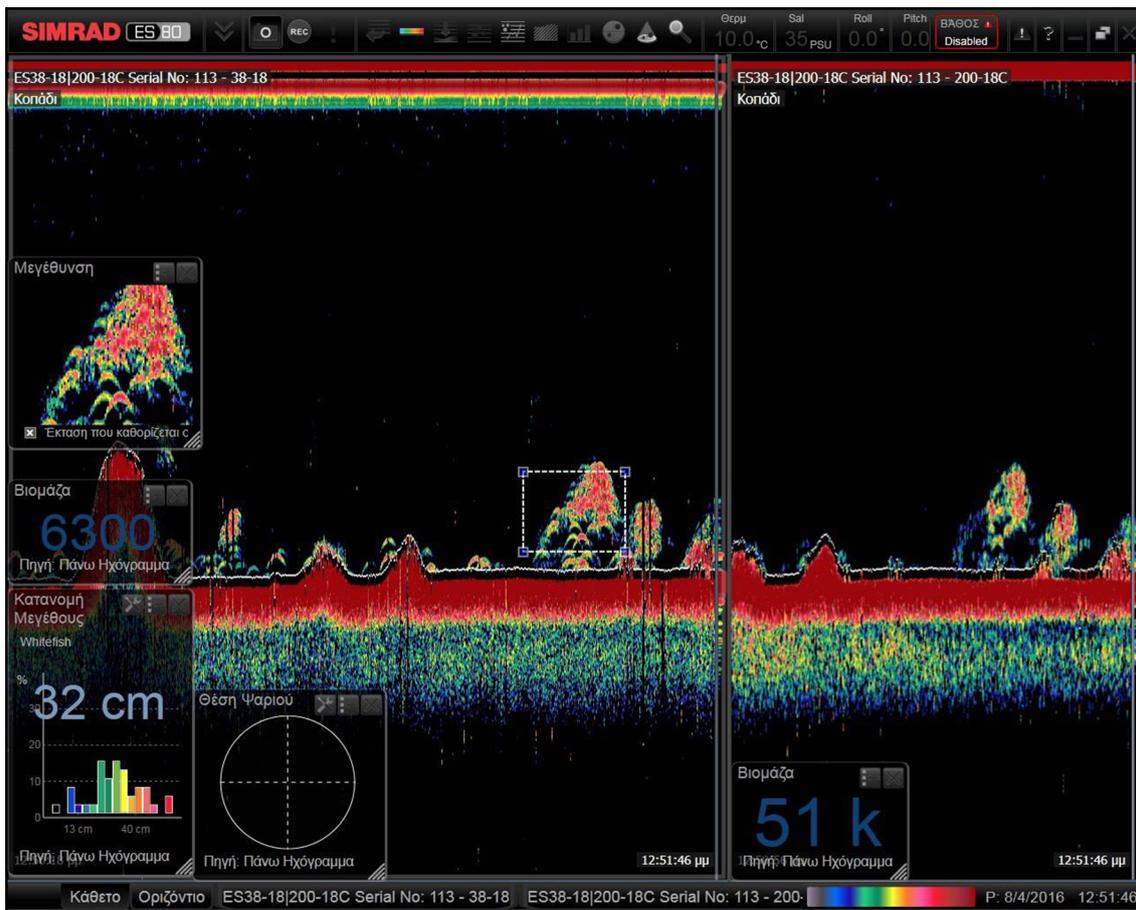
The Simrad ES80 is the most modern “high end” split beam echo sounder in the professional fishery market. Based on more than 60 years of research and development in close collaboration with fishermen and leading marine scientists this wide band echo sounder system has succeeded the famous ES60 and ES70 systems.

Simrad has manufactured fish finders for more than 65 years, and we have more than 25 years of experience with split beam technology. Our first split beam fish finder, operating on 38 kHz, came on the market in 1984. It was quickly followed by a 70 kHz system. Today, we can offer a wide range of operational frequencies from 18 kHz used for detecting deep water species, up to 333 kHz used for find and measure plankton.

The Simrad ES80 is the fifth generation professional split beam fish finder for the world wide fishing community. The latest innovations in computer and signal processing technology are used to create a sophisticated, but also intuitive, echo sounder. It is designed to satisfy the increasing need from our demanding customers: "Top performance at any depth and easy to operate".

The Simrad ES80 is a wideband echo sounder. It can operate with operational frequencies ranging from 10 to 500 kHz. With a suitable transducer, the ES80 can use frequency sweeps ("chirps") across a range of frequencies. This gives you increased resolution on the longer ranges.

Originally designed for out scientific sounders, the ES80 can also offer the "target response" (TS) curve. This function makes it easier to determine which species you are looking at.



This screen capture shows the Simrad ES80 set up for a close inspection of fish close to the bottom. A small school is placed in the zoom window. The capture is kindly provided by Aegean Electronics, Greece.

The echo sounder system is modular, and you can assemble any combinations of transceivers and transducers to fit your purposes. In a typical configuration, the ES80 comprises:

- A Display
- B One Processor Unit
- C One or more transceiver units
- D An Ethernet switch (if more than one transceiver is used)
- E One or more single- or split beam transducers

The ES80 can work with the General Purpose Transceiver (GPT), the Wide Band Transceiver (WBT) and the EK15 Transceiver.

The ES80 can work with several transceivers.

Related topics

[System diagram, page 16](#)

[Support information, page 22](#)

System diagram

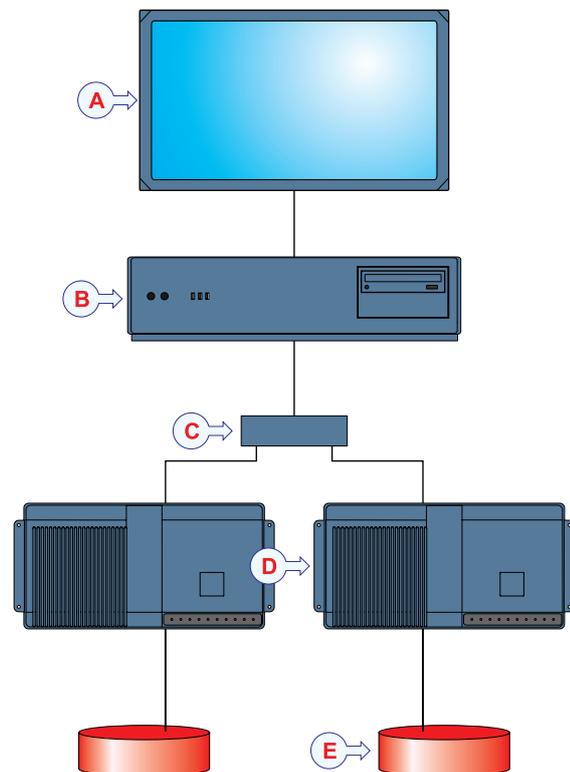
The system diagram identifies the main components of a basic ES80 system. Only the main connections between the units are shown. Detailed interface capabilities and power cables are not shown.

The basic Simrad ES80 Wideband fish finding echo sounder consists of one transducer, one Wideband Transceiver (WBT) and one Processor Unit (computer). Additional Wideband Transceiver (WBT)s and transducers can be added to meet your operational and functional requirements.

In this publication, the computer is referred to as the Processor Unit.

Unless otherwise specified in a contract, the display and the Ethernet switch are not included in the standard delivery from Kongsberg Maritime. These are commercial items that can be purchased locally.

- A** *Display*
- B** *Processor Unit*
- C** *Ethernet switch*
- D** *Wideband Transceiver (WBT)*
- E** *Transducer*



Related topics

[System description, page 13](#)

[Display description, page 17](#)

[Processor Unit description, page 18](#)

[Ethernet switch description, page 19](#)

[Wideband Transceiver \(WBT\) description, page 19](#)

[Transducers, page 20](#)

[Support information, page 22](#)

Main system units

Topics

[Display description, page 17](#)

[Processor Unit description, page 18](#)

[Ethernet switch description, page 19](#)

[Wideband Transceiver \(WBT\) description, page 19](#)

[Transducers, page 20](#)

Display description

A display is a required part of the ES80 Wideband fish finding echo sounder. For best readability, the display must be located so that it is protected from glare, and with the correct height and angle.

Any commercial display can be used with the ES80 Wideband fish finding echo sounder, provided that the display meets the minimum requirements.

You may wish to see many echogram channels simultaneously. A large display with high resolution is then useful. The ES80 software supports all display sizes. The visual quality of the ES80 presentation depends on the quality of your graphic adapter and display.

Note

The display is not a standard part of the ES80 delivery. This is a commercial item that can be purchased locally.

The chosen display must be designed for maritime use, and it must meet the minimum performance specifications. You must also make sure that the chosen display supports the video formats provided by the Processor Unit. Kongsberg Maritime may provide a suitable display.

Tip

Many computers offer two video outputs. Two displays may therefore be used to see the ES80 presentations. You may place the two displays next to each other. You may also choose to place the second display at an other location on the vessel.

*The **Add Floating Window** dialog box makes it possible to grab a complete echogram presentation for a chosen channel, and place it in a separate window. To move a chosen echogram to a separate window, simply choose the channel (identified with its transducer), and click **Ok**. The new window contains the chosen echogram channel. You can move this window to any display using the functionality provided by the operating system. To close the window, click the "X" in its top right corner.*

Related topics

[System description, page 13](#)

[System diagram, page 16](#)

Processor Unit description

The Processor Unit is the computer that controls the ES80 system. It is a vital part of the ES80 Wideband fish finding echo sounder. It contains the operational software, and offers the user interface that allows you to control the ES80. It also controls the interface to peripheral devices. In this publication, the computer is referred to as the Processor Unit.

The computer must comply to the requirement specifications provided by Microsoft for their operating systems. It must also provide the necessary interface facilities (serial lines and Ethernet connections) that your ES80 will need to communicate with peripheral systems. The computer must be designed for rugged use, and the construction must be able to withstand the vibrations and movements of a vessel. The operating system must be Microsoft® Windows 10 (64-bit).

A high quality Ethernet adapter is required. If you wish to connect the Processor Unit to the ship's network, you will need two Ethernet adapters.

The Processor Unit is normally mounted on the bridge or in a scientific laboratory.

Note

*The Ethernet adapter communicating with the Wideband Transceiver (WBT) must offer a **Receive Buffers** function. This parameter must be set to its maximum value if more than one Wideband Transceiver (WBT) is used.*

The Processor Unit is not a standard part of the ES80 delivery. A suitable computer may be provided with the ES80. The Processor Unit is designed for rugged maritime use. It has been customized by Kongsberg Maritime. Except from the fans, it contains no moving parts. The computer is based on a commercial design, but the software and hardware has been specified by Kongsberg Maritime to suit the ES80 requirements. It is set up with all necessary software. Consult your local dealer or agent for more information.

The ES80 design allows you to use two displays. This may be a practical solution. You may place the two displays next to each other. You may also choose to place the second display at an other location on the vessel.

Related topics

[System description, page 13](#)

[System diagram, page 16](#)

Ethernet switch description

A high capacity Ethernet switch is a key component of the ES80 system.

If you use more than one Wideband Transceiver (WBT), a high capacity Ethernet switch is required. The Ethernet switch is used to connect each Wideband Transceiver (WBT) to the Processor Unit.

Note

Make sure that your selected switch has a large bandwidth capacity. Minimum 1 Gb (1000BASE-T) is required. You must also make sure that all Ethernet cables are type Cat 5e or better. A slower switch - or low quality cables – will decrease the operational performance of the ES80.

1000BASE-T (also known as IEEE 802.3ab) is a standard for gigabit Ethernet over copper wiring. Each 1000BASE-T network segment can be a maximum length of 100 meters (330 feet), and must use Category 5 cable or better (including Cat 5e and Cat 6).

https://en.wikipedia.org/wiki/Gigabit_Ethernet (January 2016)

Related topics

[System description, page 13](#)

[System diagram, page 16](#)

Wideband Transceiver (WBT) description

The ES80 Wideband Transceiver (WBT) is provided to transmit the acoustic energy into the water. To do this, the transceiver computes and generates the electric signals sent to the transducer to form a transmission - a 'ping'. After each transmission, it will receive the echoes from the targets in the water column and/or the seabed. These are filtered and amplified, and then converted to digital format.

The Wide Band Transceiver (WBT) comprises a rugged box providing all necessary transmitter and receiver electronics. The receiver is designed for low noise, and it can handle input signals spanning a very large instantaneous dynamic amplitude range. All targets are correctly measured and displayed. The transceiver operates within a large frequency band, and supports single frequencies, frequency sweep (chirp) and user defined wave forms.



The Wide Band Transceiver (WBT) is designed for applications where performance is the top priority. It has four 500 W channels that can either work independently with single beam transducers, or together with a split beam transducer. The design is optimized for applications where power consumption and physical size is not critical.

A high quality Ethernet cable connects the Wide Band Transceiver (WBT) to the Processor Unit. The distance between the Processor Unit and the transceiver can be extended up to maximum 70 meters. If a longer cable is required, cut it in half, and insert an Ethernet switch to provide buffer amplification.

Note

If more than one Wide Band Transceiver (WBT) is used, a small high capacity Ethernet switch is required to connect the transceivers to the Processor Unit.

The Wide Band Transceiver (WBT) requires an external power supply offering 12 to 15 Vdc, minimum 5 A. A suitable power supply is provided with the delivery.

Tip

The ES80 also supports the use of General Purpose Transceiver (GPT) transceivers. In order to use General Purpose Transceiver (GPT) transceivers, minimum one Wide Band Transceiver (WBT) must be installed first to handle the software license for the ES80 system.

Related topics

[System description, page 13](#)

[System diagram, page 16](#)

Transducers

The ES80 Wideband fish finding echo sounder can be used with all our single-beam and split-beam transducers.

Kongsberg Maritime can provide a large range of efficient and accurate Simrad transducers for the ES80 Wideband fish finding echo sounder. A wide range of operational frequencies is available.

Simrad transducers are designed to work optimally across a large bandwidth and in demanding environments. For our fish finding echo sounders, we divide the features of the transducers into four main categories; single-beam, split-beam, wideband and depth-rated. Several transducers fit more than one category.

For more information about our transducers, see our website.

- <https://www.simrad.com>



Related topics[System description, page 13](#)[System diagram, page 16](#)

Network security

If a ES80 system is connected to a local area network, data security is important.

Equipment manufactured by Kongsberg Maritime are frequently connected to the vessel's local area network (LAN). When you connect a computer to a local area network you will always expose the data on that computer. All other computers connected to the same network may be able to access your data. Several threats may immediately occur:

- Remote computers can read the data.
- Remote computers can change the data.
- Remote computers can change the behaviour of the computer, for example by installing unwanted software.

Usually, two parameters are used to define the threat level:

- 1 The likelihood that any remote connection will do any of the above.
- 2 The damage done if a remote connection succeeds doing this.

Kongsberg Maritime has no information regarding the complete system installation on any vessel. Systems provided by Kongsberg Maritime are regarded as stand-alone offline systems. They are stand-alone even though they may be connected to a network for sensor interfaces and/or data distribution.

Note

No network safety applications are installed on any Kongsberg Maritime computers. The computers are thus not protected against viruses, malware or unintentional access from external users.

Securing the ES80 system itself has no meaning unless there is a policy in place that secures all computers in the network. This policy must include physical access by trained and trusted users. The customer/end user of the ES80 system will always be in charge of defining and implementing a security policy, and providing the relevant network security applications.

Note

Kongsberg Maritime will not accept any responsibility for errors and/or damages caused by unauthorized use or access to the ES80.

Support information

If you need technical support for your Simrad ES80 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
- **Address:** Strandpromenaden 50, 3190 Horten, Norway
- **Telephone:** +47 33 03 40 00
- **Telefax:** +47 33 04 29 87
- **Website:** <https://www.simrad.no>
- **E-mail address:** simrad.support@simrad.com

Spain

- **Company name:** Simrad Spain
- **Address:** Ctra. N-332A, KM. 142, 03570 Villajoyosa, Spain
- **Telephone:** +34 966 810 149
- **Telefax:** +34 966 852 304
- **Website:** <http://www.simrad.es>
- **E-mail address:** simrad.spain@simrad.com

France

- **Company name:** Simrad France
- **Address:** 5 rue de Men Meur, 29730 Guilvinec, France
- **Telephone:** +33 298 582 388
- **Telefax:** +33 298 582 388
- **Website:** <http://www.simrad.fr>
- **E-mail address:** simrad.france@simrad.com

USA

- **Company name:** Kongsberg Underwater Technology Inc / Simrad Fisheries
- **Address:** 19210 33rd Ave W, Lynnwood, WA 98036, USA
- **Telephone:** +1 425 712 1136
- **Telefax:** +1 425 712 1193
- **Website:** <https://www.simrad.com>
- **E-mail address:** fish.usa.support@simrad.com

Malaysia

- **Company name:** Kongsberg Maritime Malaysia Sdn. Bhd
- **Address:** Unit 27-5 Signature Offices, The Boulevard, Mid Valley City, Lingkaran Syed Putra, 59200 Kuala Lumpur, Malaysia
- **Telephone:** +65 6411 7488
- **Telefax:** +60 3 2201 3359
- **Website:** <https://www.simrad.com>
- **E-mail address:** simrad.asia@simrad.com

Korea

- **Company name:** Kongsberg Maritime Korea Ltd
- **Address:** #1101-Harbor Tower, 113-1, Nampodong 6-Ga, Jung-Gu, Busan 600-046 Korea
- **Telephone:** +82-51-242-9933
- **Telefax:** +82-51-242-9934
- **Website:** <https://www.simrad.com>
- **E-mail address:** simrad.korea@simrad.com

China

- **Company name:** Kongsberg Maritime China Ltd
- **Address:** 555 Chuanqiao Road, China (Shanghai) Pilot Free Trade Zone, 201206, China
- **Telephone:** +86-21-3127-9888
- **Telefax:** +86-21-3127-9555
- **Website:** <https://www.simrad.com>
- **E-mail address:** simrad.china@simrad.com

Getting started

Topics

[Starting normal operation, page 25](#)

[Basic operation, page 33](#)

[User interface introduction, page 43](#)

[Setting up the ES80 Wideband fish finding echo sounder for the first time, page 52](#)

[Context sensitive on-line help, page 67](#)

Starting normal operation

Topics

- [Powering up the ES80, page 25](#)
- [Getting to know the user interface, page 26](#)
- [Checking transceiver and transducer settings, page 28](#)
- [Setting operational mode to *Normal* to start pinging, page 29](#)
- [Verifying that the bottom is correctly detected, page 30](#)
- [Checking and/or editing the transceiver parameters, page 31](#)
- [Powering off the ES80, page 32](#)

Powering up the ES80

In order to use the ES80, you must first power it up. You must first power up the display, the Processor Unit, the transceiver(s), and the Ethernet switch (if applicable). After this you can start the ES80 program.

Prerequisites

The ES80 is installed as specified in the *ES80 Installation manual*. Minimum one Wideband Transceiver (WBT) with one or more transducers has been connected. All relevant navigation sensors are operational.

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

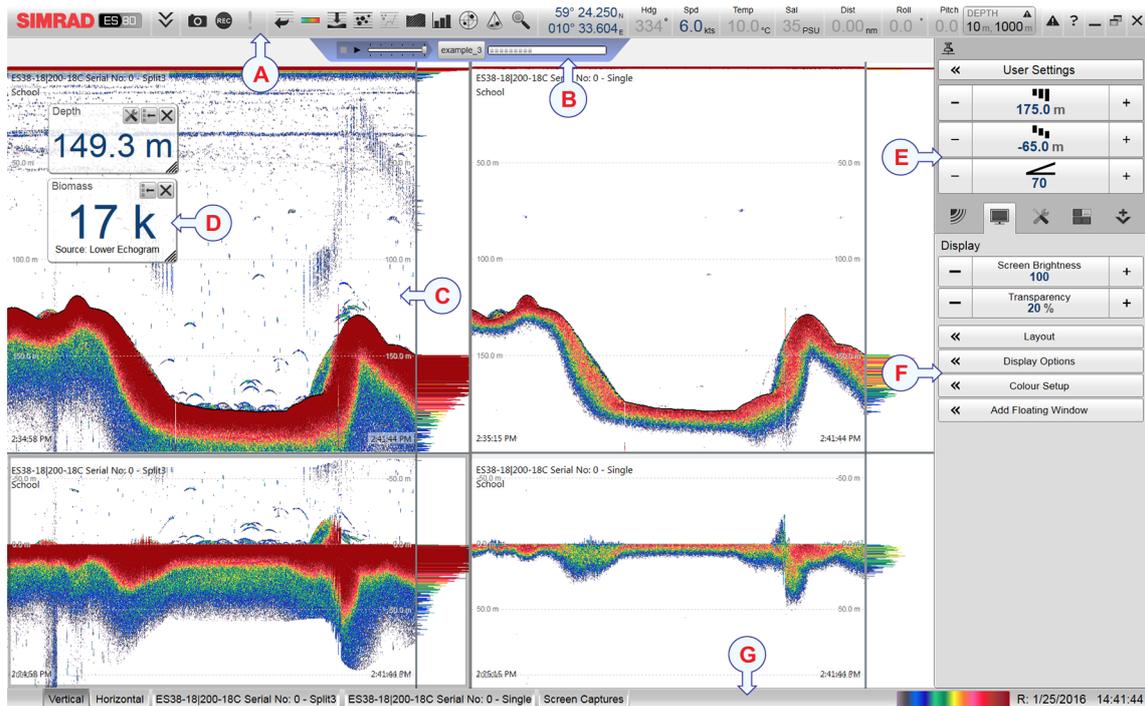
Procedure

- 1 Verify that each transceiver is powered up.
- 2 Power up the display and the Processor Unit, and start the ES80 program.
- 3 Once the ES80 program has started, observe that the presentation fills the entire screen.
- 4 On the **Main** menu in the top right corner of the presentation, select **User Settings**, and then choose the default settings.
- 5 At the bottom of the **Main** menu, observe that the **Operation** menu icon is flashing.
It is flashing to indicate that even if the ES80 is powered up, "pinging" is disabled. The ES80 is in *Normal* mode, but **TX Power** is set to *Off* to prevent transmission. This is for safety reasons.

Getting to know the user interface

The ES80 consists of specific visual elements that work together. The visual elements provide you with the echo information you need, they help you to control the functionality needed to understand this information, and finally, they allow you to control the operational parameters. By default, the ES80 presentation covers the entire screen.

Context



- A Top bar
- B Replay bar
- C Echogram view
- D Information panes
- E Main menu
- F Secondary menus
- G Bottom 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.

The ES80 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 make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. And more important, the top bar allows you to see when data recording is active.

[Top bar overview, page 208](#)

- 2 Observe the information pane "buttons" on the top bar.

The ES80 offers several *information panes* to provide additional and detailed data from the ES80 presentation. The information panes are opened and closed using the buttons on the top bar. Before you open an information pane, you must first click in an echogram view to make it "active".

[Information panes overview, page 212](#)

- 3 Move the cursor to the menu system on the right side of the ES80 presentation.

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. Below the **Main** menu, a set of dedicated icons are used to open the secondary menus. Select the icon one more time to close the menu.

[The ES80 menu system, page 266](#)

- 4 Move the cursor to the bottom of the ES80 presentation.

The bottom bar is located at the bottom of the ES80 presentation, and stretches from the far left to the far right side. The tabs on the bottom bar allows you to choose channel and presentation mode. A dedicated tab provides you with a special view to see the screen captures you have made. The bottom bar also shows you the current colour scale, as well as time and date.

[Bottom bar description, page 267](#)

- 5 Move the cursor to the echogram views in the main ES80 presentation.

The ES80 supports several different echogram types. Each echogram is shown in a separate view in the ES80 presentation. The tabs at the bottom of the ES80 presentation allows you to choose which channels to open. 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!

[About the echogram views, page 241](#)

- 6 Click inside one of the echogram views.

Before you can change the operational parameters for a view, you must click inside the view to make it "active". The changes you make are by default only valid for the "active" view. Observe that the border lines of the "active" view are drawn with a thicker line.

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

Checking transceiver and transducer settings

In order to use the ES80 the Processor Unit must be connected to one or more transceivers, and each of these must in turn be connected to one or more transducers. Each channel must be installed before it can be put to use. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency. It may often be useful to verify that all the channels are properly set up. This is a requirement for the ES80 performance.

Prerequisites

The ES80 is installed as specified in the ES80 *Installation manual*. The ES80 is switched on and working in normal operational mode. Minimum one Wideband Transceiver (WBT) with one or more transducers has been connected.

Context

If you are using a ES80 that has been in use for some time, you can safely assume that the transceivers and transducers have been set up properly. However, the procedure may prove useful if you are an inexperienced user. Make sure that you do not change any important settings.

Note

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

Procedure

- 1 Verify that the currently connected transducer(s) are shown as "tabs" at the bottom of the ES80 presentation.
- 2 Open the **Setup** menu.
- 3 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side, select **Transducer**.
On the collapsible menu, select any of the transducers that have already been defined. Observe that the relevant **Transducer** page opens. Observe that the page opens with all settings unavailable. This is a safety precaution to prevent unintentional changes to the transducer settings. To make any changes, you must select **Edit**.
- 5 Verify that each transducer has been installed with all settings defined.
- 6 On the left side of the **Installation** dialog box, select **Transceiver**.
Observe that the **Transceiver Installation** page opens.
- 7 Check that all applicable transceivers and transducers are connected and operational.
For each transceiver, this is indicated by the green label with text "Installed".
- 8 Close the **Installation** dialog box without making any changes.

Setting operational mode to *Normal* to start pinging

In order to transmit ("ping") you must set the ES80 to *Normal* operational mode.

Context

The **Operation** function controls the operational mode of the ES80. You can set it to *Normal*, *Replay* or *Inactive*. The *Normal* mode allows the ES80 to transmit ("ping") into the water, and to receive the echoes.

The transmission ("pinging") from the ES80 can be switched off or on. The **Ping** function enables or disables the ES80 transmissions into the water. Once pinging is *On*, use the **Ping Mode** function to choose how often the ES80 shall transmit. Use the **Ping Interval** function to choose the time (in milliseconds) between each transmission ("ping") when **Ping Mode** is set to *Interval*.

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Operation**, and set it to *Normal*.



The **Operation** function controls the operational mode of the ES80. You can set it to *Normal*, *Replay* or *Inactive*. The *Normal* mode allows the ES80 to transmit ("ping") into the water, and to receive the echoes. The ES80 is now ready for use.

3 Set **Ping** to *On*.



The **Ping** function enables or disables the ES80 transmissions into the water. Once pinging is *On*, use the **Ping Mode** function to choose how often the ES80 shall transmit. Use the **Ping Interval** function to choose the time (in milliseconds) between each transmission ("ping") when **Ping Mode** is set to *Interval*.

4 Set **Ping Mode** to *Maximum*.

This will make the ES80 ping with maximum ping rate ("speed").

The ping rate is normally limited by the maximum range settings. It will also be dependant on hardware issues. This may be, for example, how fast your Processor Unit can handle the information from each ping, how fast your system communicates with external peripherals, or how long time the system uses to save data.

Result

The ES80 is now transmitting acoustic pulses ("pinging") into the water.

Further requirements

When the ES80 starts, it is very important that it detects the bottom correctly. In most cases this will take place automatically. However, we have experienced that large schools of fish or difficult bottom conditions have deceived the ES80 to display the wrong depth. In these cases the sounder may display the bottom at 0,0 meters at the top of the fish school.

In order to aid the ES80 to locate the correct depth, you must adjust to bottom maximum and minimum ranges according to the actual bottom depth.

[Verifying that the bottom is correctly detected, page 30](#)

Verifying that the bottom is correctly detected

Locating the bottom is important for the ES80. The ES80 needs this "bottom lock" to locate the correct depth, and to stay on it during the operation, even if the depth changes continuously. Occasionally, difficult environmental, water or bottom conditions may inhibit "bottom lock".

Context

The **Bottom Detection** parameters provide separate limits for minimum and maximum depth. These limits may be used to obtain "bottom lock" on the depth when the ES80 is transmitting.

The **Bottom Backstep** parameter allows you to manually modify where on the bottom echo the depth shall be detected.

Tip

If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column.

Procedure

- 1 Open the **Active** menu.
- 2 Select **Bottom Detection**.



The bottom detection parameters are also found as a page in the **Information Pane Options** dialog box. To open the **Information Pane Options** dialog box, select the button on the **Active** menu. To open the page, you can also select **Setup** in the *Depth* information pane.

- 3 Set **Minimum Depth** and **Maximum Depth** to values fit for the depth at your current location.
 - The **Minimum Depth** setting eliminates all unwanted bottom detections from the transducer face and down to the depth you have chosen.
 - Set the **Maximum Depth** to approximately 50% more than the expected depth.

If you set maximum depth to a value identical or smaller than the minimum value, the bottom detection algorithm will be disabled. The ES80 will not detect the bottom at all, and the displayed depth will be 0.00 m.

Tip

If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column.

- 4 Select **OK** to save the chosen settings and close the dialog box.

Result

If the ES80 should lose bottom detection due to air or other disturbances, it will try to relocate the depth within the minimum and maximum depths you have defined.

Checking and/or editing the transceiver parameters

The **Normal Operation** dialog box lists all the transmission parameters. The dialog box provides one row for each channel in use. You are permitted to change the parameters.

Prerequisites

This procedure assumes that the ES80 system is turned on and operates normally. The **Normal Operation** dialog box is only available when the ES80 operates in *Normal* mode.

Procedure

- 1 On the **Operation** menu, open the **Normal Operation** dialog box.



- 2 For each channel:
 - a Set **Pulse Type** to a *LFM* or *CW* mode as permitted by your license and the transducer.
 - b Set **Mode** to *Active*.
 - c Set **Pulse Duration** to your chosen value.
 - d Set **Power** to the correct power level for the transducer.
 - e Set **Start Frequency** and **End Frequency** to values permitted by your license and the transducer.

In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

- 3 Close the dialog box.

Powering off the ES80

You must never switch off the ES80 by means of the on/off switch on the Processor Unit. You must always exit the ES80 program by clicking the **Exit** button on the top bar.

Context

When you do not use the ES80, switch off the display and the Processor Unit. If you are not using the ES80 for a long period of time, we recommend that you power off the Wideband Transceiver (WBT). Use the on/off switch on the power supply, or disengage the circuit breakers.

Procedure

- 1 Select **Exit** on the top bar.

Observe that the ES80 program closes down.
- 2 If the Processor Unit does not turn itself off automatically, use the functionality provided by the operating system to switch it off manually.
- 3 Turn off the display.

If required, refer to the instructions provided by the display manufacturer.
- 4 Power off each Wideband Transceiver (WBT).

The Wideband Transceiver (WBT) is not fitted with an on/off switch. You may leave the unit permanently powered up. If you are not using the ES80 for a long period of time, disconnect the power supply.

Basic operation

Topics

[Introduction to the basic procedures, page 33](#)

[Selecting the language displayed in the menus and dialog boxes, page 34](#)

[Selecting which echogram type to use in the ES80 presentation, page 34](#)

[Adjusting the gain \(echo sensitivity\), page 36](#)

[Choosing the depth range and the start depth for the echograms, page 37](#)

[Choosing the colours used to present the echograms, page 39](#)

[Recording echo data, page 40](#)

[Opening the context sensitive on-line help, page 41](#)

Introduction to the basic procedures

Once you have powered up the complete ES80 system, and started the ES80 program, you are ready to start the actual operation. Provided that one or more transducers and transceivers have been installed, the ES80 will receive information from each "ping", and present the echogram data.

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

The procedures are partly provided to get you acquainted with the basic functionality offered by the ES80, and partly to set up the ES80 for normal use. The ES80 starts up using the same settings as the last time you used it. If these settings are acceptable, continue operation.

Note

The procedures assume that the ES80 is set up with at least one frequency channel. If this is not the case, observe the relevant installation procedures. In this context, the phrase channel is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Selecting the language displayed in the menus and dialog boxes

You may prefer to use the ES80 with a user interface in your own language. The **Language** function allows you to select the language to be used in the ES80 presentations, menus and dialog boxes.

Context

With a few exceptions, the chosen language will also be used for all other texts on the ES80. The ES80 on-line help may not be available for the language you choose. If your language is not supported, the English on-line help is provided.



Procedure

- 1 Open the **Setup** menu.
- 2 Select the middle of the **Language** button to open the list of available options.



- 3 Select the language you wish to use.

Result

All the texts 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 ES80 program.

Selecting which echogram type to use in the ES80 presentation

The ES80 supports several different echogram types. Each echogram is shown in a separate view in the ES80 presentation. To select which echogram types you wish to see in the ES80 presentations, use the **Echogram** dialog box.

Context

Use this function to select what kind of echogram you wish to see in the current ("active") view.

- **Surface**

A *Surface* echogram is mainly used when you wish to look at the entire water column starting from the sea surface and down to the bottom.

- **Bottom**

A *Bottom* echogram is mainly used when you wish to examine the echoes from fish close to the bottom.

- **Pelagic**

A *Pelagic* echogram is mainly used when you wish to look at the water column starting from any distance below the sea surface down towards the bottom, but without seeing the bottom contour.

- **Trawl**

The *Trawl* echogram covers the vertical opening of the trawl with reference to the depth of the headrope.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.

- 2 Open the **Active** menu.

- 3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Echogram** to open the page.
- 5 Use the **Echogram Type** function to select the type you wish to apply to the chosen view.
- 6 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Close the dialog box.

Further requirements

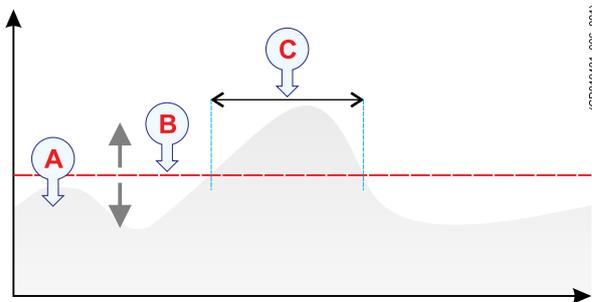
If necessary, adjust the **Range** and **Start Range** settings accordingly.

Adjusting the gain (echo sensitivity)

You can compare this gain setting with the volume control on your car radio. When the gain is increased, the echoes will appear stronger. Weak echoes will be easier to see. However, since you also increase the acoustic noise in the reception, the ES80 presentations will also show this noise. Too much gain may therefore "distort" the presentation.

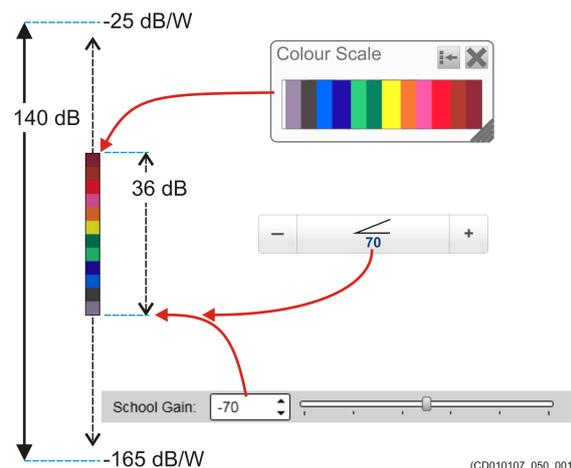
Context

Comparing the gain function with the volume control on your car radio is not very accurate. In fact, the gain in the ES80 is constant. The **Gain** function is used to adjust the sensitivity. This done by controlling the minimum level of detection. When you *increase* the gain level (more positive number) , you reduce the minimum level, and thus *increase* the sensitivity.



*The echo strength (A) changes with time. The minimum level of detection (B) is adjusted up or down with the **Gain** function. Increasing the **Gain** with a more positive number reduces the minimum level, and this increases the sensitivity. Only echoes over the minimum level are shown in the echogram (C).*

The ES80 has a dynamic range of 140 dB. This means that the ES80 can receive both very strong and very weak echoes. Actually, the ES80 will detect echoes from plankton to whales, bottom on most depths, and present the information free from distortion. As a comparison, our old echo sounders ES380 and ET100 had - using analogue TVG - a dynamic range corresponding to approximately 65 dB.



Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Observe the **Gain** button.



- 3 The following methods can be used for this adjustment.

- **Method 1:** Click [+] or [-] to choose the level.
- **Method 2:** Click the middle of the button, hold the mouse button depressed. Drag the cursor sideways to increase or decrease the level.
- **Method 3:** Click the middle of the button to open the menu. Type the requested value.

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

Note

*Do not confuse this **Gain** setting with the **TVG** (Time Varied Gain) setting.*

Choosing the depth range and the start depth for the echograms

In each echogram, the start depth is defined by the **Start Range** depth value. This is the "upper limit" of the echogram. The range from this start depth and down is defined by the **Range** value.

Context

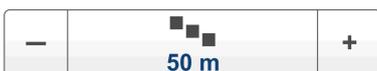
The **Range** setting defines how "deep" you wish the ES80 to detect echoes. In other words, this is the vertical distance between the "top" and the "bottom" of the echogram. The **Range** setting specifies the "bottom" depth, while the **Start Range** setting specifies the "top" depth. The way the **Range** and **Start Range** settings work depends on the echogram type.

Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Locate the **Start Range** function.



- 3 The following methods can be used for this adjustment.

- **Method 1:** Click [+] or [-] to choose the level.
- **Method 2:** Click the middle of the button, hold the mouse button depressed. Drag the cursor sideways to increase or decrease the level.

- **Method 3:** Click the middle of the button to open the menu. Type the requested value.

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

Note _____

*Remember that in a Bottom echogram, the **Start Range** value must be negative.*

- 4 Locate the **Range** function.



- 5 The following methods can be used for this adjustment.

- **Method 1:** Click [+] or [-] to choose the level.
- **Method 2:** Click the middle of the button to open the menu. Select a value from the options provided.
- **Method 3:** Click the middle of the button to open the menu. Type the requested value.

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

Note _____

*By selecting **Auto**, the ES80 automatically adjusts the range according to the current depth.*

Example

In a surface echogram, set the **Start Range** value to 0 meters. This will make the echogram start from the sea surface (provided that the transducer offset has been defined). Set **Range** to the current depth plus 20 meters. The echogram will now show the area from the sea surface and down to 20 meters "below" the bottom. The bottom contour is easily detected when the depth changes.

In a bottom echogram, set the **Start Range** value to -5 meters. This will make the echogram start from 5 meters above the bottom. Set **Range** to the 5 meters plus 10 = 15 meters. The echogram will now show the area from 5 meters above the depth, and down to 10 meters "below" the bottom. The bottom contour will appear as a flat line.

Choosing the colours used to present the echograms

Several different colour scales are predefined and available for the presentation of echograms. You can easily choose which colours to use. The presentation colours have no effect on the operational performance of the ES80. The **Colour Setup** dialog box controls the presentation colours used by the ES80. This includes the palette ("skin"), the number of colours in use, and the colour scale.

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.

Tip

*By default you have 64 or 12 colours available to present the echoes, and a selection of palettes. The colour scale can be retrieved any time by selecting **Colour Scale** on the top bar. The chosen colours are shown at the bottom of the ES80 presentation.*

If you choose to use many colours, the resolution of the ES80 presentation is greatly improved. It is then easier to distinguish the difference between the various echoes of different size and/or target strength.

Tip

*You can adjust the echo level range by means of the **Colour Scale** settings. These are opened from the Colour Scale information pane. You can find the same settings in the **Information Pane Options** dialog box on the **Active** menu.*



The following colour scales are available.

12 colours

Sonar colours

Smooth ES

Grayscale

BI500 colours



The **Smooth Echosounder** scale is based on the standard 12-colour scale. Additional colours have been added between these to make "smoother" colour transitions.

Procedure

- 1 Open the **Display** menu.
- 2 Select **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 64 colours.

- 4 Select the colour scale you wish to use.
- 5 At the bottom of the dialog box, select **Apply** to preview your choice(s).
- 6 Select **OK** to save the chosen setting and close the dialog box.

Recording echo data

The raw data recording function provided by the ES80 allows you to save echo data using the *.raw format. The data files can be copied or moved to other recordable media, or to another computer on the network. You can keep the recorded files for scientific studies, future references, or for training purposes. The recording is controlled by the **Record** function.

Prerequisites

Before you start data recording, make sure that you have defined where to store the files. To define which disks and folders to use to save the data files, use the **File Setup** page. The **File Setup** page is located in the **Output** dialog box. If you wish to save your recorded data on an external hard disk, make sure that it is connected to the Processor Unit.

Context

On the ES80, you can save and recall echo information using the following methods and formats.

- Bitmap images (containing the full ES80 screen capture) are saved whenever you select **Screen Capture** on the top bar.
- Raw data is recorded using the **Record** function on the **Operation** menu.
- A "history file" is recorded automatically and continuously. When the file is full, it will start to overwrite the oldest data, thus creating a "ring buffer".

Note

Do not confuse the **Record** function with the automatic **History** function. Unless you really need to record raw data for playback purposes, you should use this function with care. The data files will fill your hard disk very fast! The History function saves the echogram images automatically on the Processor Unit hard disk. These images can be recalled using the History information pane. The information in the History presentation is the same as on the original echogram presentation.

Data files will normally become very large. If you wish to record large amounts of ES80 data, make sure that you have enough space on your hard disk. Unless your Processor Unit is equipped with a very large disk, we recommend that you save the data to an external storage device.

Procedure

- 1 Open the **Operation** menu.
- 2 To start data recording, open the **Record** button, and select *On*.



Alternatively, simply click the red circle on the right side of the button.

The **Record** button on the top bar changes colour to reflect that recording is active.

- 3 If you wish to reduce the size of the data file you are recording, click the middle of the **Record** button to open it, and select **Split File**.

The current file is closed, and a new file is automatically started.

- 4 To stop recording, open the **Record** button, and select *Off*.

Alternatively, simply select the black rectangle on the left side of the button to stop the recording.

Opening the context sensitive on-line help

The ES80 is provided with an extensive context sensitive on-line help system. All information of the ES80 *Reference manual* is also provided in the on-line help. The on-line help can be opened from all dialog boxes in the ES80 user interface. You can also use the **Help** button on the top bar.

Context

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 ES80 on-line help may not be available for the language you have chosen for the user interface. If your language is not supported, the English on-line help is provided.

[Context sensitive on-line help, page 67](#)

Procedure

- 1 Select **Help** on the top bar.

The on-line help file opens on its start page. Observe the menu on the left side of the help window. If you have a computer keyboard connected, you can use the search functionality.



[Help button description, page 220](#)

- 2 Select **Help** in the top right corner of each dialog box.

The description of the relevant dialog box opens. Observe the menu on the left side of the help window. If you have a computer keyboard connected, you can use the search functionality.

User interface introduction

Topics

[ES80 user interface familiarisation, page 43](#)

[Top bar description, page 45](#)

[Information panes, page 46](#)

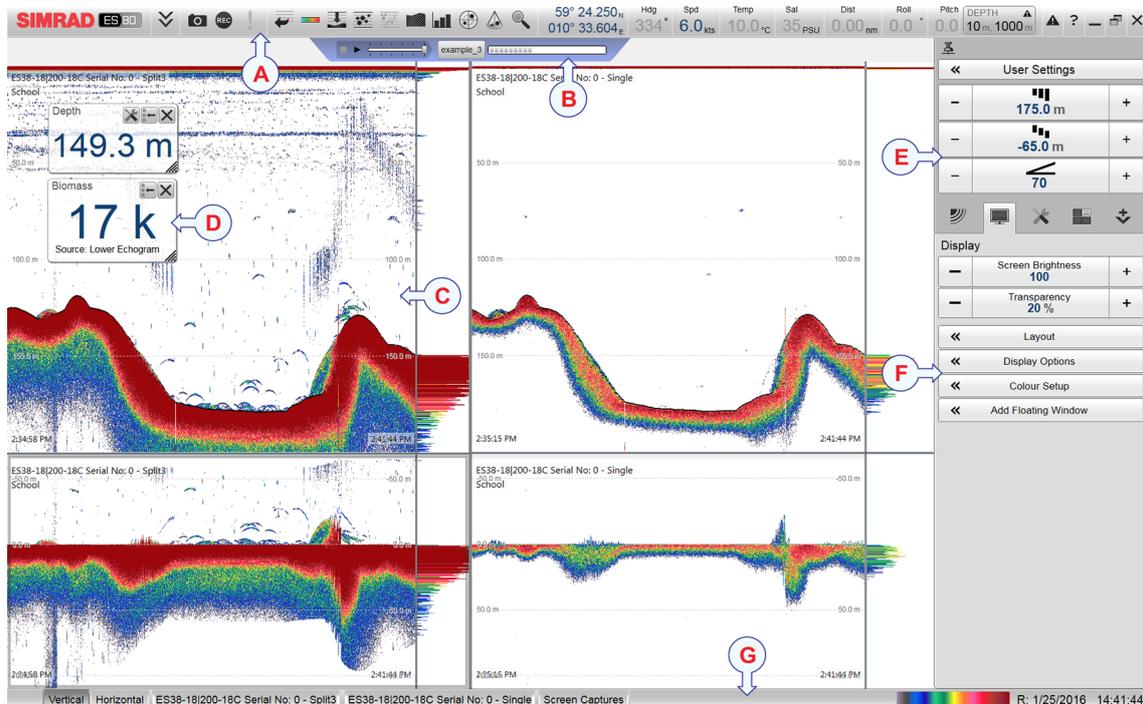
[Menu system, page 48](#)

[Bottom bar description, page 49](#)

[Echogram views, page 50](#)

ES80 user interface familiarisation

By default, the ES80 presentation covers the entire screen. The visual elements provide you with the echo information you need, they help you to control the functionality needed to understand this information, and finally, they allow you to control the operational parameters.



This ES80 screen capture shows you a typical data replay situation. You can see the same echoes from two different transducers, one low frequency (left), and one high frequency. There are two echogram views for each transducer. You can see several rectangular sonar echo data in different ways. The top bar shows you navigational

information as well as 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 ES80.

A Top bar

The ES80 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 make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. And more important, the top bar allows you to see when data recording is active.

B Replay bar

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

C Echogram views

By default, you have two echograms for each frequency channel. You can choose which type of echogram you wish to see. If you have more than one frequency channel, the echograms for each channel can be presented horizontally with one over the other, or vertically next to each other. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

D Information panes

The ES80 offers several *information panes* to provide additional and detailed data from the ES80 presentation. The information panes are opened and closed using the buttons on the top bar. You can change the appearance of the information panes to suit your preferences. You can change the transparency and the physical size of each pane.

E Main menu

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. By default, the **Main** menu is open, and positioned on the right hand side of the ES80 presentation. On the top bar, use the **Menu** button to hide or show the menu.



F 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.

G Bottom bar

The bottom bar is located at the bottom of the ES80 presentation, and stretches from the far left to the far right side. The tabs on the bottom bar allows you to choose channel and presentation mode. A dedicated tab provides you with a special view to

see the screen captures you have made. The bottom bar also shows you the current colour scale, as well as time and date.

Top bar description

The ES80 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 make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. And more important, the top bar allows you to see when data recording is active.



A Logo and product name

This information identifies the brand and the product.

B Menu button

Select this button to hide or show the menu system.

C Screen Capture / Event / Record

Select **Screen Capture** to make a copy of the current ES80 presentation. Select **Event** to initiate an event annotation on the echogram. The **Record** indicator is used to show you when recording is active.

D Information panes

Each information pane is opened and closed with its dedicated button on the top bar.

E Navigational information

These are not buttons, but separate fields that show you useful information related to the vessel and/or ES80 navigation and operation. The information shown on the ES80 top bar must not be used for vessel navigation!

F Depth Alarm

If the current depth changes to exceed the limits you have chosen, the alarm is triggered. Double-click **Depth Alarm** to open the **Alarm Limits** dialog box.

G Messages button

By flashing, the **Messages** button shows you that the ES80 has issued a message. The colour of the triangle reflects the severity of the most serious message. Select the button to open the **Messages** dialog box.

H Operating system buttons

The operating system buttons open the context sensitive online help, minimize and maximize the presentation window, and close down the ES80 program.

Information panes

The ES80 offers several *information panes* to provide additional and detailed data from the ES80 presentation. The information panes are opened and closed using the buttons on the top bar.

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Select the relevant button on the top bar to open the information pane.

In most cases, the data in the information pane is only valid for the selected channel.

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



The ES80 offers the following information panes (from left).

- *History*

The *History* information pane allows you to view previously recorded echogram sequences. Do not confuse this function with the recording functionality. The *History* function saves the echogram images automatically on the Processor Unit hard disk. The information in the *History* presentation is the same as on the original echogram presentation.

[History information pane description, page 222](#)

- *Colour Scale*

The *Colour Scale* information pane allows you to view the current colour scale in use, and to make changes to the echo levels it presents.

[Colour Scale information pane description, page 223](#)

- *Depth*

The *Depth* information pane provides the water depth in the current echogram view. If you have several echogram views open, you can place one pane in each view.

[Depth information pane description, page 225](#)

- *Biomass*

The *Biomass* information pane displays an index of the biomass in the current echogram view. The biomass index is the same as the NASC (Nautical area scattering strength) with unit m^2/nmi^2 .

[Biomass information pane description, page 227](#)

- *School Response*

The *School Response* information pane shows you the volume backscatter as a function of the frequency. The information is provided as a plot that shows the how the echo strength for a group of targets (for example a school of fish) change with the operational frequency. This functionality allows you to identify the nature of the schools, and discriminate between them. The information pane can only be opened when the ES80 operates with FM ("chirp") transmissions.

[School Response information pane description, page 229](#)

- *Bottom Hardness*

The *Bottom Hardness* information pane shows you the current bottom reflectivity. This indicates what type of bottom you have under your keel. The value is calculated using the bottom echo strength in the current ping.

[Bottom Hardness information pane description, page 231](#)

- *Size Distribution*

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

[Size Distribution information pane description, page 233](#)

- *Fish Position*

The *Fish Position* information pane shows the position of the detected single fish echoes. The current ping (largest circles) and the three previous ping (smaller circles) are shown. The view is "from above". The colours indicate the echo strength. The *Fish Position* information pane requires the use of a split-beam transducer.

[Fish Position information pane description, page 235](#)

- *Echo Position*

The *Echo Position* information pane shows the position of the detected single echoes within the beam. The current ping (largest circles) and the three previous ping (smaller circles) are shown. The view is "from the side". The colours indicate the echo strength. The *Echo Position* information pane requires the use of a split-beam transducer.

[Echo Position information pane description, page 237](#)

- *Zoom*

The *Zoom* information pane allows you to magnify a chosen area of the current echogram.

[Zoom information pane description, page 239](#)

Tip

You can easily change the physical size and shape of each information pane. Click in its lower right corner, and drag to a new size.

The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. The **Transparency** function is located on the **Display** menu.



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Retrieving the latest echogram history, page 120](#)

[Disabling the automatic echogram history recording, page 121](#)

[Changing the colour scale in the ES80 presentations, page 122](#)

[Opening the Depth information pane to read the current depth, page 124](#)

[Investigating the biomass, page 125](#)

[Changing the calculation parameters for the Biomass information pane, page 126](#)

[Investigating the bottom characteristics, page 132](#)

[Selecting fish species and changing their size to improve the size distribution information, page 133](#)

[Changing the calculation parameters for the Size Distribution information pane, page 134](#)

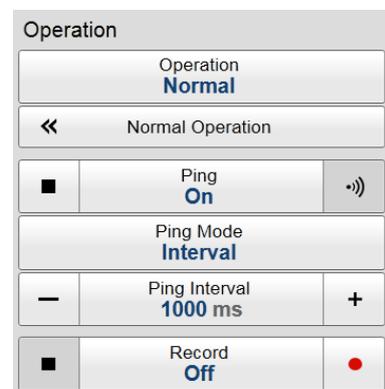
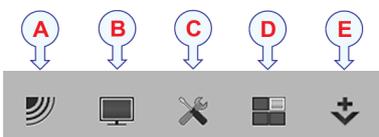
[Using the Zoom information pane to study details in the echogram, page 134](#)

Menu system

The menu system is by default located on the right hand side of the ES80 presentation. The menus are organized in a tree structure with a main menu, a set of secondary menus, and several menu buttons. Some of the menu buttons open dialog boxes or sub-menus to offer additional choices.

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. Unless you hide the entire menu system from view, the **Main** menu is visible at all times, even if you close the secondary menus.

Below the **Main** menu, a set of dedicated icons are used to open the secondary menus.



- A Operation menu:** The **Operation** menu offers the most common functions for basic ES80 operation.
- B Display menu:** The **Display** menu provides basic functions related to the screen behaviour and presentation of ES80 data.
- C Setup menu:** The **Setup** menu provides basic functions related to the ES80 installation parameters and its communication with peripheral systems.
- D Active menu:** The **Active** menu offers parameters related to current views and data presentations shown by the ES80.
- E Extras menu:** The **Extras** menu is - in spite of its name and location - not a menu at all. This "menu" opens a small view to monitor key operational parameters.

Tip

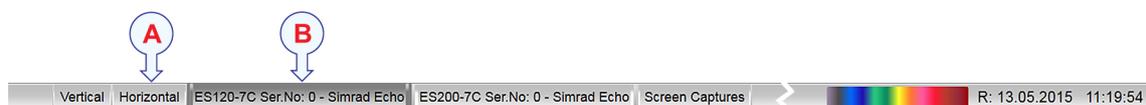
*Unless you need to make frequent changes to the operational parameters, you may wish to hide the menu from the ES80 presentation. This will give you more space to present echo data. To hide the menu, select **Menu** on the top bar. To retrieve it, select **Menu** one more time. When the menu is hidden, it is temporarily shown on the left or right hand side of the ES80 presentation if you move the cursor to that position.*



Bottom bar description

The bottom bar is located at the bottom of the ES80 presentation, and stretches from the far left to the far right side. The tabs on the bottom bar allows you to choose channel and presentation mode. A dedicated tab provides you with a special view to see the screen captures you have made. The bottom bar also shows you the current colour scale, as well as time and date.

The number of tabs available on the bottom bar depends on how many channels your ES80 has. Two tab "groups" allow you to select channels and views. This example shows the ES80 with two channels. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.



A Presentation modes

Three presentation modes are available when you wish to see all the echogram channels simultaneously in the ES80 presentation. The three tabs will arrange the echogram views vertically, horizontally, or in rectangular rows and columns.

By default, the echogram views are automatically arranged in the ES80 presentation. You can click and drag the border on each individual view to change its size. The size of the other views are reduced accordingly.

B Selecting individual echogram channels

Each channel is shown with a dedicated tab. The channel is identified with the name of the transducer in use. This name is the custom name you provided when you installed the transducer. Select a specific transducer tab to see only that channel in the ES80 presentation.

Related tasks

[Selecting echogram views on the bottom bar, page 100](#)

Echogram views

The ES80 supports several different echogram types. Each echogram is shown in a separate view in the ES80 presentation. The tabs at the bottom of the ES80 presentation allows you to choose which channels to open.

Supported echogram types

- **Surface**

A *Surface* echogram is mainly used when you wish to look at the entire water column starting from the sea surface and down to the bottom. Since this echogram is referenced to the sea surface, the bottom contour will vary with the actual depth. If you set up the **Start Range** and **Range** depths to place the bottom contour at the lower end of the echogram, you will have good opportunity to study the echoes from the water column.

[Surface echogram description, page 243](#)

- **Bottom**

A *Bottom* echogram is mainly used when you wish to examine the echoes from fish close to the bottom. Since this echogram is referenced to the bottom, the sea surface will vary with the actual depth, while the bottom is drawn flat. This makes it easy to study the echoes from the bottom. You can investigate the bottom conditions and hardness, and detect fish.

[Bottom echogram description, page 245](#)

- **Pelagic**

A *Pelagic* echogram is mainly used when you wish to look at the water column starting from any distance below the sea surface down towards the bottom, but without seeing the bottom contour. Pelagic echograms are useful when you work in deeper waters. The reduced range and the fact that you do not need to wait for the bottom echo means that the ES80's ping rate is increased.

[Pelagic echogram description, page 248](#)

- **Trawl**

Trawl sensor systems (such as Simrad PI, PX and ITI) communicate headrope depth, and/or the distance from the headrope to the footrope (trawl opening), to the ES80 at regular intervals. This information is required for the trawl echogram to be generated. The *Trawl* echogram covers the vertical opening of the trawl with reference to the depth of the headrope. In addition to the trawl opening, the echogram covers a certain range over and under the trawl opening.

[Trawl echogram description, page 250](#)

Selecting which echogram type to use

Once one or more echogram views are open, you can choose which echogram type to see.



Click once in the echogram view that you wish to change. This will make the view "active". A thick border is placed on the selected view to visualize this. Open the **Active** menu, click **Echogram** to open the dialog box, and select **Echogram Type** on the **Echogram** page.

In each echogram view, you can also select from a number of markers, lines and annotations to enhance the echogram, or to provide additional information. These can be selected on the **Lines** page in the **Echogram** dialog box.

Setting up the ES80 Wideband fish finding echo sounder for the first time

Topics

[Setting up summary, page 52](#)

[Adjusting the screen resolution, page 54](#)

[Installing the ES80 operational software, page 55](#)

[Defining the IP address on the Processor Unit network adapter for communication with the Wideband Transceiver \(WBT\), page 56](#)

[Powering up the ES80 to *Passive* mode, page 57](#)

[Obtaining and installing the software license, page 58](#)

[Installing one or more transducers, page 60](#)

[Installing transceiver channels, page 62](#)

[Defining the serial and Ethernet \(LAN\) port parameters, page 64](#)

[Setting up the input from a navigation system \(GPS\), page 65](#)

Setting up summary

Before a new ES80 Wideband fish finding echo sounder can be put to use, it must be set up for operation.

Prerequisites

- The ES80 Wideband fish finding echo sounder system units have all been installed according to the instructions in the *ES80 Installation manual*.
- All cables have been connected and verified.
- All system units have been inspected.
- The ES80 operational software is available.
- The ES80 software license is available.

Caution

You must never set the ES80 into normal operation when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Procedure

- 1 Do the following preparations.

- a Turn on the Processor Unit.
 - b Verify that you have administrative rights.
 - c Switch off any firewall applications.
 - d Open the operating systems's *Network and Sharing Center*, and set the IP address for the network adapter used to communicate with the transceiver.
 - **IP Address:** 157.237.15.12 (*Recommended*)
 - **Subnet mask:** 255.255.255.0
- 2 Install the ES80 operational software.
 - 3 Power up the transceiver(s).
 - 4 Verify that the Processor Unit is connected to the transceiver(s) using the Ethernet cable specified in the ES80 *Installation manual*.

If you use more than one transceiver, a high performance Ethernet switch must be used.

Note _____

It is very important that a high quality Ethernet cable is used. You must use CAT-5E STP (Shielded Twisted Pair) quality or better. Using cables with lower bandwidth capacity will reduce the ES80 performance.

- 5 Start the ES80.
- 6 On the **Software License** page, install the software license(s).
- 7 On the **Transducer** page, install each transducer.
- 8 On the **Transceiver Installation** page, connect the transducer(s) to the transceiver(s).
- 9 On the **Sensor Installation** page, set up the interfaces to the navigation sensors.
- 10 Start normal operation.
 - a Set **Operation** to *Normal*.
 - b In the **Normal Operation** dialog box, set the operational parameters.
 - c Set **Ping Mode** to *Maximum*.
 - d Set **Ping** to *On*.

Adjusting the screen resolution

Some computers have graphic adapters that are not able to detect the resolution of the current display. This limitation can also be caused by the display cable, or by imperfections in a display matrix system. In such cases, you must use the functionality of the operating system to adjust the screen resolution.

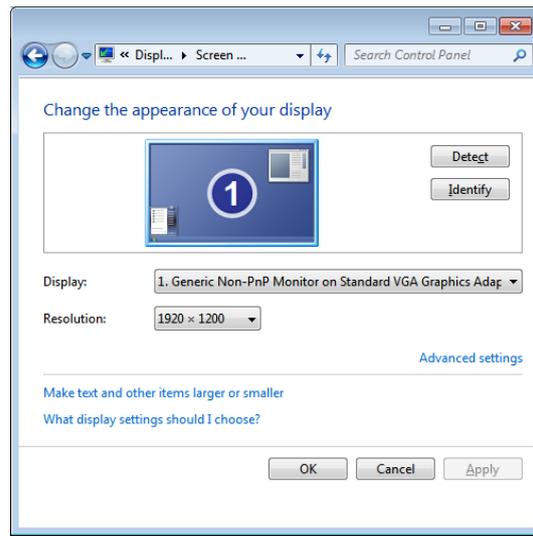
Prerequisites

This procedure is made for the Microsoft® Windows® 7 operating system. It is assumed that you are familiar with this operating system.

Context

As a general recommendation, you should set the screen resolution as high as possible. This will allow you more "space" in the ES80 presentation to offer more detailed information. The physical width of your top bar will also be extended, and free space for icons and navigational information.

Unless you change the hardware (computer, graphic adapter or display), you will only need to do this once.



Procedure

- 1 On the Processor Unit, close the ES80 program.
- 2 In the bottom-left corner of your desktop, select the Windows® **Start** button.
- 3 On the right-hand side of the **Start** menu, select **Control Panel**.
- 4 Observe that the Control Panel opens.
- 5 In the **Control Panel** dialog box, under **Appearance and Personalization**, click **Adjust screen resolution**.
- 6 Change the display settings.
 - a Verify that the correct display is shown.
 - b Change the resolution to maximum permitted resolution for your display.
 - c Click **OK**.
 - d Observe that the screen resolution changes.
 - e Click **Keep changes** in the acknowledge dialog box that appears.
- 7 Click the [**X**] in the top right corner to close the Control Panel.

Installing the ES80 operational software

If your ES80 Wideband fish finding echo sounder is provided with a Processor Unit, the ES80 software has already been installed. If you intend to use your own computer, you must install the software yourself.

Prerequisites

In order to install the software, you need the relevant file set on a suitable media. If the software is provided on a CD or a DVD, and your computer is not fitted with a suitable drive, copy the files to a USB flash drive.

Note

Verify that you have administrative rights on the Processor Unit. You need this to install the software. If you purchased your own computer, you must verify that it meets the technical requirements for use with the ES80. Do this before you install the software.

Context

One or more valid software licenses are required to operate the ES80. The software licenses are installed after the ES80 software installation. The **Software License** page is provided for this purpose.

Procedure

- 1 Turn on the Processor Unit.
- 2 Switch off any firewall applications.
- 3 Insert the ES80 software media.
If the ES80 software is provided on a CD or DVD, and your Processor Unit is not fitted with a suitable drive, copy the files to a USB flash drive.
- 4 Use a file manager application on the Processor Unit to access the software files.
- 5 Double-click `Setup.exe` to start the installation.
- 6 Allow the installation wizard to run. Follow the instructions provided.
We recommend that you install the ES80 in the default folder suggested by the wizard.
In the last dialog box you are permitted to remove old settings. Since this is your first installation of the software, you can disregard this option.
- 7 Once the installation has been completed, double-click the ES80 icon on the desktop to start the program.
- 8 Depending on your operating system parameters, certain dialog boxes may open.
 - a The Windows® 7 Firewall may open a dialog box requesting information about the network. Select **Public**, and then select **Allow access**.
 - b The operating system may also open other dialog boxes to verify that the ES80 software can run on the computer. You must of course permit this.

Further requirements

Observe the dedicated procedures for obtaining and installing the software licence(s).

Defining the IP address on the Processor Unit network adapter for communication with the Wideband Transceiver (WBT)

The communication between the Processor Unit and the transceiver(s) is made using a high speed Ethernet cable. If more than one transceiver is used, an Ethernet switch is added. On the ES80, the necessary IP is generated automatically. However, we recommend that you manually define which IP Address and Subnet mask the Ethernet adapter in the Processor Unit shall use for this communication.

Prerequisites

This procedure is made for the Microsoft® Windows® 7 operating system. It is assumed that you are familiar with this operating system.

Context

As long as you do not change the Processor Unit to another computer, or replace the network adapter in your Processor Unit, you will only need to do this once.

Procedure

- 1 On the Processor Unit, close the ES80 program.
- 2 Open the **Network and Sharing Center** dialog box.
 - a In the bottom-left corner of your desktop, select the Windows® **Start** button.
 - b On the right-hand side of the **Start** menu, select **Control Panel**.
 - c Observe that the Control Panel opens.
 - d Select **Network and Sharing Center**.
(If the Control Panel is shown with categories, select **View network status and tasks**.)
 - e On the left-hand menu, select **Change adapter settings**.
 - f Click once on your network adapter to select it, then right-click and select **Properties** on the short-cut menu.
 - g On the list of connections, select **Internet Protocol 4 (TCP/IPv4)**, and then **Properties**.

3 Select **Use the following IP address**, and type the IP address and network mask.

- **IP Address:** 157.237.15.12 (*Recommended*)
- **Subnet mask:** 255.255.255.0

You can leave **Subnet mask** blank and click **OK**. When you see an error message saying that the message subnet mask is missing, click **OK** again. A default subnet mask is then automatically generated.

4 Select **OK** to save the chosen settings, then close all the dialog boxes.

Further requirements

If you later need to change the IP address, always restart the transceiver before you start the ES80.

Powering up the ES80 to *Passive* mode

In order to use the ES80, you must first power it up. In this situation we do not want the ES80 to transmit, so we will leave it in *Passive* mode.

Prerequisites

This procedure assumes that the entire ES80 installation has been inspected. All power sources have been measured and verified. All system cables and connectors have been checked and tested. The ES80 has been installed on the Processor Unit.

Context

The ES80 program is not automatically started when the Processor Unit is powered up. Once the operating system has started, you must select the ES80 program icon on the desktop.

When the ES80 is powered up and set to *Normal* mode, it will use the transducer to transmit acoustic pulses into the water.

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Procedure

- 1 Verify that each Wideband Transceiver (WBT) is powered up.
The Wideband Transceiver (WBT) power supply is fitted with an on/off switch.
- 2 Turn on the display.
If required, refer to the instructions provided by the display manufacturer.
- 3 Turn on the Processor Unit.
Wait for the operating system to start up.

4 Double-click the ES80 icon on the Processor Unit desktop to start the program.

5 Select user settings.

During the program load, a dialog box appears to let you choose from the current user settings available on the ES80. The dialog box is only visible a few seconds. You do not need to make a choice here. You can select your predefined user setting at any time by means of the **User Settings** dialog box on the **Main** menu.

6 Once the ES80 program has started, observe that the presentation fills the entire screen.

Obtaining and installing the software license

To operate the ES80 with a wide band transceiver you need a valid software license. Before you can use the ES80 you must obtain a "license string" and install it on your Processor Unit. Without a license you will not be able to communicate with the transceiver.

Prerequisites

This procedure assumes that the ES80 operational software has been successfully installed on the Processor Unit.

Context

The software license is 32 character hexadecimal string built from the transceiver's serial number. It defines several key parameters that controls the functionality and behaviour of the transceiver(s) you use. Each software license code "unlocks" one Wideband Transceiver (WBT) for operational use with a set of predefined properties.

The software license is not linked to the physical Processor Unit. You can therefore easily move the software from one computer to another, just remember to take a copy of the license string.

In order to obtain a software license you must contact a Simrad dealer or distributor. You can also use the request form on <http://www.simrad.com/support>, or contact our support department directly.

Note

This procedure is only valid if your ES80 shall operate with a Wide Band Transceiver (WBT).

Once you receive your software license string(s), do not loose them. We suggest that you copy the information into a text file (for example Notepad), and add relevant information. Place the text file on the Processor Unit desktop, and make sure that backup copies are made.

Procedure

- 1 Obtain the necessary information about your transceiver(s) and transducer(s). Write down:
 - a The serial number for each transceiver.
 - b Which transducers you have connected to each transceiver.
 - c The center frequency for each transducer.
 - d The Q-value for each transducer.
 - e The maximum nominal power rating for each transducer.
- 2 Send the necessary information to one of Simrad's dealers or distributors.
 You can also use the request form on <http://www.simrad.com/support>, or contact our support department directly.

You can use the following e-mail address:

- purchase.order@simrad.com

Once the software license string(s) have been returned to you (most likely by e-mail), you can install the licenses into the software.

- 3 Open the **Setup** menu.
- 4 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 5 On the left side of the **Installation** dialog box, select **Software License**.

Observe that the **Software License** page opens.

- 6 Select **Type License String**, and type the license string into the dialog box.

If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard. If you have received the license string on an electronic format (e-mail or text file), you can copy the string from the source document and paste it into the **Type License String** dialog box.

- 7 Click **OK** to save the license string and close the **Type License String** dialog box.
- 8 Verify that the license string is placed in the **Currently active licenses** list.
 If necessary, select the license string on the left side, and click the arrow button [**>**] to move it to the **Currently active licenses** list.

- 9 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Installing one or more transducers

The transducers you wish to use with the ES80 must be "installed" as a part of the software configuration. Which transducers to use depends on the number of transceivers in your system, and the licenses you have for these. Unless you replace a broken transducer, or add a new, you only need to do this once.

Prerequisites

It is assumed that the ES80 software has been installed, and that all relevant license strings have been applied. You need to know the type and serial number of each transducer that you wish to install.

Context

Each transducer is added using the **Transducer Installation** page. The **Transducer Installation** page is located in the **Installation** dialog box.

You can only choose a transducer from the **Model** list. The list is generated from a system file on your Processor Unit. It contains all the transducers that are compatible with the Wideband Transceiver (WBT). The list also includes technical specifications for each transducer. You can not see this information, but it is used by the ES80 to set up the operational parameters. This allows the Wideband Transceiver (WBT) to optimize its performance for the individual transducer models.

If you can not find your transducer on the list, contact you dealer, agent or Kongsberg Maritime to upgrade the relevant software component in the ES80.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Transducer Installation**.
- 4 Select the transducer you wish to install from the **Model** list.

Note

Make sure that you select a transducer that is supported by your current license.

- 5 Insert the serial number.

This serial number is used as a reference identification. The transducer installation will work even if you do not add this serial number. Some new Simrad transducers with built-in "intelligence" will automatically provide this serial number.

- 6 Type the name you wish to use into the **Custom Name** box.

Type any name that you wish to use to identify the transducer. The name you select will only be used to identify the transducer in other dialog boxes. It is not used in the echo data that you export. If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard.

- 7 Select mounting method.

- 8 Specify the orientation of the transducer beam.

- 9 Provide the accurate physical location of the transducer with reference to the vessel's coordinate system.

Use the centre of the transducer face as reference, and define the offset values related to the *Ship Origin*.

- a Select the offset value in the X-axis (fore-and-aft direction) from the *Ship Origin*. Adjust with a positive value for X if the transducer is located ahead of the ship origin.
 - b Select the offset value in the Y-axis (athwartship) from the *Ship Origin*. Adjust with a positive value for Y if the transducer is located on the starboard side of the ship origin.
 - c Select the offset value in the Z-axis (vertical) from the *Ship Origin*. Adjust with a positive value for Z if the transducer is located under the ship origin.
- 10 Select **Add** to save the information you have provided.

The transducer is added to the list in the **Installed Transducers** box.
 - 11 Repeat for each transducer that you wish to install.
 - 12 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Result

Once a transducer has been installed, it is listed in the **Installed Transducers** box. To see the information you have collected about the transducer, select the relevant transducer in the list.

The **Edit** functionality on the **Transducer Installation** page makes it possible to change the information you have provided for the transducer. You can not change the model identification and the serial number. The custom name is used several places in the user interface, and it can be changed.

The **Remove** functionality on the **Transducer Installation** page makes it possible to delete the information you have provided for the transducer. There is no "undo" functionality.

Installing transceiver channels

In order to use the ES80 the Processor Unit must be connected to one or more transceivers, and each of these must in turn be connected to one or more transducers. Each channel must be installed before it can be put to use. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Prerequisites

The ES80 is installed as specified in the ES80 *Installation manual*.

- All cables are connected and tested.
- Each transceiver is powered up.
- The software license for each transceiver is installed and activated.
- The Ethernet adapter in the Processor Unit is set up with a unique IP address.
- All relevant transducers are installed using the **Transducer** page.

Context

The **Transceiver Installation** parameters control the installation and disconnection of transceivers. Every time the page is opened, the ES80 software automatically performs a search on the Ethernet network for transceivers.

The list in the upper part on the **Transceiver Installation** page shows you an overview of the transceivers and channels that are currently available. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency. Each channel is identified by the transceiver type and serial number and the transducer(s) in use. The current status for each channel is also provided.

- **Busy:** The channel is already in use, probably by another echo sounder on the same network. You can not connect to this channel.
- **Installed:** This channel is connected to your ES80 system.
- **Lost:** This channel can not be used.
- **Available:** This channel is vacant and ready for use.

Note

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

Procedure

- 1 Open the **Setup** menu.

- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Transceiver**.
- 4 Install the channel(s).
 - a Observe that the transceiver(s) you have connected to the Processor Unit are listed.

Each transceiver is identified with type and serial number. The available channels on each transceiver are listed separately.

- b For each channel, choose which transducer to connect to.

The list of transducers available for installation is defined by those you installed on the **Transducer** page.

Note _____

This is a critical task. Make sure that the correct transducer is selected.

- c Observe that the status for the relevant frequency channels change to *Installed*.

Tip _____

If no transceivers are listed:

- Click **Browse** in the **Transceiver Browsing** field, and open the **Local IP Address** field. Select the correct address for the Ethernet adapter you are using. This will make the ES80 search the network for available transceivers.
 - Check that each transceiver has been powered up.
 - Verify that the Ethernet communication between the units is operational.
 - If you are using an Ethernet switch, verify that it works.
-

- 5 At the bottom of the page, select **Apply** to save your settings.
- 6 Repeat until all the channels have been installed.
- 7 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Result

When all channels have been installed, you can start normal operation.

Caution _____

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Defining the serial and Ethernet (LAN) port parameters

For any sensor interface to work, the communication parameters must be set up correctly. The ES80 software automatically scans the Processor Unit to locate and identify the available communication ports. Once the software has established a list of valid interfaces, you can set up and control the communication parameters.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The communication parameters required for the sensor interface are known.

Context

The **I/O Setup** page provides two lists, one for serial ports and one for Ethernet (LAN) ports. Each list is supported with a set of functions to set up and monitor the communication ports. Click once on the port you wish to work with, and then one of the buttons below the list.

Tip

*The **Sensors** page in the **BITE (Built-In Test Equipment)** dialog box provides an overview of all the communication lines and sensors in use. All relevant status information is provided. The **BITE** dialog box is located on the **Setup** menu.*

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



- 3 Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.
- 4 On the left side of the **Installation** dialog box, select **I/O Setup**.
- 5 Observe that the available serial and network interface ports on the Processor Unit are listed.
- 6 Set up the relevant serial or Ethernet (LAN) communication parameters.
 - a Select the interface port you wish to set up.

- b Select **Setup** below the list to open the **Serial Port Setup** or **LAN Port Setup** dialog box.
 - c Set up the relevant serial or Ethernet (LAN) communication parameters.
The communication parameters defined for **NMEA 0183** are:
 - **Baud rate:** 4800 b/s
 - **Data bits:** 8
 - **Parity:** None
 - **Stop bits:** 1Some instruments may offer other parameters and/or choices. You must always check the relevant documentation provided by the manufacturer.
 - d Select **OK** to save the chosen settings and close the dialog box.
- 6 At the bottom of the page, select **Apply** to save your settings.
 - 7 Repeat for any other communication ports that you need to set up.
 - 8 Close the **Installation** dialog box.

Setting up the input from a navigation system (GPS)

For the ES80 to use and offer correct navigational information, one or more external sensors must be connected. Typical sensors are those that provide speed, heading and geographical position. To select which sensors to install, use the **Sensor Installation** page.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The interface port is set up with the correct communication parameters.

Context

The **Sensor Installation** page allows your ES80 to communicate with external sensors and systems. You must specify which communication port to use (Local Area Network (LAN) or serial). You can type a custom name to identify the sensor import. On the list of valid datagrams formats, select the format(s) to be accepted by the ES80. Once a sensor has been chosen, you must select the offset values that define the sensor's physical location relative to your vessel's coordinate system.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

Procedure

- 1 Connect the navigation system to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 Open the **Setup** menu.
- 3 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side of the **Installation** dialog box, select **Sensor Installation**.
- 5 Select the type of sensor you wish to interface.
- 6 Select which port you wish to import the sensor information on.
- 7 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation** and **Output** dialog boxes.*

- 8 If you wish to verify that the peripheral system is in fact transmitting data to the ES80, select **Monitor**.

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.

- 9 Type a custom name to identify the interface in other dialog boxes.
- 10 Select which datagram(s) you wish to import from the sensor.
- 11 If relevant, specify a dedicated Talker ID.

- 12 Provide the accurate physical location of the sensor (or its antenna) with reference to the vessel's coordinate system.

Each position is defined as an *offset* to the *Ship Origin* in the coordinate system. These offset values are required to allow the ES80 to give you as accurate echo data as possible. The degree of accuracy offered by the ES80 is directly related to the accuracy of the information you enter on the **Sensor Installation** page.

- a Select the offset value in the X-axis (fore-and-aft direction) from the *Ship Origin*. Adjust with a positive value for X if the sensor is located ahead of the ship origin.
 - b Select the offset value in the Y-axis (athwartship) from the *Ship Origin*. Adjust with a positive value for Y if the sensor is located on the starboard side of the ship origin.
 - c Select the offset value in the Z-axis (vertical) from the *Ship Origin*. Adjust with a positive value for Z if the sensor is located under the ship origin.
- 13 Select **Add** to save the new sensor interface you have defined.
The sensor interface is added to the **Installed Sensors** list on the **Sensor Installation** page.
 - 14 Repeat for each sensor interface that you need to set up.
 - 15 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Further requirements

On the left side of the **Installation** dialog box, select **Sensor Configuration**. Define the priority of the datagrams, and set up relevant configuration parameters.

Context sensitive on-line help

The ES80 is provided with an extensive context sensitive on-line help system. All information of the ES80 *Reference manual* is also provided in the on-line help.

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

*To open the on-line help on its start page, select **Help** on the top bar. To read about a dialog box and the options provided, select the [?] button in its top right corner.*



The ES80 on-line help may not be available for the language you have chosen for the user interface. If your language is not supported, the English on-line help is provided.

Related tasks

[Opening the context sensitive on-line help, page 82](#)

[Updating the online help file, page 195](#)

[Adding an online help file in a new language, page 196](#)

Related functions

[Help button description, page 220](#)

Operational procedures

Topics

[Power on/off procedures, page 70](#)

[Choosing operational mode and key transmit parameters, page 73](#)

[Controlling the gain and range settings, page 83](#)

[Recording and replaying raw echo data, page 89](#)

[Saving and recalling screen captures, page 95](#)

[Setting up the echogram presentation, page 98](#)

[Using the information panes to collect data from the echoes, page 120](#)

[Defining settings related to user preferences and individual customizing, page 137](#)

[Saving, retrieving and handling user settings, page 145](#)

[Adjusting the transceiver parameters, page 150](#)

[Interfacing peripheral equipment, page 154](#)

[System setup and software installation procedures, page 176](#)

[Maintaining the ES80, page 195](#)

Power on/off procedures

Topics

[Powering up the ES80, page 70](#)

[Powering off the ES80, page 71](#)

Powering up the ES80

In order to use the ES80, you must first power it up. You must first power up the display, the Processor Unit, the transceiver(s), and the Ethernet switch (if applicable). After this you can start the ES80 program.

Prerequisites

The ES80 is installed as specified in the ES80 *Installation manual*. Minimum one Wideband Transceiver (WBT) with one or more transducers has been connected.

Context

The ES80 program is not automatically started when the Processor Unit is powered up. Double-click the ES80 icon on the Processor Unit desktop to start the program.

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Procedure

- 1 Verify that each Wideband Transceiver (WBT) is powered up.
The Wideband Transceiver (WBT) power supply is fitted with an on/off switch.
- 2 Turn on the display.
If required, refer to the instructions provided by the display manufacturer.
- 3 Turn on the Processor Unit.
Wait for the operating system to start up.
- 4 Double-click the ES80 icon on the Processor Unit desktop to start the program.
- 5 Select user settings.

During the program load, a dialog box appears to let you choose from the current user settings available on the ES80. The dialog box is only visible a few seconds. You do not need to make a choice here. You can select your predefined user setting at any time by means of the **User Settings** dialog box on the **Main** menu.

- 6 Once the ES80 program has started, observe that the presentation fills the entire screen.

The program starts up using the same settings as the last time you used it. If these settings are acceptable, continue operation. If you wish to alter any of the settings, see the relevant procedures.

- 7 At the bottom of the **Main** menu, observe that the **Operation** menu icon is flashing. It is flashing to indicate that even if the ES80 is powered up, "pinging" is disabled. The ES80 is in *Normal* mode, but **TX Power** is set to *Off* to prevent transmission. This is for safety reasons.
- 8 Select the **Operation** icon to open the menu.
- 9 Set **Operation** to *Normal*.



- 10 Set **Ping** to *On*.



- 11 Set **Ping Mode** to *Maximum*.

This will make the ES80 ping with maximum ping rate ("speed"). The ping rate is normally limited by the maximum range settings. It will also be dependant on hardware issues. This may be, for example, how fast your Processor Unit can handle the information from each ping, how fast your system communicates with external peripherals, or how long time the system uses to save data.

- 12 Observe that the ES80 starts.

Further requirements

When the ES80 starts, it is very important that it detects the bottom correctly. In most cases this will take place automatically. However, we have experienced that large schools of fish or difficult bottom conditions have deceived the ES80 to display the wrong depth. In these cases the sounder may display the bottom at 0,0 meters at the top of the fish school. In order to aid the ES80 to locate the correct depth, you must adjust to bottom maximum and minimum ranges according to the actual bottom depth.

Powering off the ES80

You must never switch off the ES80 by means of the on/off switch on the Processor Unit. You must always exit the ES80 program by clicking the **Exit** button on the top bar.

Context

When you do not use the ES80, switch off the display and the Processor Unit. If you are not using the ES80 for a long period of time, we recommend that you power off the

Wideband Transceiver (WBT). Use the on/off switch on the power supply, or disengage the circuit breakers.

Procedure

- 1 Select **Exit** on the top bar.
Observe that the ES80 program closes down.
- 2 If the Processor Unit does not turn itself off automatically, use the functionality provided by the operating system to switch it off manually.
- 3 Turn off the display.
If required, refer to the instructions provided by the display manufacturer.
- 4 Power off each Wideband Transceiver (WBT).

The Wideband Transceiver (WBT) is not fitted with an on/off switch. You may leave the unit permanently powered up. If you are not using the ES80 for a long period of time, disconnect the power supply.

Choosing operational mode and key transmit parameters

Topics

- [Selecting *Normal* operational mode, page 73](#)
- [Selecting *Inactive* operational mode, page 74](#)
- [Selecting *Replay* operational mode, page 75](#)
- [Verifying that the bottom is correctly detected, page 76](#)
- [Defining the ping \(transmission\) modes, page 77](#)
- [Transmitting single pings, page 79](#)
- [Transmitting with fixed time intervals, page 79](#)
- [Verifying or changing the environmental parameters, page 80](#)
- [Defining the sound speed close to the transducer, page 81](#)
- [Opening the context sensitive on-line help, page 82](#)

Selecting *Normal* operational mode

In order to transmit ("ping") you must set the ES80 to *Normal* operational mode.

Context

The **Operation** function controls the operational mode of the ES80. You can set it to *Normal*, *Replay* or *Inactive*. The *Normal* mode allows the ES80 to transmit ("ping") into the water, and to receive the echoes.

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Operation**, and set it to *Normal*.



The **Operation** function controls the operational mode of the ES80. You can set it to *Normal*, *Replay* or *Inactive*. The *Normal* mode allows the ES80 to transmit ("ping") into the water, and to receive the echoes. The ES80 is now ready for use.

3 Set **Ping** to *On*.



The **Ping** function enables or disables the ES80 transmissions into the water. Once pinging is *On*, use the **Ping Mode** function to choose how often the ES80 shall transmit. Use the **Ping Interval** function to choose the time (in milliseconds) between each transmission ("ping") when **Ping Mode** is set to *Interval*.

4 Set **Ping Mode** to *Maximum*.

This will make the ES80 ping with maximum ping rate ("speed").

The ping rate is normally limited by the maximum range settings. It will also be dependant on hardware issues. This may be, for example, how fast your Processor Unit can handle the information from each ping, how fast your system communicates with external peripherals, or how long time the system uses to save data.

Result

The ES80 is now transmitting acoustic pulses ("pinging") into the water.

Further requirements

When the ES80 starts, it is very important that it detects the bottom correctly. In most cases this will take place automatically. However, we have experienced that large schools of fish or difficult bottom conditions have deceived the ES80 to display the wrong depth. In these cases the sounder may display the bottom at 0,0 meters at the top of the fish school.

In order to aid the ES80 to locate the correct depth, you must adjust to bottom maximum and minimum ranges according to the actual bottom depth.

[Verifying that the bottom is correctly detected, page 76](#)

Selecting *Inactive* operational mode

The *Inactive* mode is provided to pause the ES80 operation temporarily. Neither transmission nor reception will take place. The current echoes are removed from the presentation.

Context

The **Operation** function controls the operational mode of the ES80. You can set it to *Normal*, *Replay* or *Inactive*.

Note

Note that Inactive operational mode is not the same as Passive mode. While Inactive mode stops both transmission and reception, Passive mode will still allow the ES80 to receive echoes.

*If you wish to switch to Passive mode, use the **Normal Operation** dialog box.*

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Operation**, and set it to *Inactive*.

**Result**

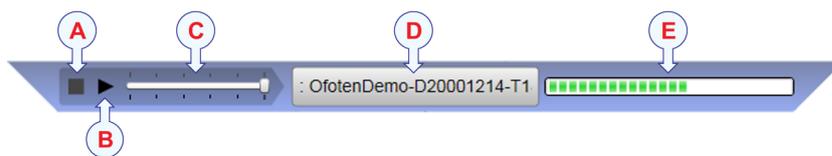
When the ES80 has been disabled using this function, it will stop. The transmission ("pinging") stops. The current echoes are removed from the presentation.

Selecting *Replay* operational mode

The *Replay* operational mode allows you to play back previously recorded raw data. The ES80 is not operational while in *Replay* mode. Neither transmission nor reception takes place.

Context

All playback is controlled by the replay bar.



- A** *Stop:* Select this button to stop the playback.
- B** *Play/Pause:* Select this button to start the playback, or to pause it.
- C** *Replay speed:* Select this slider and move it sideways to adjust the replay speed.
- D** *Replay file:* This button shows which file you are currently playing.
- E** *Progress:* This bar shows you the replay progress of the current file.

Procedure

- 1 Open the **Operation** menu.

- 2 Set **Operation** to *Replay*.



The replay bar is automatically opened. It is positioned directly below the top bar at the top of the ES80 presentation.

If you need to select which files to replay, click **Replay File** under the **Operation** button. You can also click the large button in the middle of the replay bar.

- 3 Click the **Play/Pause** button to start the playback.
- 4 To stop the replay, choose any other operational mode.

Verifying that the bottom is correctly detected

Locating the bottom is important for the ES80. The ES80 needs this "bottom lock" to locate the correct depth, and to stay on it during the operation, even if the depth changes continuously. Occasionally, difficult environmental, water or bottom conditions may inhibit "bottom lock".

Context

The **Bottom Detection** parameters provide separate limits for minimum and maximum depth. These limits may be used to obtain "bottom lock" on the depth when the ES80 is transmitting.

The **Bottom Backstep** parameter allows you to manually modify where on the bottom echo the depth shall be detected.

Tip

If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column.

Procedure

- 1 Open the **Active** menu.
- 2 Select **Bottom Detection**.



The bottom detection parameters are also found as a page in the **Information Pane Options** dialog box. To open the **Information Pane Options** dialog box, select the button on the **Active** menu. To open the page, you can also select **Setup** in the *Depth* information pane.

- 3 Set **Minimum Depth** and **Maximum Depth** to values fit for the depth at your current location.
 - The **Minimum Depth** setting eliminates all unwanted bottom detections from the transducer face and down to the depth you have chosen.
 - Set the **Maximum Depth** to approximately 50% more than the expected depth.

If you set maximum depth to a value identical or smaller than the minimum value, the bottom detection algorithm will be disabled. The ES80 will not detect the bottom at all, and the displayed depth will be 0.00 m.

Tip

If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column.

- 4 Select **OK** to save the chosen settings and close the dialog box.

Result

If the ES80 should loose bottom detection due to air or other disturbances, it will try to relocate the depth within the minimum and maximum depths you have defined.

Defining the ping (transmission) modes

You can easily control how often the ES80 shall transmit acoustic energy (a "ping") into the water. You can disable the transmission altogether, set it to operate as fast as possible, or select a timed interval.

Context

Once pinging is *On*, use the **Ping Mode** function to choose how often the ES80 shall transmit. This function allows you to control the *behavior* of the transmissions ("pinging").

- If you choose *Single Ping*, you can transmit single pings by clicking the ping symbol on the **Ping** button.
- If you choose *Interval*, you must define the time between each "ping" with the **Ping Interval** function.
- If you choose *Maximum*, the ES80 will transmit ("ping") as often as possible.

Procedure

- 1 Open the **Operation** menu.
- 2 On the **Operation** menu, set **Ping** to *On*.



- Select the right symbol to start "pinging".
- Select the left symbol to stop "pinging".
- Select the middle of the button to open the button menu.

3 Set **Ping Mode** to *Maximum*.

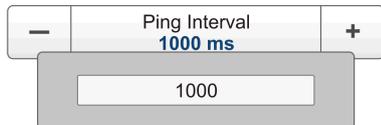


This will make the ES80 ping with maximum ping rate ("speed"). The time between each ping ("ping rate") depends mainly on the current range. In some systems, a low performance Processor Unit and/or a slow hard disk may reduce the ping rate. How fast your Processor Unit communicates with external peripherals may also have an effect on the ping rate.

4 Set **Ping Mode** to *Interval*.

5 Specify the interval between each "ping".

- Click either side (+ or –) of the **Ping Interval** button to select the requested time between each "ping".
- Click **Ping Interval** to open it, and type the requested time between each "ping".

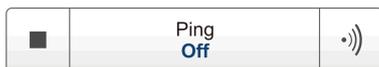


Select either side of the button to choose a value. Select the middle of the button to open it. If you have a keyboard connected to the ES80, you can type the requested value into the text box.

You can also change the value by selecting - and holding - the middle of the button, and move the cursor sideways. Move the cursor towards left to reduce the value, or towards right to increase the value. Release the mouse button when the requested value is shown in the button.

6 Set **Ping Mode** to *Single Ping*.

7 Select the "ping" symbol on the right side of the **Ping** button to transmit one single "ping".



Transmitting single pings

You can set up the ES80 to transmit a "ping" only when you click the **Ping** button.

Context

The **Ping Mode** function is used to control how often the ES80 shall transmit its energy into the water. For normal use, choose *Maximum*. This will allow the ES80 to transmit continuously and as often as possible.

If you choose *Single Ping*, you can transmit single pings by clicking the ping symbol on the **Ping** button.



Procedure

- 1 Open the **Operation** menu.
- 2 Set **Ping Mode** to *Single Ping*.
- 3 Select the "ping" symbol on the right side of the **Ping** button to transmit one single "ping".



Transmitting with fixed time intervals

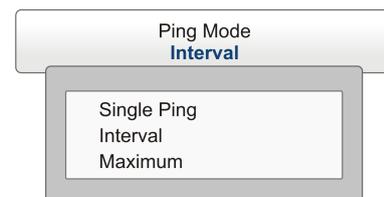
You can set up the ES80 to transmit a "ping" at fixed time interval.

Context

The **Ping Mode** function is used to control how often the ES80 shall transmit its energy into the water. For normal use, choose *Maximum*. This will allow the ES80 to transmit continuously and as often as possible.

If you choose *Interval*, you must define the time between each "ping" with the **Ping Interval** function.

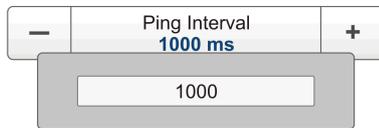
The time interval (in milliseconds) is chosen with the **Ping Interval** function.



Procedure

- 1 Open the **Operation** menu.
- 2 Set **Ping Mode** to *Interval*.
- 3 Specify the interval between each "ping".
 - a Click either side (+ or -) of the **Ping Interval** button to select the requested time between each "ping".

- b Click **Ping Interval** to open it, and type the requested time between each "ping".



Select either side of the button to choose a value. Select the middle of the button to open it. If you have a keyboard connected to the ES80, you can type the requested value into the text box.

You can also change the value by selecting - and holding - the middle of the button, and move the cursor sideways. Move the cursor towards left to reduce the value, or towards right to increase the value. Release the mouse button when the requested value is shown in the button.

- 4 On the **Operation** menu, set **Ping** to *On*.



- 5 Select the right symbol to start "pinging".

Verifying or changing the environmental parameters

In order to make correct measurements of the targets in the water column, as well as the current depth, you must set up the correct environmental parameters.

Context

In order to obtain accurate depth readings and fish echoes, it is very important that the sound speed through the water is set correctly. Several parameters are required to calculate the correct sound speed value. If these parameters are not known to you, use the default value 1494 m/s. This is a typical mean value for sound speed.

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Environment**.



Observe that the **Environment** dialog box opens.

- 3 Specify if you work in fresh or salt water.
- 4 Specify the relevant environmental parameters.
- 5 Specify the sound speed.

If you select *Calculated*, the ES80 will calculate the sound speed based on the parameters you have provided. If you select *Manual*, you can provide your own value.

- 6 To study the resulting absorption curve, observe the field at the bottom of the dialog box.
To increase the physical size of the curve, simply increase the size of the dialog box.
- 7 Select **OK** to save the chosen settings and close the dialog box.

Defining the sound speed close to the transducer

The sound speed close to the transducer face is an important parameter for maximum accuracy. You can define the sound speed at the transducer manually, or retrieve the information from a dedicated sensor.

Context

Many users mount a sensor close to the transducer face in order to measure the sound speed. The sensor is often referred to as a "sound velocity probe". If the sensor is not mounted, the sound speed information must be provided manually.

Note

The sensor is not a part of the ES80 system. This is a commercial item that can be purchased locally.

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Environment**.



Observe that the **Environment** dialog box opens.

- 3 Open the **Transducer Face** page.
- 4 Select *Probe* if you have a suitable sensor connected to your ES80.

By selecting **Probe**, the sound speed values from the sensor close to the transducer face are received. The information is then included in the raw data files.

- 5 Select *Manual* if you do not have a suitable sensor.
Specify a manual sound speed value.
- 6 Select **OK** to save the chosen settings and close the dialog box.

Opening the context sensitive on-line help

The ES80 is provided with an extensive context sensitive on-line help system. All information of the ES80 *Reference manual* is also provided in the on-line help. The on-line help can be opened from all dialog boxes in the ES80 user interface. You can also use the **Help** button on the top bar.

Context

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 ES80 on-line help may not be available for the language you have chosen for the user interface. If your language is not supported, the English on-line help is provided.

[Context sensitive on-line help, page 67](#)

Procedure

- 1 Select **Help** on the top bar.

The on-line help file opens on its start page. Observe the menu on the left side of the help window. If you have a computer keyboard connected, you can use the search functionality.



[Help button description, page 220](#)

- 2 Select **Help** in the top right corner of each dialog box.

The description of the relevant dialog box opens. Observe the menu on the left side of the help window. If you have a computer keyboard connected, you can use the search functionality.

Controlling the gain and range settings

Topics

Adjusting the gain (echo sensitivity), page 83

Adjusting the TVG (Time Variable Gain) setting, page 85

Choosing **Range** and **Start Range** values in a surface related echogram, page 86

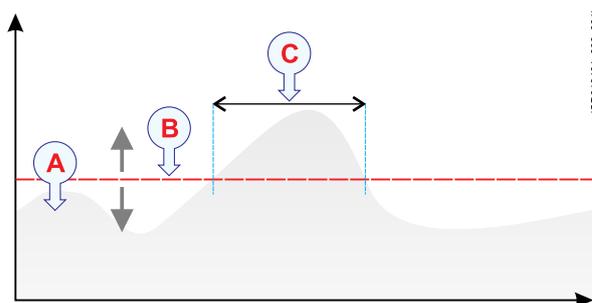
Choosing **Range** and **Start Range** values in a bottom related echogram, page 87

Adjusting the gain (echo sensitivity)

You can compare this gain setting with the volume control on your car radio. When the gain is increased, the echoes will appear stronger. Weak echoes will be easier to see. However, since you also increase the acoustic noise in the reception, the ES80 presentations will also show this noise. Too much gain may therefore "distort" the presentation.

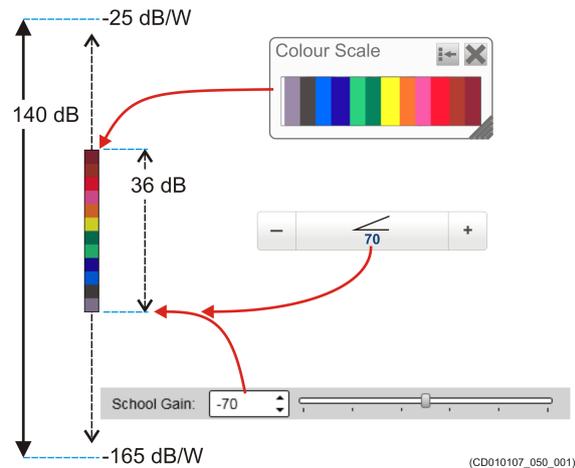
Context

Comparing the gain function with the volume control on your car radio is not very accurate. In fact, the gain in the ES80 is constant. The **Gain** function is used to adjust the sensitivity. This done by controlling the minimum level of detection. When you *increase* the gain level (more positive number) , you reduce the minimum level, and thus *increase* the sensitivity.



*The echo strength (A) changes with time. The minimum level of detection (B) is adjusted up or down with the **Gain** function. Increasing the **Gain** with a more positive number reduces the minimum level, and this increases the sensitivity. Only echoes over the minimum level are shown in the echogram (C).*

The ES80 has a dynamic range of 140 dB. This means that the ES80 can receive both very strong and very weak echoes. Actually, the ES80 will detect echoes from plankton to whales, bottom on most depths, and present the information free from distortion. As a comparison, our old echo sounders ES380 and ET100 had - using analogue TVG - a dynamic range corresponding to approximately 65 dB.



Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Observe the **Gain** button.



- 3 The following methods can be used for this adjustment.

- **Method 1:** Click [+] or [-] to choose the level.
- **Method 2:** Click the middle of the button, hold the mouse button depressed. Drag the cursor sideways to increase or decrease the level.
- **Method 3:** Click the middle of the button to open the menu. Type the requested value.

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

Note

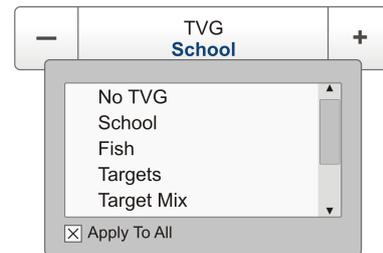
*Do not confuse this **Gain** setting with the **TVG** (Time Varied Gain) setting.*

Adjusting the TVG (Time Variable Gain) setting

When an acoustic pulse is sent through the water, it will gradually lose its energy. The greater the distance between the transducer and the target(s), the greater the loss of energy. The TVG (Time Variable Gain) function is used to compensate the received echo data for the loss of acoustic energy due to geometric spread and absorption. Use the TVG button or the **Echogram** dialog box.

Context

The TVG compensation is designed to counteract the natural phenomena of geometric spread and absorption loss. This is done in the ES80 using digital signal processing. The TVG compensation is expressed as a logarithmic curve. The TVG curve can be selected with several different slopes, each having different gain regulations. The curves are identified as $X \log TVG$, where the coefficient "X" is an integer. Typical values for "X" are 10 to 40.



Tip

You can select TVG using this function. You can also adjust the TVG setting in the Echogram dialog box. The TVG function is located on the Echogram page.

*The ES80 allows you to use different TVG compensation for the echoes from the water column than from the bottom. By making the bottom echoes individually adjustable, you can fine tune the presentation from the bottom to investigate the bottom type and conditions. The **Bottom TVG** adjustment has no effect on fish close to the bottom. To adjust the **Bottom TVG**, open the **Echogram** dialog box.*

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 Open the **Active** menu.
- 3 Locate the **TVG** button.



- 4 Choose your requested setting for TVG (Time Variable Gain).
- 5 Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.

Choosing **Range** and **Start Range** values in a surface related echogram

A *Surface* echogram is mainly used when you wish to look at the entire water column starting from the sea surface and down to the bottom. In a *Surface* echogram, the start depth of the echogram is defined by the positive **Start Range** depth value. The range from this start depth and down is defined by the **Range** value.

Context

The **Range** setting defines how "deep" you wish the ES80 to detect echoes. In other words, this is the vertical distance between the "top" and the "bottom" of the echogram. The **Range** setting specifies the "bottom" depth, while the **Start Range** setting specifies the "top" depth.

The range you specify applies to the currently selected echogram (identified with a thick border). Several echogram types are available.

In a *Surface* echogram, the **Start Range** value is used to determine from which depth the echogram shall start. This is normally chosen to be a few meters below the sea surface. The **Range** value is then used to define the vertical extension of the echogram. The **Range** may be set to *Auto*, but for scientific purposes a fixed range is recommended. The *Auto* setting allows the ES80 to automatically determine the depth range based on the bottom detection.

Example

Start Range in a surface related echogram

In a surface echogram, set the **Start Range** value to 0 meters. This will make the echogram start from the sea surface (provided that the transducer offset has been defined). Set **Range** to the current depth plus 20 meters. The echogram will now show the area from the sea surface and down to 20 meters "below" the bottom. The bottom contour is easily detected when the depth changes.

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 3 Locate the **Start Range** function.



- 4 Choose a positive value for **Start Range** to place the top of the echogram at the preferred depth under the sea surface.

The following methods can be used for this adjustment.

- Click [+] or [-] to choose the requested setting.
- Click the middle of the button, hold the mouse button depressed. Drag the cursor sideways to increase or decrease the level.
- Click the middle of the button to open the menu. Type the requested value.

You can only type a new value if a computer keyboard is connected to your ES80 Processor Unit.

- 5 Locate the **Range** function.



- 6 Choose a positive value for **Range** to place the bottom of the echogram at the preferred depth over or under the bottom.

Choosing **Range** and **Start Range** values in a bottom related echogram

A *Bottom* echogram is mainly used when you wish to examine the echoes from fish close to the bottom. In a *Bottom* echogram, the start depth of the echogram is defined by the negative **Start Range** depth value. The range from this start depth is defined by the **Range** value.

Context

The **Range** setting defines how "deep" you wish the ES80 to detect echoes. In other words, this is the vertical distance between the "top" and the "bottom" of the echogram. The **Range** setting specifies the "bottom" depth, while the **Start Range** setting specifies the "top" depth.

The range you specify applies to the currently selected echogram (identified with a thick border). Several echogram types are available.

In a *Bottom* echogram, the **Range** value is "added" to the **Start Range** value to determine the vertical depth of the echogram. The **Start Range** value must be negative because the echogram shall start from a preferred height over the bottom.

Example

Start Range and Range in bottom related echogram

In a bottom echogram, set the **Start Range** value to -5 meters. This will make the echogram start from 5 meters above the bottom. Set **Range** to the 5 meters plus $10 = 15$ meters. The echogram will now show the area from 5 meters above the depth, and down to 10 meters "below" the bottom. The bottom contour will appear as a flat line.

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 3 Locate the **Start Range** function.



- 4 Choose a negative value for **Start Range** to place the start depth at the preferred distance over the bottom.

The following methods can be used for this adjustment.

- Click [+] or [-] to choose the requested setting.
- Click the middle of the button, hold the mouse button depressed. Drag the cursor sideways to increase or decrease the level.
- Click the middle of the button to open the menu. Type the requested value.

You can only type a new value if a computer keyboard is connected to your ES80 Processor Unit.

- 5 Locate the **Range** function.



- 6 Choose a positive value for **Range** to place the bottom of the echogram at the preferred depth under the bottom.

Recording and replaying raw echo data

Topics

[Defining the file and folder settings for data recording, page 89](#)

[Recording echo data, page 90](#)

[Selecting *Replay* operational mode, page 92](#)

[Choosing which echo data file\(s\) to replay, page 93](#)

[Accessing the echo data files to delete, move or copy them, page 94](#)

Defining the file and folder settings for data recording

The **Record** function allows you to record echo data. The data are saved on the Processor Unit hard disk - or on an external data storage device - according to the preferences you have defined.

Context

The **File Setup** parameters control how and where the recorded files are saved on the Processor Unit hard disk, or on an external disk. By adding a file name prefix, you can also identify files recorded from any specific mission or survey. You can also define a maximum size of the data files.

Tip

Data files will normally become very large. If you wish to record large amounts of ES80 data, make sure that you have enough space on your hard disk. Unless your Processor Unit is equipped with a very large disk, we recommend that you save the data to an external storage device.

Set up the file and folder parameters before you start the recording. If you wish to save your recorded data on an external hard disk, make sure that it is connected to the Processor Unit.

*If the current file size gets too big during recording, use the **Split File** function on the **Record** button. This will close the current file, and then automatically continue recording to a new file. **Record** is located on the **Operation** menu.*

Do not confuse the **Record** function with the automatic **History** function. Unless you really need to record raw data for playback purposes, you should use this function with care. The data files will fill your hard disk very fast! The *History* function saves the echogram images automatically on the Processor Unit hard disk. These images can be recalled using the *History* information pane. The information in the *History* presentation is the same as on the original echogram presentation.

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Output**.



Observe that the **Output** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Output** dialog box, select **File Setup** to open the page.
- 4 On the **File Setup** page, define the recording parameters.
- 5 Select **OK** to save the chosen settings and close the dialog box.

Recording echo data

The raw data recording function provided by the ES80 allows you to save echo data using the *.raw format. The data files can be copied or moved to other recordable media, or to another computer on the network. You can keep the recorded files for scientific studies, future references, or for training purposes. The recording is controlled by the **Record** function.

Prerequisites

Before you start data recording, make sure that you have defined where to store the files. To define which disks and folders to use to save the data files, use the **File Setup** page. The **File Setup** page is located in the **Output** dialog box. If you wish to save your recorded data on an external hard disk, make sure that it is connected to the Processor Unit.

[Defining the file and folder settings for data recording, page 89](#)

Context

On the ES80, you can save and recall echo information using the following methods and formats.

- Bitmap images (containing the full ES80 screen capture) are saved whenever you select **Screen Capture** on the top bar. The screen captures you make are saved on the hard disk in the Processor Unit on JPG format. The **Screen Captures** tab on the bottom bar opens a dedicated viewer that allows you to open these images. Through the viewer you can also open the file folder on the Processor Unit hard disk. This allows you to copy, rename or delete the image files.
- Raw data is recorded using the **Record** function on the **Operation** menu. To play back data, use **Operation** to select *Replay* mode. This mode allows you to replay previously recorded data on the ES80. When in *Replay* mode, the ES80 is not able to transmit ("ping"). For this reason, the ES80 is inactive during playback.
- A "history file" is recorded automatically and continuously. When the file is full, it will start to overwrite the oldest data, thus creating a "ring buffer". These images can be recalled using the *History* information pane. The information in

the *History* presentation is the same as on the original echogram presentation. To open the *History* information pane, select the button on the top bar.

Note

*Do not confuse the **Record** function with the automatic **History** function. Unless you really need to record raw data for playback purposes, you should use this function with care. The data files will fill your hard disk very fast! The *History* function saves the echogram images automatically on the Processor Unit hard disk. These images can be recalled using the *History* information pane. The information in the *History* presentation is the same as on the original echogram presentation.*

Raw data files will normally become very large. If you wish to record large amounts of ES80 data, make sure that you have enough space on your hard disk. Unless your Processor Unit is equipped with a very large disk, we recommend that you save the data to an external storage device.

Procedure

- 1 Open the **Operation** menu.
- 2 To start data recording, open the **Record** button, and select *On*.



Alternatively, simply click the red circle on the right side of the button.

The **Record** button on the top bar changes colour to reflect that recording is active.

- 3 If you wish to reduce the size of the data file you are recording, click the middle of the **Record** button to open it, and select **Split File**.

The current file is closed, and a new file is automatically started.

- 4 To stop recording, open the **Record** button, and select *Off*.

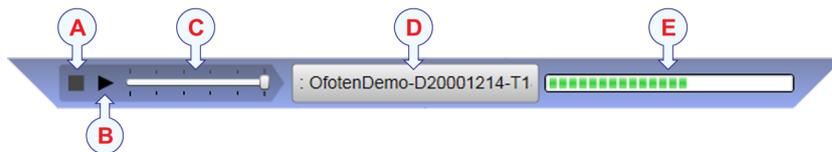
Alternatively, simply select the black rectangle on the left side of the button to stop the recording.

Selecting *Replay* operational mode

The *Replay* operational mode allows you to play back previously recorded raw data. The ES80 is not operational while in *Replay* mode. Neither transmission nor reception takes place.

Context

All playback is controlled by the replay bar.



- A** *Stop:* Select this button to stop the playback.
- B** *Play/Pause:* Select this button to start the playback, or to pause it.
- C** *Replay speed:* Select this slider and move it sideways to adjust the replay speed.
- D** *Replay file:* This button shows which file you are currently playing.
- E** *Progress:* This bar shows you the replay progress of the current file.

Procedure

- 1 Open the **Operation** menu.
- 2 Set **Operation** to *Replay*.



The replay bar is automatically opened. It is positioned directly below the top bar at the top of the ES80 presentation.

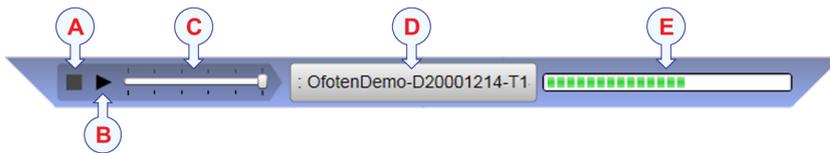
If you need to select which files to replay, click **Replay File** under the **Operation** button. You can also click the large button in the middle of the replay bar.

- 3 Click the **Play/Pause** button to start the playback.
- 4 To stop the replay, choose any other operational mode.

Choosing which echo data file(s) to replay

Every time you record echo data, the information is stored on the Processor Unit hard disk. Depending on your initial settings, the files may also be stored on a USB hard disk or even a network disk. The echo data files can be retrieved, and played back on the ES80.

All playback is controlled by the replay bar.



- A** *Stop:* Select this button to stop the playback.
- B** *Play/Pause:* Select this button to start the playback, or to pause it.
- C** *Replay speed:* Select this slider and move it sideways to adjust the replay speed.
- D** *Replay file:* This button shows which file you are currently playing.
- E** *Progress:* This bar shows you the replay progress of the current file.

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Operation** to see the available choices.
- 3 Select **Replay File** to open the dialog box.



The **Replay File** dialog box allows you to choose which file(s) to play back. The file names were generated automatically during recording, and each file is identified with the time and date it was made.

- 4 Select **Add** to choose a replay file.

A standard operating system dialog box is used to locate and select the files you wish to use.

- 5 If you wish to replay the selected files in an "endless" loop, select **Loop**.
- 6 Select **OK** to save the chosen settings and close the dialog box.
- 7 Set **Operation** to *Replay*.



The replay bar is automatically opened. It is positioned directly below the top bar at the top of the ES80 presentation.

Accessing the echo data files to delete, move or copy them

The raw data recording function provided by the ES80 allows you to save echo data using the *.raw format. You can save to the Processor Unit hard disk, or onto an external disk. You can keep the recorded files for scientific studies, future references, or for training purposes. The data files can be copied or moved to other recordable media, or to another computer on the network.

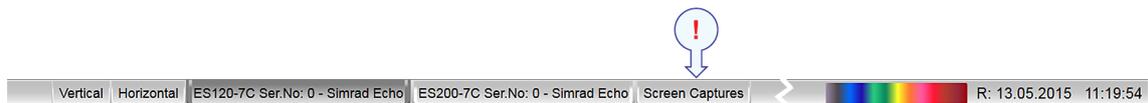
Prerequisites

This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

You need a data storage device. This is typically a large capacity USB flash drive or a small portable hard disk. You can also connect the Processor Unit to a network, and copy the files to a server.

Procedure

- 1 Prepare a data storage device.
- 2 Observe the **Screen Captures** tab at the bottom of the ES80 presentation.



- 3 Select the **Screen Captures** tab to open the screen capture browser.
- 4 In the browser, select **Open Image Folder** to open the operating system folder.
- 5 In the file manager utility, locate the folder you defined on the **File Setup** page.
- 6 Use the functionality provided by the operating system to delete the files, or to copy or move them to the storage device.
- 7 Close the file manager utility.
- 8 To resume normal ES80 operation, select any other tab on the bottom bar.

Saving and recalling screen captures

Topics

[Saving an echogram screen capture image, page 95](#)

[Recalling single echogram screen capture images, page 96](#)

[Accessing the screen capture images to delete, move or copy them, page 96](#)

Saving an echogram screen capture image

When you use the ES80 actively, you may need to make a screen capture to save an instantaneous image of the current presentation. The screen captures you make are saved on the hard disk in the Processor Unit on JPG format.

Context

On the ES80, you can save and recall echo information using the following methods and formats.

- Bitmap images (containing the full ES80 screen capture) are saved whenever you select **Screen Capture** on the top bar. The screen captures you make are saved on the hard disk in the Processor Unit on JPG format. The **Screen Captures** tab on the bottom bar opens a dedicated viewer that allows you to open these images. Through the viewer you can also open the file folder on the Processor Unit hard disk. This allows you to copy, rename or delete the image files.
- Raw data is recorded using the **Record** function on the **Operation** menu. To play back data, use **Operation** to select *Replay* mode. This mode allows you to replay previously recorded data on the ES80. When in *Replay* mode, the ES80 is not able to transmit ("ping"). For this reason, the ES80 is inactive during playback.
- A "history file" is recorded automatically and continuously. When the file is full, it will start to overwrite the oldest data, thus creating a "ring buffer". These images can be recalled using the *History* information pane. The information in the *History* presentation is the same as on the original echogram presentation. To open the *History* information pane, select the button on the top bar.

Procedure

- 1 Before you make the screen capture, you may wish to place an event marker on the echogram.
The event marker may be useful later to identify the information.
- 2 Observe the **Screen Capture** button on the top bar.

[Screen Capture button description, page 210](#)

- 3 Select **Screen Capture** to make a copy of the current ES80 presentation.
Every time you do this, a new image file is created.



Result

The screen captures you make are saved on the hard disk in the Processor Unit on JPG format. Each capture includes the entire visible presentation. It includes the current echograms and the menu.

Recalling single echogram screen capture images

The **Screen Capture** function on the top bar allows you to make a copy of the current ES80 presentation. The screen captures you make are saved on the hard disk in the Processor Unit on JPG format. The **Screen Captures** tab on the bottom bar opens a viewer that allows you to open these images.

Context

The screen capture browser simply presents a miniature version of each screen capture that you have made. Each file is provided in standard JPG format, which can be opened by most commercial bitmap editors. The file names are created automatically using the date and time when you used the **Screen Capture** button.

Procedure

- 1 Observe the **Screen Captures** tab at the bottom of the ES80 presentation.



- 2 Select the **Screen Captures** tab to open the screen capture browser.
- 3 Double-click the image you wish to enlarge.
- 4 Select **Return to Browser** to close the image.
- 5 To resume normal ES80 operation, select any other tab on the bottom bar.

Accessing the screen capture images to delete, move or copy them

Once the screen capture images have been saved, you may also wish to delete them, copy them, or move them from the Processor Unit to a separate storage device.

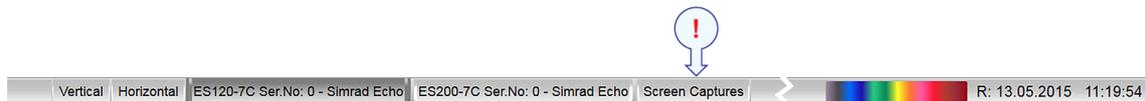
Prerequisites

This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

You need a data storage device. This is typically a large capacity USB flash drive or a small portable hard disk. You can also connect the Processor Unit to a network, and copy the files to a server.

Procedure

- 1 Prepare a data storage device.
- 2 Observe the **Screen Captures** tab at the bottom of the ES80 presentation.



- 3 Select the **Screen Captures** tab to open the screen capture browser.
- 4 In the browser, select **Open Image Folder** to open the operating system folder.
- 5 Use the functionality provided by the operating system to delete the files, or to copy or move them to the storage device.
- 6 Close the file manager utility.
- 7 To resume normal ES80 operation, select any other tab on the bottom bar.

Setting up the echogram presentation

Topics

- Selecting which echogram type to use, page 98
- Selecting echogram views on the bottom bar, page 100
- Selecting the echogram presentation layout, page 101
- Changing the size of the echogram views, page 102
- Defining the ping (transmission) modes, page 102
- Removing noise and false echoes from the echogram, page 104
- Choosing the colours used to present the echograms, page 105
- Adjusting the TVG (Time Variable Gain) setting, page 106
- Adjusting the TVG in the Echogram dialog box, page 107
- Selecting the horizontal scale in the echograms, page 109
- Adding scale labels to the echograms, page 110
- Enhancing the bottom contour in the echograms, page 111
- Adding vertical marker lines to the echogram, page 112
- Adding horizontal depth lines to the echograms, page 113
- Adding a variable depth line to the echogram, page 114
- Adding automatic trawl lines to the echogram presentation, page 115
- Adding manual trawl lines to the echogram presentation, page 116
- Adding a single manual annotation to the echogram, page 116
- Adding annotations to the echograms, page 117
- Investigating the sub-bottom conditions, page 118

Selecting which echogram type to use

The ES80 supports several different echogram types. Each echogram is shown in a separate view in the ES80 presentation. To select which echogram types you wish to see in the ES80 presentations, use the **Echogram** dialog box.

Context

Use this function to select what kind of echogram you wish to see in the current ("active") view.

- **Surface**

A *Surface* echogram is mainly used when you wish to look at the entire water column starting from the sea surface and down to the bottom. Since this echogram is referenced to the sea surface, the bottom contour will vary with the actual depth.

- **Bottom**

A *Bottom* echogram is mainly used when you wish to examine the echoes from fish close to the bottom. Since this echogram is referenced to the bottom, the sea surface will vary with the actual depth, while the bottom is drawn flat.

- **Pelagic**

A *Pelagic* echogram is mainly used when you wish to look at the water column starting from any distance below the sea surface down towards the bottom, but without seeing the bottom contour.

- **Trawl**

Trawl sensor systems (such as Simrad PI, PX and ITI) communicate headrope depth, and/or the distance from the headrope to the footrope (trawl opening), to the ES80 at regular intervals. This information is required for the trawl echogram to be generated. The *Trawl* echogram covers the vertical opening of the trawl with reference to the depth of the headrope.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.

- 2 Open the **Active** menu.

- 3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Echogram** to open the page.
- 5 Use the **Echogram Type** function to select the type you wish to apply to the chosen view.
- 6 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Close the dialog box.

Further requirements

If necessary, adjust the **Range** and **Start Range** settings accordingly.

Selecting echogram views on the bottom bar

The bottom bar in the ES80 presentation allows you to select which echogram views you wish to see, and how these are organized. The number of tabs available on the bottom bar depends on how many channels your ES80 has.

Context

The bottom bar is available all the time. The tabs on the bottom bar allows you to choose channel and presentation mode. A dedicated tab provides you with a special view to see the screen captures you have made. The bottom bar also shows you the current colour scale, as well as time and date.

The number of tabs available on the bottom bar depends on how many channels your ES80 has. Two tab "groups" allow you to select channels and views. This example shows the ES80 with two channels. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

The tabs on the bottom bar allows you to control the echogram presentation.

- **Selecting presentation modes**

Three presentation modes are available when you wish to see all the echogram channels simultaneously in the ES80 presentation. The three tabs will arrange the echogram views vertically, horizontally, or in rectangular rows and columns.

The **Vertical** and **Horizontal** tabs are only shown if you have two or more channels in use on your ES80. The **Square** tab is only shown if you have three or more channels.

By default, the echogram views are automatically arranged in the ES80 presentation. You can click and drag the border on each individual view to change its size. The size of the other views are reduced accordingly.

- **Selecting individual echogram channels**

Each channel is shown with a dedicated tab. The channel is identified with the name of the transducer in use. This name is the custom name you provided when you installed the transducer. Select a specific transducer tab to see only that channel in the ES80 presentation. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Tip

*In a large system with many transceivers and transducers in simultaneous use, it can be useful to hide channels temporarily from view. When two or more echograms are shown, you can use the **Layout** dialog box to decide in which order - from top to bottom or left to right - you wish to see the echogram channels.*

*The **Layout** dialog box is located on the **Display** menu.*

Procedure

- Observe the bottom bar at the bottom of the ES80 presentation.

[Bottom bar description, page 267](#)



- Select the appropriate tab to set up the presentation of the echogram views.
 - Select **Square**, **Vertical** or **Horizontal** to arrange the echogram views accordingly.*
 - Click the name of a transducer to see the relevant echogram. The echograms from the other channels are hidden.*

Selecting the echogram presentation layout

In a large system with many transceivers and transducers in simultaneous use, it can be useful to hide channels temporarily from view. When two or more echograms are shown, you can use the **Layout** dialog box to decide in which order - from top to bottom or left to right - you wish to see the echogram channels. The **Layout** dialog box is located on the **Display** menu.

Context

The ES80 can work with several channels simultaneously. It is possible to select which channels to see in the ES80 presentation. You can also position the echograms in relation to each other.

In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Tip

The bottom bar in the ES80 presentation allows you to select which echogram views you wish to see, and how these are organized. The number of tabs available on the bottom bar depends on how many channels your ES80 has.

Procedure

- 1 Open the **Display** menu.
- 2 Select **Layout**.



Observe that the **Layout** dialog box opens.

- 3 Verify that all the current channels are listed.
- 4 Select **Visible** to hide or view the specific echograms.
- 5 Select the two arrows on the right hand side of the **Layout** dialog box to place the echograms in the preferred vertical order.
- 6 Select **OK** to save the chosen settings and close the dialog box.

Changing the size of the echogram views

You can modify the size of each individual echogram view in the ES80 presentation.

Context

The physical size of each echogram view can be changed individually. The content in a view that changes size will automatically adjust to take full advantage of the space available. The modifications you make are erased when you click one of the tabs on the bottom bar.

Tip

*When two or more echograms are shown, you can use the **Layout** dialog box to decide in which order - from top to bottom or left to right - you wish to see the echogram channels.*

[Selecting the echogram presentation layout, page 101](#)

The bottom bar in the ES80 presentation allows you to select which echogram views you wish to see, and how these are organized. The number of tabs available on the bottom bar depends on how many channels your ES80 has. In this context, the phrase channel is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Procedure

- 1 Move the cursor to the border line between two echogram views.
Observe that the cursor changes its shape; it now appears as two parallel lines with arrows pointing sideways or up/down.
- 2 Change the size of the view.
 - a Click on the left mouse button, and keep it depressed.
 - b Move the mouse - or roll the control wheel - and observe that the border line moves.
 - c Release the mouse button when the border line has been moved to desired position.

Defining the ping (transmission) modes

You can easily control how often the ES80 shall transmit acoustic energy (a "ping") into the water. You can disable the transmission altogether, set it to operate as fast as possible, or select a timed interval.

Context

Once pinging is *On*, use the **Ping Mode** function to choose how often the ES80 shall transmit. This function allows you to control the *behavior* of the transmissions ("pinging").

- If you choose *Single Ping*, you can transmit single pings by clicking the ping symbol on the **Ping** button.
- If you choose *Interval*, you must define the time between each "ping" with the **Ping Interval** function.
- If you choose *Maximum*, the ES80 will transmit ("ping") as often as possible.

Procedure

- 1 Open the **Operation** menu.
- 2 On the **Operation** menu, set **Ping** to *On*.

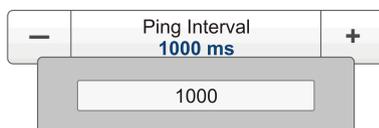


- Select the right symbol to start "pinging".
 - Select the left symbol to stop "pinging".
 - Select the middle of the button to open the button menu.
- 3 Set **Ping Mode** to *Maximum*.



This will make the ES80 ping with maximum ping rate ("speed"). The time between each ping ("ping rate") depends mainly on the current range. In some systems, a low performance Processor Unit and/or a slow hard disk may reduce the ping rate. How fast your Processor Unit communicates with external peripherals may also have an effect on the ping rate.

- 4 Set **Ping Mode** to *Interval*.
- 5 Specify the interval between each "ping".
 - a Click either side (+ or –) of the **Ping Interval** button to select the requested time between each "ping".
 - b Click **Ping Interval** to open it, and type the requested time between each "ping".



Select either side of the button to choose a value. Select the middle of the button to open it. If you have a keyboard connected to the ES80, you can type the requested value into the text box.

You can also change the value by selecting - and holding - the middle of the button, and move the cursor sideways. Move the cursor towards left to reduce the value, or towards right to increase the value. Release the mouse button when the requested value is shown in the button.

- 6 Set **Ping Mode** to *Single Ping*.

- 7 Select the "ping" symbol on the right side of the **Ping** button to transmit one single "ping".



Removing noise and false echoes from the echogram

The **Ping-Ping Filter** analyses the historical information from previous consecutive pings in order to remove unwanted noise and interference from the ES80 presentation.

Context



The following filter options are provided.

- **Off**
The filter is disabled. The historical information from previous transmissions ("pings") is not used to remove noise and unwanted echoes.
- **2 of 3**
For the current echo to be shown, the same echo must be present in at least *two* of the previous *three* pings.
- **2 of 2**
For the current echo to be shown, the same echo must be present in *both* of the previous *two* pings.
- **3 of 3**
For the current echo to be shown, the same echo must be present in *all* of the previous *three* pings.

Procedure

- 1 Open the **Active** menu.
- 2 Locate the **Ping-Ping Filter** button.



- 3 Choose your requested setting.
- 4 Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.

Choosing the colours used to present the echograms

Several different colour scales are predefined and available for the presentation of echograms. You can easily choose which colours to use. The presentation colours have no effect on the operational performance of the ES80. The **Colour Setup** dialog box controls the presentation colours used by the ES80. This includes the palette ("skin"), the number of colours in use, and the colour scale.

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.

Tip

*By default you have 64 or 12 colours available to present the echoes, and a selection of palettes. The colour scale can be retrieved any time by selecting **Colour Scale** on the top bar. The chosen colours are shown at the bottom of the ES80 presentation.*

If you choose to use many colours, the resolution of the ES80 presentation is greatly improved. It is then easier to distinguish the difference between the various echoes of different size and/or target strength.

Tip

*You can adjust the echo level range by means of the **Colour Scale** settings. These are opened from the Colour Scale information pane. You can find the same settings in the **Information Pane Options** dialog box on the **Active** menu.*



The following colour scales are available.

12 colours

Sonar colours

Smooth ES

Grayscale

BI500 colours



The **Smooth Echosounder** scale is based on the standard 12-colour scale. Additional colours have been added between these to make "smoother" colour transitions.

Procedure

- 1 Open the **Display** menu.
- 2 Select **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 64 colours.

- 4 Select the colour scale you wish to use.
- 5 At the bottom of the dialog box, select **Apply** to preview your choice(s).
- 6 Select **OK** to save the chosen setting and close the dialog box.

Adjusting the TVG (Time Variable Gain) setting

When an acoustic pulse is sent through the water, it will gradually lose its energy. The greater the distance between the transducer and the target(s), the greater the loss of energy. The TVG (Time Variable Gain) function is used to compensate the received echo data for the loss of acoustic energy due to geometric spread and absorption. Use the **TVG** button or the **Echogram** dialog box.

Context

The TVG compensation is designed to counteract the natural phenomena of geometric spread and absorption loss. This is done in the ES80 using digital signal processing. The TVG compensation is expressed as a logarithmic curve. The TVG curve can be selected with several different slopes, each having different gain regulations. The curves are identified as $X \log TVG$, where the coefficient "X" is an integer. Typical values for "X" are 10 to 40.



Tip

*You can select TVG using this function. You can also adjust the TVG setting in the **Echogram** dialog box. The **TVG** function is located on the **Echogram** page.*

*The ES80 allows you to use different TVG compensation for the echoes from the water column than from the bottom. By making the bottom echoes individually adjustable, you can fine tune the presentation from the bottom to investigate the bottom type and conditions. The **Bottom TVG** adjustment has no effect on fish close to the bottom. To adjust the **Bottom TVG**, open the **Echogram** dialog box.*

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 Open the **Active** menu.

- 3 Locate the TVG button.



- 4 Choose your requested setting for TVG (Time Variable Gain).
- 5 Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.

Adjusting the TVG in the Echogram dialog box

The Time Varied Gain (TVG) can be defined in the **Echogram** dialog box, or by means of the TVG function on the **Active** menu.

Context

When an acoustic pulse is sent through the water, it will gradually lose its energy. The greater the distance between the transducer and the target(s), the greater the loss of energy.

- **Geometric spread**

Once transmitted, the acoustic energy will spread out to form a circular beam. The width of this beam increases with the physical distance to the target(s).

- **Absorption loss**

Depending on the salinity and temperature, the water will absorb some of the energy from the transmission. The absorption loss increases as the range increases.

Both the geometric spread and the absorption will also have an effect on the returned echo signal. That is why we normally refer to these factors as the *two-way transmission loss*.

The TVG compensation is designed to counteract the natural phenomena of geometric spread and absorption loss. This is done in the ES80 using digital signal processing.

The TVG compensation is expressed as a logarithmic curve. The TVG curve can be selected with several different slopes, each having different gain regulations. The curves are identified as $X \log TVG$, where the coefficient "X" is an integer. Typical values for "X" are 10 to 40.

Several TVG settings are available.

- **No TVG**

TVG compensation is not implemented. This setting is hardly ever used.

- **School (20 log R)**

This gain setting offers weaker amplification close to the bottom. It has been designed to provide the best echoes for schools. The physical size of a school allows you to detect it even with reduced gain.

- **Fish (40 log R)**

This gain setting provides larger amplification closer to the bottom. It has been designed to provide the best echoes from single fish.

- **Targets (40 log R)**

This setting uses the same TVG amplification as **Fish (40 log R)**, but additional filtering and compensation is implemented.

Only echoes detected and interpreted as single fish are shown. The echoes are compensated for their physical position in the beam (beam compensation). This means that fish in the outer region of the beam are adjusted to correct size even though their echoes are weaker.

Note

This TVG setting only works with split beam transducers.

- **Target Mix (40 log R)**

This setting uses the same TVG amplification as **Fish (40 log R)**, but additional beam compensation is implemented. Echoes detected and interpreted as single fish are adjusted to their correct size according to their physical position in the beam.

Note

This TVG setting only works with split beam transducers.

- **User**

This setting allows you to define your own TVG setting. To choose your own TVG curve, use the dedicated function in the **Echogram** dialog box.

Note

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border. Normally, you must first click in the chosen echogram to "activate" it, and then choose the setting you wish to use.

Procedure

- 1 Click in the echogram view you wish to change.

This will make the view "active". The "active" echogram view is identified with a thicker border.

- 2 Open the **Active** menu.
- 3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Echogram** to open the page.

- 5 Choose your requested setting for TVG (Time Variable Gain).
- 6 Apply the change you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Select **OK** to save the chosen settings and close the dialog box.

Selecting the horizontal scale in the echograms

The horizontal scale controls how "fast" the echograms move from right towards left across the ES80 presentation. You can change the horizontal scale on the **Horizontal Axis** page in the **Echogram** dialog box.

Context

The echograms travels from right towards left across the ES80 presentation. On the **Horizontal Axis** page you can choose the horizontal scale of the echogram. This controls the "speed" of the echogram.

- **Distance**

The horizontal scale of the echogram is based on sailed distance. Select resolution and unit.
- **Time**

The horizontal scale of the echogram is based on time. Select resolution and unit.
- **Ping**

The horizontal scale of the echogram is based on the number of transmissions ("pings") made. Select **View Size** to specify that the number of horizontal pixels shall define the number of displayed horizontal pings using one ping per pixel.
- **Speed**

The horizontal scale of the echogram is based on the relative speed you choose. Select speed with the ruler.

Note _____

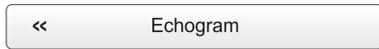
This is a visual enhancement. It does not have any effect on the ES80 performance.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.
- 2 Open the **Active** menu.

3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

4 On the left side of the **Echogram** dialog box, select **Horizontal Axis** to open the page.

5 Select the horizontal scale you wish to use.

6 Apply the change you have made.

- a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
- b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.

7 Select **OK** to close the dialog box.

Adding scale labels to the echograms

In order to identify the horizontal scale of your echogram views, you can enable scale labels.

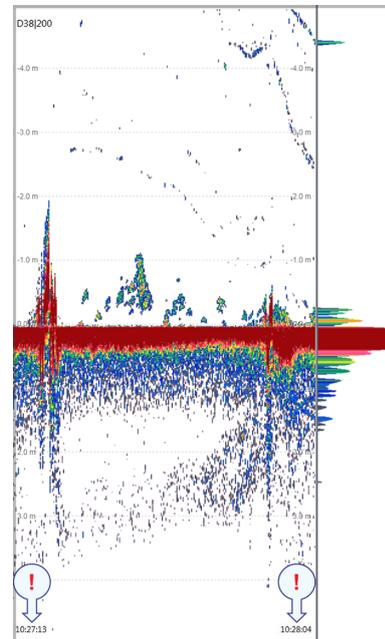
Context

Small labels are shown in the bottom left and right corners of the echogram. These labels can contain time or distance to identify the horizontal axis of the echogram. You can hide the labels from view.

The following label options are available.

- **None:** The labels are hidden
- **Auto:** The horizontal scale is set automatically
- **Time:** The horizontal scale is defined by time. The time shown in the bottom right corner of the echogram is then the current time (now).
- **Distance:** The horizontal scale is defined by distance. The distance shown in the bottom right corner of the echogram is then 0 nautical miles (starting point).

This is a visual enhancement. It does not have any effect on the ES80 performance.



Procedure

1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.

2 Open the **Active** menu.

3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Horizontal Axis** to open the page.
- 5 Choose the label you wish to use.
- 6 Apply the change you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Select **OK** to close the dialog box.

Enhancing the bottom contour in the echograms

In order to make the bottom easier to identify, certain visual enhancements may be applied. These enhancements are made using the **Lines** page in the **Echogram** dialog box.

Context

The following enhancements can be used to increase the readability of the bottom contour.

- **Bottom Line**

The *Bottom Line* can be added to your echogram to enhance the visual bottom detection. It appears as thin line that follows the bottom contour. The line is drawn in the current foreground colour.

- **White Line**

The *White Line* can be added to your echogram to enhance the visual bottom detection. It appears as thick line in the current background colour (normally white) that follows the bottom contour. This line will not remove information, it will simply "push" the echo information further down in order to make the bottom easier to see.

You can use the *White Line* and the *Bottom Line* functions simultaneously.

Note

This is a visual enhancement. It does not have any effect on the ES80 performance.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.

- 2 Open the **Active** menu.
- 3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Lines** to open the page.
- 5 Select *White Line* and/or *Bottom Line* to suit your preferences.
- 6 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Close the dialog box.

Adding vertical marker lines to the echogram

In order to create a horizontal scale, you can add short *Vertical Tick* marker lines to your echogram. These lines are used to measure time or distance.

Context

The following options are available.

- **None:** No vertical markers are shown.
- **Time:** A short vertical line in the upper part of the echogram once every specified number of minutes.
- **Distance:** A short vertical line in the upper part of the echogram once every specified number of 1/10 nautical miles.

Note

This is a visual enhancement. It does not have any effect on the ES80 performance.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.
- 2 Open the **Active** menu.

3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Lines** to open the page.
- 5 Select the vertical marker lines you wish to use.
- 6 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Close the dialog box.

Adding horizontal depth lines to the echograms

When enabled, equidistant horizontal scale lines are drawn inside the echogram in the current foreground colour; black during day and white during night.

Context

A maximum of 10 scale lines can be selected. No scale lines are drawn when the scale line count is set to 0 (zero).

Note

This is a visual enhancement. It does not have any effect on the ES80 performance.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.
- 2 Open the **Active** menu.
- 3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Lines** to open the page.
- 5 Select **Scale** to enable the function, and choose how many scale lines you wish to see.

- 6 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Close the dialog box.

Adding a variable depth line to the echogram

The variable depth line function offers a horizontal line with a depth readout. You can move this line up and down in your echogram view to read the depth.

Context

When enabled, a horizontal depth line is placed in the echogram. To move the depth line, click on it, and drag it up or down. The depth of the line is displayed in a small box at the left side of the echogram.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.
- 2 Open the **Active** menu.
- 3 Select **Echogram**.



- Observe that the **Echogram** dialog box opens.
- 4 On the left side of the **Echogram** dialog box, select **Lines** to open the page.
 - 5 Select **Variable Depth** to add a depth line to your echogram.

To move the depth line, click on it, and drag it up or down.
 - 6 Apply the change you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
 - 7 Select **OK** to close the dialog box.

Adding automatic trawl lines to the echogram presentation

Trawl sensor systems (such as Simrad PI, PX and ITI) communicate headrope depth, and/or the distance from the headrope to the footrope (trawl opening), to the ES80 at regular intervals. The information can be used to draw the upper and/or lower trawl lines in the ES80 echogram.

Prerequisites

In order to present the trawl lines automatically, a compatible trawl system must be connected to the ES80. A trawl with the relevant sensors mounted is deployed.

Context

A Simrad ITI (Integrated Trawl Instrumentation) system can be connected to the ES80. Communication with the ITI system is based on both NMEA and proprietary telegrams, and all necessary parameters are automatically defined. The information can be used to draw the upper and/or lower trawl lines in the ES80 echogram.

This is a visual enhancement. It does not have any effect on the ES80 performance.

Procedure

- 1 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.

- 2 Open the **Active** menu.
- 3 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 4 On the left side of the **Echogram** dialog box, select **Lines** to open the page.
- 5 Select **Trawl** to see the trawl lines in your echogram presentation.
- 6 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 7 Close the dialog box.

Adding manual trawl lines to the echogram presentation

When you use a trawl, the ES80 can draw the upper and lower trawl lines in the echogram.

Context

A Simrad ITI (Integrated Trawl Instrumentation) system can be connected to the ES80. Communication with the ITI system is based on both NMEA and proprietary telegrams, and all necessary parameters are automatically defined. The information can be used to draw the upper and/or lower trawl lines in the ES80 echogram.

If another trawl or catch monitoring system is used, and this system does not provide the trawl opening and/or trawl distance automatically, the values must be entered manually.

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Trawl** to open the page.
- 4 Use the spin box to provide the height of the trawl opening.
If you have a computer keyboard is connected to your Processor Unit, you can double-click in the spin box, and type a new value.
- 5 Use the spin box to provide the distance from the vessel to the trawl.
- 6 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Further requirements

In order to see the trawl lines in the echogram presentation, they must be enabled in the **Echogram** dialog box.

[Adding automatic trawl lines to the echogram presentation, page 115](#)

Adding a single manual annotation to the echogram

Sometimes it can be useful to place a single written comment on the echogram. The **Manual Annotation** dialog box offers that function.

Context

Several different annotation types may be added to the echogram. Annotations can only be added to the echogram while in *Normal* operational mode.

Tip

Use the **Annotations** page to type comments and insert annotations into the echograms. The **Annotations** page is located in the **Installation** dialog box.

[Adding annotations to the echograms, page 117](#)

Procedure

- 1 Click once in the relevant echogram view.

This will make the view "active". A thick border is placed on the selected view to visualize this.

- 2 Open the **Setup** menu.

- 3 Select **Manual Annotation**.



- 4 Type any text into the box.

The size of the box will adjust to the length of your text.

If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard.

- 5 Select **OK** to place the annotation in the echogram.
- 6 Select **Cancel** to close the dialog box.

Adding annotations to the echograms

When you study an echogram, it is often useful to add personal comments to it. Several different annotation types may be added to the echogram. They are displayed on the echogram if this feature is enabled in the **Echogram** dialog box.

Context

Use the **Annotations** page to type comments and insert annotations into the echograms. Comments can be used to identify specific events such as specific echoes, unusual bottom conditions, or simply for keeping track of time or distance. The **Annotations** page is located in the **Installation** dialog box.

The **Lines** page in the **Echogram** dialog box allows you to enable or disable annotations in the echograms. Annotations can only be added to the echogram while in *Normal* operational mode.

When you save raw data, the annotations you have defined are stored as annotation datagrams.

Procedure

- 1 Open the **Setup** menu.

- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Annotations**.

Observe that the **Annotations** page opens.

- 4 Specify the annotations you wish to use, and how you wish to trigger them.
- 5 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

- 6 Click once in the echogram view that you wish to change.

This will make the view "active". A thick border is placed on the selected view to visualize this.

- 7 Select the **Active** icon.

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

- 8 Select **Echogram**.



Observe that the **Echogram** dialog box opens.

- 9 Select the **Lines** tab to open the page.
- 10 Select the annotation types you wish to see in your echogram.
- 11 Apply the change(s) you have made.
 - a Select **Apply** if you wish to apply the chosen setting only to the currently active echogram view.
 - b Select **Apply to All** if you wish to use the chosen setting on all the echograms of the same type.
- 12 Close the dialog box.

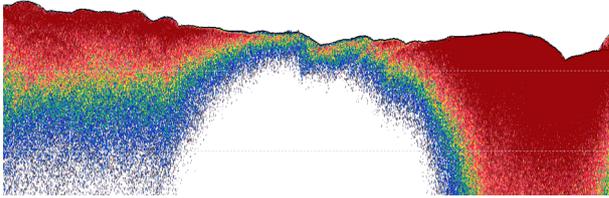
Investigating the sub-bottom conditions

The **Bottom Gain** setting controls the gain below the detected bottom depth. This gives you information about the current bottom conditions.

Context

Different bottom conditions (rock, sand, mud etc) will result in different bottom echoes in the ES80 echograms. By changing the bottom gain, the presentation is changed depending on the bottom type. You can thus learn more about the bottom.

Certain species are known to prefer specific bottom conditions. With more knowledge, you are better qualified to estimate the possible catch.



*The typical effect of the **Bottom Gain** adjustment*

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 Open the **Active** menu.
- 3 Locate the **Bottom Gain** function.



- 4 Set the **Bottom Gain** to your chosen value.

The following methods can be used for this adjustment.

- Click [+] or [-] to choose the requested setting.
- Click the middle of the button, hold the mouse button depressed. Drag the cursor sideways to increase or decrease the level.
- Click the middle of the button to open the menu. Type the requested value.

Using the information panes to collect data from the echoes

Topics

- [Retrieving the latest echogram history, page 120](#)
- [Disabling the automatic echogram history recording, page 121](#)
- [Changing the colour scale in the ES80 presentations, page 122](#)
- [Opening the Depth information pane to read the current depth, page 124](#)
- [Investigating the biomass, page 125](#)
- [Changing the calculation parameters for the Biomass information pane, page 126](#)
- [Investigating the echo strength to determine the species in the school, page 128](#)
- [Locating the position of single fish in the beam, page 129](#)
- [Locating the position of single fish in the beam, page 131](#)
- [Investigating the bottom characteristics, page 132](#)
- [Selecting fish species and changing their size to improve the size distribution information, page 133](#)
- [Changing the calculation parameters for the Size Distribution information pane, page 134](#)
- [Using the Zoom information pane to study details in the echogram, page 134](#)

Retrieving the latest echogram history

The *History* information pane allows you to view previously recorded echogram sequences.

Context

The *History* function saves the echogram images automatically on the Processor Unit hard disk. These images can be recalled using the *History* information pane. The information in the *History* presentation is the same as on the original echogram presentation.

Note

The number of history files is limited. After reaching the maximum number of files, the latest echogram picture overwrites the oldest one. The history function still allows you to quickly look through echogram pictures from several hours.

Every time the *History* file is saved to the hard disk, the pinging may be interrupted. It is therefore possible to disable the *History* function. This function is located on the **File Setup** page in the **Output** dialog box

Procedure

- 1 Click in any echogram view to make it "active".

The data in the information pane is only valid for the selected channel. The "active" echogram view is identified with a thicker border.

- 2 On the top bar, select **History**.



In order to show you the recorded echograms, the echogram presentation is split in two. The right side will show you the active echogram, while the left side is used to display the recorded history. Move the slider button at the bottom of the presentation to view the full extent of the image.

- 3 Select **History** one more time to close the function.

Disabling the automatic echogram history recording

The *History* function saves the echogram images automatically on the Processor Unit hard disk. Every time the *History* file is saved to the hard disk, the pinging may be interrupted. It is therefore possible to disable the *History* function.

Context

The *History* information pane allows you to view previously recorded echogram sequences. These images can be recalled using the *History* information pane. The information in the *History* presentation is the same as on the original echogram presentation.

[History information pane description, page 222](#)

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Output**.



Observe that the **Output** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Output** dialog box, select **File Setup** to open the page.

- 4 Under **History**, deselect **History Logging** to disable the function.

Note

If you open the History information pane while history logging is disabled, the information presented reflects the latest echoes recorded before the logging was disabled. When history logging is enabled after some time, you will have a "hole" in the ping sequence.

- 5 Select **OK** to save the chosen settings and close the dialog box.

Changing the colour scale in the ES80 presentations

The *Colour Scale* information pane shows you the current colour scale in use for the ES80 presentations. It also allows you to make changes to the echo levels it presents.

Context

The colour scales used by the ES80 are designed to reflect the how strong the echoes are. The echo strength is measured in decibels (dB). In the basic colour scale with 12 colours, each colour represents a 3 dB step. This means that the entire scale covers 36 dB. The dynamic range of the ES80 is much larger. The **Colour Scale** parameters allow you to change the lower limit of colour scale range to match the current echoes.

Tip

The colour scale is shown on the bottom bar even when the Colour Scale information pane is closed.

[Bottom bar description, page 267](#)

Your choice of colour scale has no effect on the gain settings. The colour scale only controls the visual presentation of the ES80 echo data.

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 On the top bar, select the appropriate button to open the information pane.



[Colour Scale information pane description, page 223](#)

- 3 Click the bottom right corner of the information pane, and drag to requested size.

- 4 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

The ES80 has a dynamic range of 140 dB. This means that the ES80 can receive both very strong and very weak echoes. Naturally, we can not present all these echoes on the display simultaneously, as this would create a mess of colours.

By default you have 64 or 12 colours available to present the echoes, and a selection of palettes. When 12 colours are used, we create a 36 dB total range, and let each colour present a 3 dB strength. Every colour (3 dB) the represent a doubling of the echo strength. With 12 colours in use this will be a 36 dB colour range from grey to brown. Grey is used for the weakest echoes, while the strongest echoes are brown. All echoes stronger than brown will still be brown, while echoes weaker than grey will not be shown. With 64 colours in use, each colour represents approximately 0.5 dB echo strength.

The **Colour Setup** dialog box allows you to choose from several colour scales to use in the ES80 echo presentations. Which colour scale to use is mainly a personal preference based on ambient light conditions, the nature of the echoes and your own experience. If you choose to use many colours, the resolution of the ES80 presentation is greatly improved. It is then easier to distinguish the difference between the various echoes of different size and/or target strength.

- 6 Select **Close** in the top right corner to close the information pane.



Further requirements

The **Information Pane Options** dialog box allows you to change the operational parameters used to present the data in the information panes. To open the **Information Pane Options** dialog box, select the button on the **Active** menu.

Opening the Depth information pane to read the current depth

You can easily read the current water depth in the *Depth* information pane.

Context

The *Depth* information pane provides the water depth in the current echogram view. If you have several echogram views open, you can place one pane in each view.



Procedure

- 1 Click in the echogram view you wish to investigate.

This will make the view "active". The "active" echogram view is identified with a thicker border.

- 2 On the top bar, select the appropriate button to open the information pane.



[Depth information pane description, page 225](#)

- 3 Click the bottom right corner of the information pane, and drag to requested size.
- 4 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

The depth measure by the selected channel is shown. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency. By default, the depth is shown in meters. You can change the measurement unit on the **Units** page. The **Units** page is located in the **Installation** dialog box.

Tip

*If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column. Use the dedicated **Bottom Detection** function.*

[Verifying that the bottom is correctly detected, page 76](#)

- 6 Select **Setup** in the top right corner of the information pane to change the pane parameters.



Selecting **Setup** in the *Depth* information pane opens the **Bottom Detection** page in the **Information Pane Options** dialog box. The purpose of the **Bottom Detection** parameters are to define the upper and lower depth limits most likely to be used during the ES80 operation.

- 7 Select **Close** in the top right corner to close the information pane.



Investigating the biomass

The *Biomass* information pane displays an index of the biomass in the current echogram view. The biomass index is the same as the NASC (Nautical area scattering strength) with unit m^2/nmi^2 .

Context

The digit shown in the *Biomass* information pane is a calculated index.

Tip

*The Biomass Line allows you to monitor the current biomass in the echogram. This function writes an extra thick and brightly coloured curve on the echogram. The Biomass Line shows you the measured biomass for each individual ping. You can change the scale of the curve to fit the vertical space available on the echogram. To enable the Biomass Line function and change the scale, use the **Lines** page in the **Echogram** dialog box.*

It is possible to convert the biomass index to weight (for example in metric tons). Based on practical use of the ES80 in different fisheries, you will soon be able to estimate the weight when you know the type of fish and their sizes.

Procedure

- 1 Click in any echogram view to make it "active".
The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.
- 2 On the top bar, select the appropriate button to open the information pane.
[Biomass information pane description, page 227](#)
- 3 Click the bottom right corner of the information pane, and drag to requested size.

- 4 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

The ES80 records all the targets from the smallest plankton to the largest whale. The biomass value is an indicator to how much fish you currently have in the beam. Every single fish will emit an echo, and the sum of all these registered echoes are presented as a number. Smaller organisms such as plankton will also emit echoes, but these are so weak that they will hardly influence on the total biomass.

The biomass value provides you with information about the fish abundance, and as such it may help you to decide if it pays off to start fishing. However, you must consider if the biomass value is a result of large amounts of plankton or bait, or if you have "real fish" below the keel. The biomass value is relative, and after some use your experience will be a valuable factor when the decision is made.

Tip

*You may experience very high and unrealistic biomass values that do not match the information in the echogram. Try the **Ping-Ping Filter**. The **Ping-Ping Filter** analyses the historical information from previous consecutive pings in order to remove unwanted noise and interference from the ES80 presentation.*

- 6 Select **Close** in the top right corner to close the information pane.



Changing the calculation parameters for the Biomass information pane

The **Calculation Interval** settings define the parameters that are used to calculate the biomass and the size distribution. You can base the calculations on sailed distance, elapsed time, or a portion of the echogram view.

Context

The biomass and size distribution values are calculated based on the echo data collected by the ES80. Use the **Calculation Interval** settings to limit the source data used by these calculations. You can base the calculations on data collected

- within a given time frame
- from a defined number of pings
- from the data used to create a portion of the current view

The **Calculation Interval** parameters can be accessed from two places in the ES80 user interface.

- The page is opened in the **Information Pane Options** dialog box.
- The dialog box is opened using the **Calculation Interval** button on the **Setup** menu.

The parameters are the same, it does not matter if you use the page or the dialog box.

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Calculation Interval** to open the dialog box.



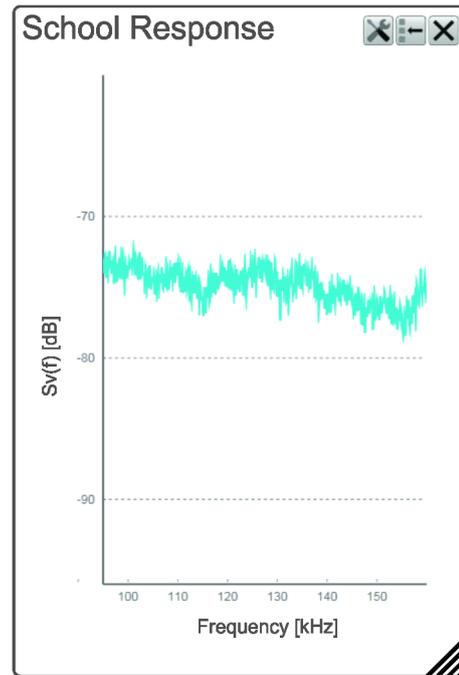
- 3 Adjust the settings to fit your requirements.
- 4 Select **OK** to save the chosen setting and close the dialog box.

Investigating the echo strength to determine the species in the school

The *School Response* information pane is a plot. The pane allows you to identify the nature of the schools, and discriminate between them.

Context

The *School Response* information pane shows you the volume backscatter as a function of the frequency. The information is provided as a plot that shows how the echo strength for a group of targets (for example a school of fish) change with the operational frequency.



Procedure

- 1 Click in the echogram view you wish to investigate.
This will make the view "active". The "active" echogram view is identified with a thicker border.
- 2 On the top bar, select the appropriate button to open the information pane.

[School Response information pane description, page 229](#)



- 3 Click the bottom right corner of the information pane, and drag to requested size.
- 4 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

Scientific research has proven that the variation in echo strength between echosounder frequencies is different between species. Some species are easy to recognize using a higher frequency, while others are more easily detected using a low frequency.

By means of this information pane, you can investigate how the echoes from the fishes changes with different frequencies.

We do not have an answer book for this. You need to build your own knowledge and experience based on the species you normally fish for.

- 6 Select **Setup** in the top right corner of the information pane to change the pane parameters.



Selecting **Setup** in the *School Response* information pane opens the **Information Pane Options** dialog box. The **Information Pane Options** dialog box allows you to change the operational parameters used to present the data in the information panes.

- 7 Select **Close** in the top right corner to close the information pane.



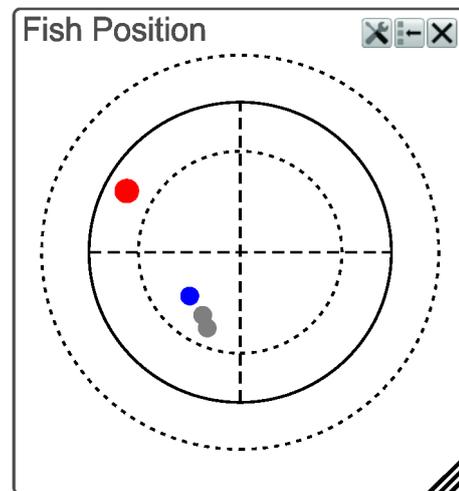
Locating the position of single fish in the beam

The *Fish Position* information pane can be useful during trawling. It shows you the horizontal position of single fish in the beam. Keep an eye on the *Fish Position* information pane to make sure that you can manoeuvre the trawl through the areas with most fish.

Context

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

Each circle in the information pane identifies a single fish. You can observe how these move through the ES80 beam. The colours of the circles are the same as the colours used in the colour scale, and these indicate the echo strength from each fish.



Procedure

- 1 Click in the echogram view you wish to investigate.
This will make the view "active". The "active" echogram view is identified with a thicker border.
- 2 On the top bar, select the appropriate button to open the information pane.
[Fish Position information pane description, page 235](#)
- 3 Click the bottom right corner of the information pane, and drag to requested size.



- 4 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

The three circles in the information pane identifies the operational frequencies if and when you work with a wide band transceiver. The dotted inner circle identifies the lower frequency in the sweep, while the outer dotted circle identifies the upper frequency. The circle between them identifies the centre frequency.

- 6 Select **Setup** in the top right corner of the information pane to change the pane parameters.



Selecting **Setup** in the *Fish Position* information pane opens the **Information Pane Options** dialog box. The **Information Pane Options** dialog box allows you to change the operational parameters used to present the data in the information panes.

- 7 Select **Close** in the top right corner to close the information pane.



Locating the position of single fish in the beam

The *Echo Position* information pane can be useful during fishing. It shows you both the horizontal and vertical position of single fish in the beam.

Context

The *Echo Position* information pane shows the position of the detected single echoes within the beam. The current ping (largest circles) and the three previous ping (smaller circles) are shown. The view is "from the side". The colours indicate the echo strength.

Each circle in the information pane identifies a single fish. You can observe how these move through the ES80 beam. The height of the cone changes to reflect the current depth.

Procedure

- 1 Click in the echogram view you wish to investigate.
This will make the view "active". The "active" echogram view is identified with a thicker border.
- 2 On the top bar, select the appropriate button to open the information pane.

[Echo Position information pane description, page 237](#)

- 3 Click the bottom right corner of the information pane, and drag to requested size.
- 4 Select a **Transparency** setting that fits your requirements.



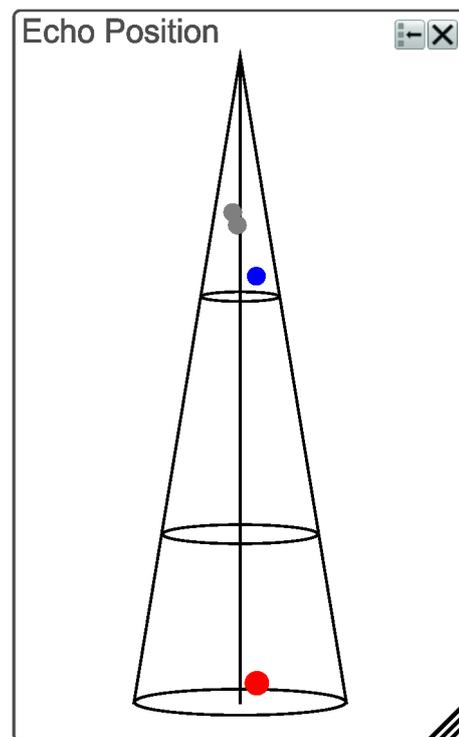
The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

This is basically the same view as in the *Fish Position* information pane. However, the fish echoes are here viewed from the *side* and not from above. This means that you can also investigate the depth of the single fishes in the beam.

The information in the *Echo Position* information pane is presented in 3D.

- On a standard computer mouse, use the middle wheel to zoom in and out.
- Right-click while moving the mouse pointer to alter the 3D presentation.



- 6 Select **Close** in the top right corner to close the information pane.



Investigating the bottom characteristics

The *Bottom Hardness* information pane shows you the current bottom reflectivity. This gives an indication to how hard the bottom is. The value is calculated using the bottom echo strength in the current ping.

Context

The bottom hardness shown in the information pane was detected by the latest ping in the selected view.

When you study the bottom hardness, you can learn more about the bottom. Certain species are known to prefer specific bottom conditions. With more knowledge, you are better qualified to estimate the possible catch.

Tip

The Hardness Line can be added to your echogram to retrieve additional information. It appears as thick colour coded line that follows the bottom contour. This line does not remove information, it simply "pushes" the echo information further down in order to show you the bottom reflectivity.

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 On the top bar, select the appropriate button to open the information pane.



[Bottom Hardness information pane description, page 231](#)

- 3 Click the bottom right corner of the information pane, and drag to requested size.
- 4 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 5 Investigate the information provided by the information pane.

The colours on the left side of the scale indicate a soft bottom, while the colours on the right hand side indicate a harder bottom. The vertical line in the hardness colour scale positions the latest ping. The current reflectivity is also shown measured in dB.

- 6 Select **Close** in the top right corner to close the information pane.



Selecting fish species and changing their size to improve the size distribution information

The *Size Distribution* information pane shows a histogram of the echoes detected from single fishes. The calculations are based on the fact that different fish species have different echo strength. For various reasons, the fish size presented in the *Size Distribution* information pane may be inaccurate. The **Fish Select** dialog box allows you to select the fish species you expect to catch, and manually adjust the size distribution.

Context

If the information in the *Size Distribution* information pane appears to be inaccurate, or the information does not correspond with the actual catch, the values can be modified. Select the fish type you are catching or looking for, then adjust the size.

[Size Distribution information pane description, page 233](#)

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Fish Select** to open the dialog box.



- 3 Select the specie, click the ruler, and drag it sideways to increase or decrease the fish size.
- 4 Select **OK** to save the chosen settings and close the dialog box.

Changing the calculation parameters for the Size Distribution information pane

The **Calculation Interval** settings define the parameters that are used to calculate the biomass and the size distribution. You can base the calculations on sailed distance, elapsed time, or a portion of the echogram view.

Context

The biomass and size distribution values are calculated based on the echo data collected by the ES80. Use the **Calculation Interval** settings to limit the source data used by these calculations. You can base the calculations on data collected

- within a given time frame
- from a defined number of pings
- from the data used to create a portion of the current view

The **Calculation Interval** parameters can be accessed from two places in the ES80 user interface.

- The page is opened in the **Information Pane Options** dialog box.
- The dialog box is opened using the **Calculation Interval** button on the **Setup** menu.

The parameters are the same, it does not matter if you use the page or the dialog box.

Procedure

- 1 Open the **Setup** menu.
- 2 Select **Calculation Interval** to open the dialog box.



- 3 Adjust the settings to fit your requirements.
- 4 Select **OK** to save the chosen setting and close the dialog box.

Using the Zoom information pane to study details in the echogram

If you need to magnify a part of the echogram to study details, you can use the *Zoom* information pane. Three *Zoom* information panes can be opened for each channel.

Context

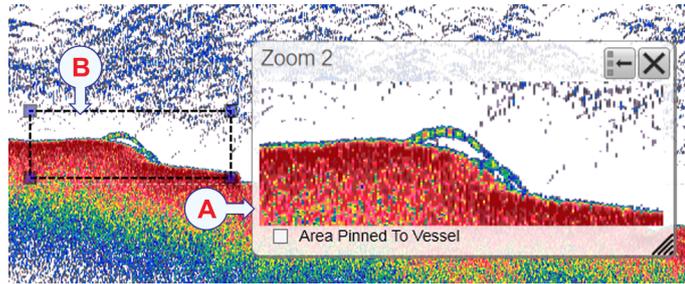
The *Zoom* information pane allows you to magnify a chosen area of the current echogram. Once the *Zoom* information pane is opened, the zoomed area is visible as a dotted rectangle in the echogram. You can change the size of this zoomed area, and you can move the rectangle anywhere inside the active view.

A *Zoom information pane*

B *Zoom rectangle used to define the size of the zoomed area*

In this screen capture, the zoomed area rectangle is positioned close to the *Zoom* information pane. You

can however place the pane and the zoomed area independently anywhere you like inside the active view.



Each *Zoom* information pane export information. When opening the *Biomass* and/or the *Size Distribution* information panes, you will automatically receive information from each of the *Zoom* information panes that you have opened.

Procedure

- 1 Click in any echogram view to make it "active".

The setting you choose will only be valid for the currently "active" echogram. The "active" echogram view is identified with a thicker border.

- 2 On the top bar, select the appropriate button to open the information pane.



To open the second and third *Zoom* information panes, simply select the **Zoom** button repeatedly.

[Zoom information pane description, page 239](#)

- 3 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

- 4 Position the zoom rectangle over the area in the echogram that you wish to investigate.

Click in the middle of the rectangle, and keep the mouse button depressed. Drag it to the requested position. Release the mouse button.

- 5 Click the corners of the zoom rectangle, and drag to change it to desired size.
- 6 Control the behaviour of the zoomed area.

Use **Area Fixed To Vessel** to control the behaviour of the zoom function. When the rectangular zoomed area is established, it can either follow the echogram while it moves towards the left, or it can stay put.

- When **Area Fixed To Vessel** is active, the zoomed area will be permanently positioned on the echogram. The echoes shift through the area, and therefore also shift through the *Zoom* information pane.
- When **Area Fixed To Vessel** is switched off, the zoomed area will "follow" the echogram data from right towards left.

7 Select **Close** in the top right corner to close the information pane.



Defining settings related to user preferences and individual customizing

Topics

Selecting menu language, page 137

Reducing the light emitted from the display presentation, page 138

Increasing the visibility of the information panes, page 139

Selecting the navigational information to appear on the top bar, page 139

Selecting which tooltips to appear in the user interface, page 140

Enabling Coordinated Universal Time (UTC) time on the bottom bar, page 140

Changing the colour palette ("skin") used in the ES80 presentations, page 141

Choosing the colours used to present the echograms, page 142

Selecting measurement units, page 143

Placing echogram channels in separate windows on multiple displays, page 144

Selecting menu language

You may prefer to use the ES80 with a user interface in your own language. The **Language** function allows you to select the language to be used in the ES80 presentations, menus and dialog boxes.

Context

With a few exceptions, the chosen language will also be used for all other texts on the ES80. The ES80 on-line help may not be available for the language you choose. If your language is not supported, the English on-line help is provided.



Procedure

- 1 Open the **Setup** menu.
- 2 Select the middle of the **Language** button to open the list of available options.



- 3 Select the language you wish to use.

Result

All the texts 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 ES80 program.

Reducing the light emitted from the display presentation

When the bridge is dark, the light emitted by the ES80 display can affect your night vision. In order to compensate for this, you can reduce the intensity

Context

The intensity of the light given off by the ES80 presentation can be adjusted. You can use this function to increase or decrease the light from the screen to match the ambient light. The intensity of light emitted by the display can be reduced from 100% to 0% in steps of 10.

Tip

*If you wish to adjust the colour intensity and/or colour scheme of the ES80 presentation, you can also try the **Palette** function in the **Colour Setup** dialog box.*

Procedure

- 1 Open the **Display** menu.
- 2 Select a **Screen Brightness** setting that fits your requirements.



To change the setting, move the cursor to either side of the button, and observe that the background colour changes. Select [—] on the left side to decrease the setting value, or select [+] on the right side to increase. Select the middle of the button to open it. If you have a keyboard connected to the ES80, you can type the requested value into the text box.

Increasing the visibility of the information panes

When you open an information pane, you will see that it is transparent. This transparency allows you to see the echogram data behind the pane, but it may also reduce the visibility of the information in it.

Context

The information panes provided by the ES80 can be placed anywhere on top of the views in the presentation.

In order not to lose information, the panes have been designed so you can see through them. The degree of transparency can be controlled with this **Transparency** function. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.

Procedure

- 1 Open the **Display** menu.
- 2 Select a **Transparency** setting that fits your requirements.



The chosen transparency percentage is used on all open information panes.

To change the setting, move the cursor to either side of the button, and observe that the background colour changes. Select [—] on the left side to decrease the setting value, or select [+] on the right side to increase. Select the middle of the button to open it. If you have a keyboard connected to the ES80, you can type the requested value into the text box.

Selecting the navigational information to appear on the top bar

The top bar may contain navigational information. You can select which navigation elements that shall be shown at the top of the ES80 presentation.

Context

The **General** page offers a range of "on/off switches". Some of these "on/off switches" are used to enable or disable the navigational information on the top bar.

Note

The information shown on the ES80 top bar must not be used for vessel navigation!

Procedure

- 1 Open the **Display** menu.

- 2 Select **Display Options**.



Observe that the **Display Options** dialog box opens.

- 3 Select **General** to open the page.
- 4 In the **Top bar** list, select the navigational information you wish to see on the top bar.
- 5 Select **OK** to save the chosen settings and close the dialog box.

Selecting which tooltips to appear in the user interface

When you move the cursor over the echograms in the ES80 presentation, small "tooltips" are shown to provide additional information. The **Tooltip** page controls which tooltips that are shown.

Context

Several tooltips are shown on the ES80 presentation. When a tooltip is enabled, the cursor location is detected, and a small rectangle with information is shown. By default, the information is related to the exact position of the cursor. Each tooltip represent a specific piece of information, and they are listed separately.

The **Tooltip** page offers a range of "on/off switches". Each tooltip is presented in the list, and you can enable or disable each of them independently.

Procedure

- 1 Open the **Display** menu.
- 2 Select **Display Options**.



Observe that the **Display Options** dialog box opens.

- 3 Select **Tooltip** to open the page.
- 4 In the list of tooltips, select the tooltips you wish to see.
- 5 Select **OK** to save the chosen settings and close the dialog box.

Enabling Coordinated Universal Time (UTC) time on the bottom bar

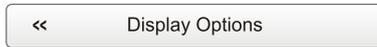
You can set up the ES80 to show you Coordinated Universal Time (UTC) time. When disabled, the software will use local time.

Context

This is an "on/off" switch. The time is shown at the bottom of the ES80 presentation.

Procedure

- 1 Open the **Display** menu.
- 2 Select **Display Options**.



Observe that the **Display Options** dialog box opens.

- 3 Select **General** to open the page.
- 4 Select **UTC Time** to enable Coordinated Universal Time (UTC) time.
- 5 Select **OK** to save the chosen settings and close the dialog box.

Changing the colour palette ("skin") used in the ES80 presentations

Depending on the ambient light, it is possible to change the ES80 presentation colours to help you see the information. The **Palette** function allows you to choose which colour theme ("skin") to be used by the ES80.

Context

Select a palette to suit the ambient light conditions and your personal preferences. The choice you make does not have any effect on the ES80 performance. The following options are available.

- **Day Black**: intended for use on the bridge during dusk and dawn.
- **Day White**: intended for daytime use on the bridge.
- **Night**: intended for night-time use on the bridge.
- **Blue**: intended for night-time use on the bridge.

Procedure

- 1 Open the **Display** menu.
- 2 Select **Colour Setup**.



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

- 3 Select the colour palette ("skin") you wish to use.
- 4 At the bottom of the dialog box, select **Apply** to preview your choice.
- 5 Select **OK** to save the chosen setting and close the dialog box.

Choosing the colours used to present the echograms

Several different colour scales are predefined and available for the presentation of echograms. You can easily choose which colours to use. The presentation colours have no effect on the operational performance of the ES80. The **Colour Setup** dialog box controls the presentation colours used by the ES80. This includes the palette ("skin"), the number of colours in use, and the colour scale.

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.

Tip

*By default you have 64 or 12 colours available to present the echoes, and a selection of palettes. The colour scale can be retrieved any time by selecting **Colour Scale** on the top bar. The chosen colours are shown at the bottom of the ES80 presentation.*

If you choose to use many colours, the resolution of the ES80 presentation is greatly improved. It is then easier to distinguish the difference between the various echoes of different size and/or target strength.

Tip

*You can adjust the echo level range by means of the **Colour Scale** settings. These are opened from the Colour Scale information pane. You can find the same settings in the **Information Pane Options** dialog box on the **Active** menu.*



The following colour scales are available.

12 colours

Sonar colours

Smooth ES

Grayscale

BI500 colours



The **Smooth Echosounder** scale is based on the standard 12-colour scale. Additional colours have been added between these to make "smoother" colour transitions.

Procedure

- 1 Open the **Display** menu.
- 2 Select **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 64 colours.

- 4 Select the colour scale you wish to use.
- 5 At the bottom of the dialog box, select **Apply** to preview your choice(s).
- 6 Select **OK** to save the chosen setting and close the dialog box.

Selecting measurement units

The ES80 is prepared to work with several international standards for units of measurements. The choices on the **Units** page allow you to control which units of measurements that are used.

Context

The ES80 user interface presents many measurements. These measurements are for example related to depth, range or distance. Use the **Units** options to select the units of measurements you wish to work with. The ES80 uses these in all presentations. You only need to define these once.

Note _____

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Units**.

Observe that the **Units** page opens.

- 4 Adjust the settings to fit your requirements.
- 5 At the bottom of the page, select **Apply** to save your settings.
- 6 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Placing echogram channels in separate windows on multiple displays

The **Add Floating Window** dialog box makes it possible to grab a complete echogram presentation for a chosen channel, and place it in a separate window. This window can for example be on a second (or third) display connected to your Processor Unit.

Prerequisites

The **Add Floating Window** dialog box is always available, even if you only work with a single display. It is however used for large multi-display installations. You can only place a new window on a secondary display if your Processor Unit is fitted with a suitable graphic adapter, and the necessary adjustments have been made in the display driver.

Context

Computers with graphic adapters supporting more than one display are fairly common. The **Add Floating Window** function has been implemented to show echogram presentations on multiple displays. The function is also useful if your Processor Unit is only fitted with a large single display.

Procedure

- 1 Open the **Display** menu.
- 2 On the menu, select **Add Floating Window**.



- 3 Select which channel to copy to a new window.

In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

- 4 Select **OK**.

The new window contains the chosen echogram channel. You can move this window to any display using the functionality provided by the operating system. To close the window, click the "X" in its top right corner.

You can repeat this as many times necessary, and thus establish a separate window for each echogram channel.

- 5 When all the requested echogram channels have been placed in separate windows, select **Cancel** to close the **Add Floating Window** dialog box.
- 6 On the main display:
 - a Select the appropriate tab to set up the presentation of the echogram views.
 - b Select **Square**, **Vertical** or **Horizontal** to arrange the echogram views accordingly.

Saving, retrieving and handling user settings

Topics

[Saving the current user settings, page 145](#)

[Choosing previously saved user settings, page 146](#)

[Renaming existing user settings, page 147](#)

[Deleting user settings that are no longer used, page 148](#)

[Choosing ES80 factory default settings, page 148](#)

Saving the current user settings

When you have spent some time working with the ES80, you are probably using specific settings that you know are efficient for your purpose. It is a good idea to save these settings.

Context

The **User Settings** dialog box is used to store your favourite ES80 settings.

These settings can be related to different operations, environmental conditions or basic personal preferences. You can use different settings to create as many user profiles as you like, and give them any name. All the settings you have chosen using functions and dialog boxes in the ES80 user interface are saved.

To save the settings you are using, select the **Save Current Setting** button.

Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Select **User Settings**.



Observe that the **User Settings** dialog box opens.

- 3 Select **Save Current Setting**.

A small dialog box opens that you can write the name of the new settings.

- 4 Type a name for the user setting.

Note

*If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard.*

- 5 Select **OK** to save the chosen name.
- 6 Observe that the name you have chosen appears on the **Saved Settings** list.
- 7 Select **OK** to close the dialog box.

Choosing previously saved user settings

User settings that either you or any of your colleagues have saved can easily be retrieved and put to use. This shortens down the time it takes to get started with the ES80.

Context

The **User Settings** dialog box is used to store your favourite ES80 settings.

These settings can be related to different operations, environmental conditions or basic personal preferences. You can use different settings to create as many user profiles as you like, and give them any name. All the settings you have chosen using functions and dialog boxes in the ES80 user interface are saved.

To activate either a factory or a saved setting, click the relevant name in one of the lists, then click the **Activate Selected Setting** button.

Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Select **User Settings**.



Observe that the **User Settings** dialog box opens.

- 3 Observe the list of previously saved user settings in the **Saved Settings** list.
- 4 Select the setting you wish to use.
- 5 Select **Activate Selected Setting**.
- 6 Select **OK** to apply your changes and close the **User Settings** dialog box.

Renaming existing user settings

An existing user setting can easily be renamed.

Context

The **User Settings** dialog box is used to store your favourite ES80 settings.

These settings can be related to different operations, environmental conditions or basic personal preferences. You can use different settings to create as many user profiles as you like, and give them any name. All the settings you have chosen using functions and dialog boxes in the ES80 user interface are saved.

To rename a user setting, select its name in the list, and then select **Rename**. The factory settings can not be renamed.

Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Select **User Settings**.



Observe that the **User Settings** dialog box opens.

- 3 Observe the list of previously saved user settings in the **Saved Settings** list.
- 4 Select the setting you wish to rename.
- 5 Select **Rename**.

A small dialog box opens to accept the new name.

- 6 Type a name for the user setting.

Note _____

*If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard.*

- 7 Select **OK** to save the chosen name.
- 8 Observe that the name you have chosen appears on the **Saved Settings** list.
- 9 Select **OK** to apply your changes and close the **User Settings** dialog box.

Deleting user settings that are no longer used

When you save the user settings, the files you have created are shown on the **Saved Settings** list. The list may be too long. User settings that you do not need can be deleted.

Context

The **User Settings** dialog box is used to store your favourite ES80 settings.

These settings can be related to different operations, environmental conditions or basic personal preferences. You can use different settings to create as many user profiles as you like, and give them any name. All the settings you have chosen using functions and dialog boxes in the ES80 user interface are saved.

To delete a user setting, select its name in the list, and then select **Delete**. The factory settings can not be deleted.

Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Select **User Settings**.



Observe that the **User Settings** dialog box opens.

- 3 Observe the list of previously saved user settings in the **Saved Settings** list.
- 4 Select the setting you wish to delete.
- 5 Select **Delete**.

A small dialog box opens so that you can verify your choice.

- 6 Observe that the name you chosen is removed from the **Saved Settings** list.
- 7 Select **OK** to apply your changes and close the **User Settings** dialog box.

Choosing ES80 factory default settings

Sometimes it may be useful to reset the ES80 to work with a set of known user settings. A set of "factory settings" is provided for this purpose. The settings may be put to use if you are uncertain of which values to use. They offer "best practice" settings for typical use.

Context

The **User Settings** dialog box is used to store your favourite ES80 settings.

These settings can be related to different operations, environmental conditions or basic personal preferences. You can use different settings to create as many user profiles as you like, and give them any name. All the settings you have chosen using functions and dialog boxes in the ES80 user interface are saved.

To activate either a factory or a saved setting, click the relevant name in one of the lists, then click the **Activate Selected Setting** button. The factory settings cannot be altered.

Note

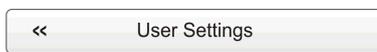
Unless they are saved, all your current settings are lost when the factory settings are applied.

Procedure

- 1 Observe the **Main** menu.

Its default location is on the right side of the ES80 presentation.

- 2 Select **User Settings**.



Observe that the **User Settings** dialog box opens.

- 3 Observe the **Factory Settings** list.
- 4 Select the setting you wish to use.
- 5 Select **Activate Selected Setting**.
- 6 Select **OK** to apply your changes and close the **User Settings** dialog box.

Adjusting the transceiver parameters

Topics

Selecting *Passive* transceiver mode, page 150

Adjusting the output power, page 151

Adjusting the pulse duration, page 151

Defining the frequency sweep (chirp) within each transmission, page 152

Defining the pulse type for the ES80 transmissions, page 153

Selecting *Passive* transceiver mode

In *Passive* mode, the ES80 will receive and compute the signals detected by the transducer(s). This mode is thus useful for test purposes, and when you wish to measure the ambient background noise in the sea. It can also be useful to run the ES80 in *Passive* mode to discriminate between target echoes (present only in *Active* mode) and noise (present in both *Active* and *Passive* modes).

Context

If you wish to investigate the ambient noise, choose *Passive* mode in the **Normal Operation** dialog box. Any noise or disturbance in the water - within the transducer's frequency range - will then be detected and shown. This feature will for example be able to pick up disturbances from other hydroacoustic systems on your own vessel, or on other vessels in the vicinity.

The current setting of this parameter is also shown in the **Extras** menu.

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Normal Operation**.



Observe that the **Normal Operation** dialog box opens.

- 3 For the relevant transceiver channel, set **Mode** to *Passive*.

Note

*If you set **Mode** to *Passive*, your ES80 will no longer provide any information in the echogram(s).*

- 4 Select **OK** to save the chosen setting and close the dialog box.

Adjusting the output power

You are permitted to adjust the output power of the ES80. You can not increase the power to beyond the transducer's capacity, but you may reduce it for better performance in shallow water, or if you are struggling with reverberation.

Context

The **Power** parameter in the **Normal Operation** dialog box displays the transmitter's output power measured in Watts. You can change the output power manually. Output power is limited either to the maximum rating of the transducer, or the maximum rating of the transmitter, whichever is the smallest. For all practical purposes, this means that you can *reduce* the power output, but you can not increase it to beyond the power rating of the transducer.

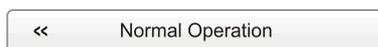
The current setting of this parameter is also shown in the **Extras** menu.

Note

*The settings in the **Normal Operation** dialog box are limited by the specifications in the transducer setup file. You can therefore not make any changes that might damage your transceiver or transducer. Certain settings may be limited by your license. Do not to make any changes unless you are well aware of the consequences.*

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Normal Operation**.



Observe that the **Normal Operation** dialog box opens.

- 3 For the relevant transceiver channel, set **Power** to the requested value.
- 4 Select **OK** to save the chosen setting and close the dialog box.

Adjusting the pulse duration

The **Pulse Duration** setting specifies the current duration ("length") of the transmitted pulse. You can manually select a pulse duration that suits your operation.

Context

The pulse duration can be adjusted according to the current depth and what kind of fish you are looking for. The deeper you wish to see, the longer pulse duration should be used. Remember that in the ES80, the pulse duration and the bandwidth are mutually dependant.

- Long pulse => lots of acoustic energy => narrow bandwidth => less sensitive for noise from own vessel and environment

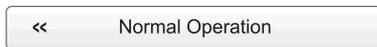
- Short pulse => less acoustic energy => wide bandwidth => more sensitive for noise from own vessel and environment

Tip

*When you select **Auto**, the ES80 will automatically select the best pulse duration for the current operational mode, depth and bottom conditions. For normal use, we recommend that the pulse duration is set to **Auto**.*

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Normal Operation**.



Observe that the **Normal Operation** dialog box opens.

- 3 For the relevant channel, set **Pulse Duration** to your chosen value.
- 4 Select **OK** to save the chosen setting and close the dialog box.

Defining the frequency sweep (chirp) within each transmission

The ES80 supports wideband transmissions using frequency sweeps. This is often referred to as "chirp", and means that the transmission frequency changes from a "start" frequency to an "end" frequency within the transmission. In order to use the frequency sweep ("chirp") functionality, you must use frequency modulated (FM) pulses. You must also use a wideband transducer that supports the complete frequency range.

Context

The **Start Frequency** and **End Frequency** parameters are used to set up a frequency sweep ("chirp"). If the parameters for start and end frequencies are unavailable, the transducer used on the relevant channel does not support wideband transmissions. In order to use the frequency sweep ("chirp") functionality, you must use frequency modulated (FM) pulses.

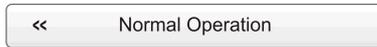
Note

Frequency modulated (FM) transmission is an optional function. In order to use this functionality, a dedicated software license is required. Contact your local dealer for more information.

It is very important that the transducer you are using complies to the frequencies you choose. The frequency range of each transducer is defined in the transducer setup file. If you choose a frequency range that is not supported, an error message will appear.

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Normal Operation**.



Observe that the **Normal Operation** dialog box opens.

- 3 For the relevant channel, set **Start Frequency** and **End Frequency** to values permitted by your transducer.
- 4 Select **OK** to save the chosen settings and close the dialog box.

Defining the pulse type for the ES80 transmissions

The **Pulse Type** function allows you to select which type of pulse transmission you wish to use; *CW* or *FM*.

Context

"CW" means "continuous wave", while "FM" means "frequency modulated".

Note

Frequency modulated (FM) transmission is an optional function. In order to use this functionality, a dedicated software license is required. Contact your local dealer for more information.

The settings in the **Normal Operation** dialog box are limited by the specifications in the transducer setup file. You can therefore not make any changes that might damage your transceiver or transducer. Do not to make any changes unless you are well aware of the consequences.

Procedure

- 1 Open the **Operation** menu.
- 2 Select **Normal Operation**.



Observe that the **Normal Operation** dialog box opens.

- 3 For the relevant channel, set **Pulse Type** to a *LFM* or *CW* mode as permitted by your license and the transducer.
- 4 Select **OK** to save the chosen setting and close the dialog box.

Interfacing peripheral equipment

Topics

[Installing navigation and other sensors, page 154](#)

[Defining the serial and Ethernet \(LAN\) port parameters, page 155](#)

[Setting up the input from a navigation system \(GPS\), page 157](#)

[Configuring the sensor interface, page 159](#)

[Setting up a serial or LAN \(Ethernet\) port for annotation input, page 160](#)

[Connecting a catch monitoring system to a serial or LAN \(Ethernet\) port, page 162](#)

[Connecting a trawl system to a serial or LAN \(Ethernet\) port, page 164](#)

[Setting up the input from a motion reference unit \(MRU\), page 166](#)

[Setting up depth output to an external system, page 169](#)

[Exporting sensor data to a peripheral system, page 171](#)

[Setting up the ES80 in a synchronized system, page 173](#)

Installing navigation and other sensors

For the ES80 to use and offer correct navigational information, one or more external sensors must be connected. Typical sensors are those that provide speed, heading and geographical position. To set up the communication parameters on the serial and LAN ports, use the **I/O Setup** page. To select which sensors to install, use the **Sensor Installation** page. The **Sensor Configuration** page allows you to define a datagram priority, so that the information from the "most reliable" sensor is used by the ES80. You can also define manual values in case a sensor is unserviceable, or not installed.

Prerequisites

The new sensor is physically connected to the ES80 using a serial or network cable.

Context

The **Sensor Installation** page allows your ES80 to communicate with external sensors and systems. However, in order to communicate with each sensor, you must first set up the relevant communication parameters. Once the communication has been established and the sensor is connected, you must define the datagram priority and finalize the configuration.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 Set up the interfaces to the navigation sensors.
 - a On the left side of the **Installation** dialog box, select **I/O Setup**.
[Defining the serial and Ethernet \(LAN\) port parameters, page 155](#)
 - b Set up the relevant serial or Ethernet (LAN) communication parameters.
 - c At the bottom of the page, select **Apply** to save your settings.
 - d On the left side of the **Installation** dialog box, select **Sensor Installation**.
 - e Select the type of sensor you wish to interface, and define the relevant parameters.
 - f Select **Add** to save the new sensor interface you have defined.
 - g On the left side of the **Installation** dialog box, select **Sensor Configuration**.
 - h Define the priority of the datagrams, and set up relevant configuration parameters.
 - i At the bottom of the page, select **Apply** to save your settings.
- 4 Repeat for each sensor interface that you need to set up.
- 5 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Defining the serial and Ethernet (LAN) port parameters

For any sensor interface to work, the communication parameters must be set up correctly. The ES80 software automatically scans the Processor Unit to locate and identify the available communication ports. Once the software has established a list of valid interfaces, you can set up and control the communication parameters.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.

- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The communication parameters required for the sensor interface are known.

Context

The **I/O Setup** page provides two lists, one for serial ports and one for Ethernet (LAN) ports. Each list is supported with a set of functions to set up and monitor the communication ports. Click once on the port you wish to work with, and then one of the buttons below the list.

Tip

*The **Sensors** page in the **BITE (Built-In Test Equipment)** dialog box provides an overview of all the communication lines and sensors in use. All relevant status information is provided. The **BITE** dialog box is located on the **Setup** menu.*

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



- 3 Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.
- 3 On the left side of the **Installation** dialog box, select **I/O Setup**.
- 4 Observe that the available serial and network interface ports on the Processor Unit are listed.
- 5 Set up the relevant serial or Ethernet (LAN) communication parameters.
 - a Select the interface port you wish to set up.
 - b Select **Setup** below the list to open the **Serial Port Setup** or **LAN Port Setup** dialog box.
 - c Set up the relevant serial or Ethernet (LAN) communication parameters.

The communication parameters defined for **NMEA 0183** are:

- **Baud rate:** 4800 b/s
- **Data bits:** 8
- **Parity:** None
- **Stop bits:** 1

Some instruments may offer other parameters and/or choices. You must always check the relevant documentation provided by the manufacturer.

- d Select **OK** to save the chosen settings and close the dialog box.
- 6 At the bottom of the page, select **Apply** to save your settings.
- 7 Repeat for any other communication ports that you need to set up.
- 8 Close the **Installation** dialog box.

Setting up the input from a navigation system (GPS)

For the ES80 to use and offer correct navigational information, one or more external sensors must be connected. Typical sensors are those that provide speed, heading and geographical position. To select which sensors to install, use the **Sensor Installation** page.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The interface port is set up with the correct communication parameters.

Context

The **Sensor Installation** page allows your ES80 to communicate with external sensors and systems. You must specify which communication port to use (Local Area Network (LAN) or serial). You can type a custom name to identify the sensor import. On the list of valid datagrams formats, select the format(s) to be accepted by the ES80. Once a sensor has been chosen, you must select the offset values that define the sensor's physical location relative to your vessel's coordinate system.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

Procedure

- 1 Connect the navigation system to an available communication port on your Processor Unit.
*This is described in the ES80 *Installation manual*.*
- 2 Open the **Setup** menu.

- 3 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side of the **Installation** dialog box, select **Sensor Installation**.
- 5 Select the type of sensor you wish to interface.
- 6 Select which port you wish to import the sensor information on.
- 7 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation** and **Output** dialog boxes.*

- 8 If you wish to verify that the peripheral system is in fact transmitting data to the ES80, select **Monitor**.

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.

- 9 Type a custom name to identify the interface in other dialog boxes.
- 10 Select which datagram(s) you wish to import from the sensor.
- 11 If relevant, specify a dedicated Talker ID.
- 12 Provide the accurate physical location of the sensor (or its antenna) with reference to the vessel's coordinate system.

Each position is defined as an *offset* to the *Ship Origin* in the coordinate system. These offset values are required to allow the ES80 to give you as accurate echo data as possible. The degree of accuracy offered by the ES80 is directly related to the accuracy of the information you enter on the **Sensor Installation** page.

- a Select the offset value in the X-axis (fore-and-aft direction) from the *Ship Origin*. Adjust with a positive value for X if the sensor is located ahead of the ship origin.
- b Select the offset value in the Y-axis (athwartship) from the *Ship Origin*. Adjust with a positive value for Y if the sensor is located on the starboard side of the ship origin.
- c Select the offset value in the Z-axis (vertical) from the *Ship Origin*. Adjust with a positive value for Z if the sensor is located under the ship origin.

- 13 Select **Add** to save the new sensor interface you have defined.
The sensor interface is added to the **Installed Sensors** list on the **Sensor Installation** page.
- 14 Repeat for each sensor interface that you need to set up.
- 15 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Further requirements

On the left side of the **Installation** dialog box, select **Sensor Configuration**. Define the priority of the datagrams, and set up relevant configuration parameters.

Configuring the sensor interface

With several sensors connected to the ES80, many of them will provide the same datagrams. We cannot expect that the datagrams provide the same information. The **Sensor Configuration** page allows you to define a datagram priority, so that the information from the "most reliable" sensor is used by the ES80. You can also define manual values in case a sensor is unserviceable, or not installed.

Prerequisites

- The new sensor is physically connected to the ES80 using a serial or network cable.
- The interface port is set up with the correct communication parameters.
- The navigation sensor is installed into the ES80 software. The relevant interface parameters and physical location properties are defined.

Context

Any information in a datagram, for example the current depth, may be provided in different datagrams from several sensors. Due to a number of reasons (environmental conditions, installation, configuration, accuracy etc.), the numerical values provided can be different from one sensor to the other.

Several sensor are provided on the **Sensor Configuration** page, one for each type of information. Select the sensor you wish to configure in the **Sensor** list. For each type, you can define a priority sensor by rearranging the datagrams in a list. You can also define manual values in case a sensor is unserviceable, or not installed.

The ES80 can communicate with several different sensor types. The **Sensor Installation** page allows you to define which external sensors your ES80 shall import information from. You must also decide which datagram formats that shall be accepted. Open the **Sensor Installation** page in the **Installation** dialog box.

Note

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Sensor Configuration**.
Observe that the **Sensor Configuration** page opens.
- 4 Select the sensor you wish to configure in the **Sensor** list.
- 5 If you wish to use the built-in datagram priority, select **Auto**.
 - With **Auto enabled**, the priority list is used. Information is imported from the sensor on the top of the list. If the sensor fails to provide information for more than 20 seconds, data from the next sensor is used.
 - With **Auto disabled**, the priority list is not used. Information is imported from the sensor on the top of the list. All other sensors are ignored.
- 6 If you wish to control the datagram priority manually, *do not* select **Auto**.
To change the priority for a given datagram, select it, and change its location on the list using the arrow buttons.
- 7 If relevant, add a manual value for the sensor input.
- 8 At the bottom of the dialog box, select **Apply** to save your settings.
- 9 Repeat for each sensor interface that you need to set up.
- 10 Close the **Installation** dialog box.

Setting up a serial or LAN (Ethernet) port for annotation input

Several different annotation types may be added to the echogram. They are displayed on the echogram if this feature is enabled in the **Echogram** dialog box. You can add annotations manually, or import information as datagrams using a serial or LAN (Ethernet) communication port.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The interface port is set up with the correct communication parameters.

Context

The **Sensor Installation** page allows your ES80 to communicate with external sensors and systems. You must specify which communication port to use (Local Area Network (LAN) or serial). You can type a custom name to identify the sensor import. On the list of valid datagrams formats, select the format(s) to be accepted by the ES80.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

The ES80 supports the following datagram format for annotations.

- **Simrad ATS datagram format**

Simrad ATS is a proprietary datagram format created by Kongsberg Maritime. It allows you to import annotations from external devices.

Procedure

- 1 Connect the peripheral system providing the annotations to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Sensor Installation**.
- 4 Select *Annotations* to import information from the peripheral system.
- 5 Select the port you wish to use (serial or LAN).
- 6 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation** and **Output** dialog boxes.*

- 7 If you wish to verify that the peripheral system is in fact transmitting data to the ES80, select **Monitor**.

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.

- 8 Type a custom name to identify the interface in other dialog boxes.

- 9 Select which datagram(s) you wish to import from the peripheral device.

When you select sensor type Annotation, only one datagram can be selected.

- 10 Do not specify a dedicated Talker ID.

- 11 Select **Add** to save the new device interface you have defined.

The device interface is added to the **Installed Sensors** list on the **Sensor Installation** page. It is not necessary to use the **Sensor Configuration** page to set up a priority list.

- 12 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Connecting a catch monitoring system to a serial or LAN (Ethernet) port

A catch monitoring system can be connected to the ES80. The connection is made using a serial or LAN (Ethernet) port on the Processor Unit. For any sensor interface to work, the communication parameters must be set up correctly.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The interface port is set up with the correct communication parameters.

Context

The **Sensor Installation** page allows your ES80 to communicate with external sensors and systems. You must specify which communication port to use (Local Area Network (LAN) or serial). You can type a custom name to identify the sensor import. On the list of valid datagrams formats, select the format(s) to be accepted by the ES80.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

The data communication from an external catch monitoring system is based on proprietary data formats. The ES80 supports the following datagram formats from a catch monitoring system.

- **Simrad PSIMP-D**

Simrad PSIMP-D is a proprietary datagram format created by Kongsberg Maritime to provide the type and configuration of PS and PI sensors used by a Simrad catch monitoring system. This datagram format is obsolete, and it is no longer in use on new designs. It has been replaced by datagram PSIMP-D1.

- **Simrad PSIMP-D1**

Simrad PSIMP-D1 is a proprietary datagram format created by Kongsberg Maritime to provide the type and configuration of PS, PI and PX sensors used by a Simrad catch monitoring system. This datagram format replaces the PSIMP-D format.

- **Simrad PSIMP-F**

Simrad PSIMP-F is a proprietary datagram format created by Kongsberg Maritime to provide the type and configuration of PS and PI sensors used by a Simrad catch monitoring system.

Procedure

- 1 Connect the peripheral catch monitoring system to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Sensor Installation**.
- 4 Select *PI50* to import information from a catch monitoring system.
- 5 Select the port you wish to use (serial or LAN).
- 6 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation** and **Output** dialog boxes.*

- 7 If you wish to verify that the peripheral system is in fact transmitting data to the ES80, select **Monitor**.

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.

- 8 Type a custom name to identify the interface in other dialog boxes.

- 9 Select which datagram(s) you wish to import from the peripheral device.

When you select sensor type PI50, only one datagram can be selected; PI50 Datagrams. This is a group of datagrams that allows the ES80 to import information from catch monitoring systems.

- 10 Do not specify a dedicated Talker ID.

- 11 Select **Add** to save the new system interface you have defined.

The system interface is added to the **Installed Sensors** list on the **Sensor Installation** page. It is not necessary to use the **Sensor Configuration** page to set up a priority list.

- 12 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Connecting a trawl system to a serial or LAN (Ethernet) port

A trawl system can be connected to the ES80. The connection is made using a serial or LAN (Ethernet) port on the Processor Unit. For any sensor interface to work, the communication parameters must be set up correctly.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The interface port is set up with the correct communication parameters.

Context

The **Sensor Installation** page allows your ES80 to communicate with external sensors and systems. You must specify which communication port to use (Local Area Network (LAN) or serial). You can type a custom name to identify the sensor import. On the list of valid datagrams formats, select the format(s) to be accepted by the ES80.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

The data communication from an external trawl system is based on proprietary data formats. The ES80 supports the following datagram formats from a trawl system.

- **Simrad DBS**

Simrad DBS is a proprietary datagram format created by Kongsberg Maritime to provide the current depth of the trawl sensor.

- **Simrad HFB**

Simrad HFB is a proprietary datagram format created by Kongsberg Maritime. It provides the vertical distance (height) from the headrope to the footrope, and from the footrope to the bottom.

- **Simrad TDS**

Simrad TDS is a proprietary datagram format created by Kongsberg Maritime to provide the door spread. That is the distance between the two trawl doors.

- **Simrad TPR**

Simrad TPR is a proprietary datagram format created by Kongsberg Maritime. It provides the relative bearing and water depth of the trawl sensor, as well as its distance from the vessel.

- **Simrad TPT**

Simrad TPT is a proprietary datagram format created by Kongsberg Maritime to provide the true bearing and water depth of the trawl sensor, as well as its distance from the vessel.

Procedure

- 1 Connect the peripheral trawl system to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 Open the **Setup** menu.
- 3 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side of the **Installation** dialog box, select **Sensor Installation**.
- 5 Select *ITI-FS* to import information from a trawl system.
- 6 Select the port you wish to use (serial or LAN).

- 7 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation and Output** dialog boxes.*

- 8 If you wish to verify that the peripheral system is in fact transmitting data to the ES80, select **Monitor**.

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.

- 9 Type a custom name to identify the interface in other dialog boxes.

- 10 Select which datagram(s) you wish to import from the peripheral device.

When you select sensor type ITI-FS, only one datagram can be selected; ITI-FS Datagrams. This is a group of datagrams that allows the ES80 to import information from trawl systems.

- 11 Do not specify a dedicated Talker ID.

- 12 Select **Add** to save the new system interface you have defined.

The system interface is added to the **Installed Sensors** list on the **Sensor Installation** page. It is not necessary to use the **Sensor Configuration** page to set up a priority list.

- 13 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Setting up the input from a motion reference unit (MRU)

The information from a motion reference unit (MRU) (normally heave, roll and pitch information) is imported into the ES80 to increase the accuracy of the echo data.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.
- The interface port is set up with the correct communication parameters.

Context

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 ES80 to stabilize the echo presentation.

The ES80 supports the following datagram formats from a motion sensor.

- **Simrad TSS1**

Simrad Sounder/TSS1 is a proprietary datagram format created by Kongsberg Maritime for heave, roll and pitch compensation. When you select this protocol, the number of sensor variables is fixed, and there is no token associated with it.

- **Kongsberg EM Attitude 3000**

The EM Attitude 3000 is a proprietary datagram format created by Kongsberg Maritime for use with digital motion sensors. It holds roll, pitch, heave and heading information. The datagram contains a 10-bytes long message.

- **Furuno GPhve**

Furuno GPhve is a proprietary datagram format created by Furuno (<http://www.furuno.jp>) to contain heave information.

- **Hemisphere GNSS GPHEV**

GPHEV is a proprietary datagram format created by Hemisphere GNSS (<https://hemispheregnss.com>) to contain heave information.

Procedure

- 1 Connect the motion sensor system to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 Open the **Setup** menu.
- 3 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side of the **Installation** dialog box, select **Sensor Installation**.
- 5 Select the motion reference format you wish to use.
- 6 Select the port you wish to use (serial or LAN).

- 7 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation and Output** dialog boxes.*

- 8 If you wish to verify that the peripheral system is in fact transmitting data to the ES80, select **Monitor**.

The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.

- 9 Type a custom name to identify the interface in other dialog boxes.

- 10 Select which datagram(s) you wish to import from the sensor.

- 11 If relevant, specify a dedicated Talker ID.

- 12 Provide the accurate physical location of the sensor (or its antenna) with reference to the vessel's coordinate system.

Each position is defined as an *offset* to the *Ship Origin* in the coordinate system. These offset values are required to allow the ES80 to give you as accurate echo data as possible. The degree of accuracy offered by the ES80 is directly related to the accuracy of the information you enter on the **Sensor Installation** page.

- a Select the offset value in the X-axis (fore-and-aft direction) from the *Ship Origin*. Adjust with a positive value for X if the sensor is located ahead of the ship origin.
- b Select the offset value in the Y-axis (athwartship) from the *Ship Origin*. Adjust with a positive value for Y if the sensor is located on the starboard side of the ship origin.
- c Select the offset value in the Z-axis (vertical) from the *Ship Origin*. Adjust with a positive value for Z if the sensor is located under the ship origin.

- 13 Select **Add** to save the new sensor interface you have defined.

The sensor interface is added to the **Installed Sensors** list on the **Sensor Installation** page.

- 14 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Setting up depth output to an external system

The ES80 can export depth information on a dedicated communication port (serial or Ethernet) The **Depth Output** page is used to set up the output parameters.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.

Context

The ES80 can export the depth information on several NMEA datagram formats. You can export several depth formats simultaneously, as each of them is handled independently.

The ES80 supports the following datagram formats for depth output.

- **NMEA DBS**

The NMEA DBS datagram provides the current depth from the surface. The datagram is no longer recommended for use in new designs. It is frequently replaced by the NMEA DPT datagram.

- **NMEA DBT**

The NMEA DBT datagram provides the current depth under the transducer. In new designs, this datagram is frequently used to replace the DBK and DBS datagrams.

- **NMEA DPT**

The NMEA DPT datagram provides the water depth relative to the transducer, and the offset of the measuring transducer.

- **Atlas Depth**

Atlas Depth is a proprietary datagram format created by Atlas Elektronik (<http://www.atlas-elektronik.com>) to provide the current depth from two channels.

- **Simrad PSIMDHB**

The proprietary Simrad PSIMDHB datagram format is created by Kongsberg Maritime to contain the calculated bottom hardness and biomass information.

Procedure

- 1 Connect the peripheral system to an available communication port on your Processor Unit.
This is described in the ES80 *Installation manual*.
- 2 Open the **Setup** menu.

3 Select **Output**.



Observe that the **Output** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

4 On the left side of the **Outputs** dialog box, select **I/O Setup**.

Observe that the **I/O Setup** page opens.

5 Observe that the available serial and network interface ports on the Processor Unit are listed.

6 Set up the relevant serial or Ethernet (LAN) communication parameters.

- a On the **I/O Setup** page, select the port you wish to set up.
- b Select **Setup** below the list to open the **Serial Port Setup** or **LAN Port Setup** dialog box.
- c Set up the relevant communication parameters.

7 On the left side of the **Output** dialog box, select **Depth Output**.

Observe that the **Depth Output** page opens.

8 On the **Depth Output** page, set up the data export parameters.

- a Select which depth datagram to export.
- b Select **Add** to start export of the chosen data format.

Once an output type has been defined, it is listed in the **Installed Outputs** box on the left side of the page.
- c Select the communication port you wish to use.
- d Choose which channel to use as source for the depth information.

"Best practice" is to use the lowest frequency. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.
- e If applicable, specify a dedicated Talker ID.
- f Select **Inspect Port** to check the communication parameters on the chosen port.

The **Inspect Port** function does not allow you to set up or change any communication parameters. To do this, you must open the **Serial Port Setup** or **LAN Port Setup** dialog box from the **I/O Setup** page.
- g Select **OK** to save the chosen settings and close the dialog box.

- 9 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation and Output** dialog boxes.*

- 10 Verify that the data flow on the output line (**Tx Data** text field) is operational.
- The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.
- 11 Select **Apply** and then **Close** to save all the parameters and close the **Output** dialog box.

Exporting sensor data to a peripheral system

The information provided to the ES80 from various sensors can also be useful for other systems on board. The ES80 allows you to export the same sensor data that was originally imported. This can "reuse" the same information on other systems. The **Relay Output** page is used to set up and control this export functionality.

Prerequisites

This procedure assumes that:

- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.

Context

The information imported to the ES80 from various sensors can also be useful for other systems on board your vessel. The ES80 allows you to "re-export" this sensor information. When activated, the selected sensor information is sent out on the chosen communication port (serial or LAN) on the Processor Unit.

The following sensor data can be exported:

- Navigation
- Motion sensor

Procedure

- 1 Connect the peripheral system to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 Open the **Setup** menu.
- 3 Select **Output**.



Observe that the **Output** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side of the **Outputs** dialog box, select **I/O Setup**.
Observe that the **I/O Setup** page opens.
- 5 Observe that the available serial and network interface ports on the Processor Unit are listed.
- 6 Set up the relevant serial or Ethernet (LAN) communication parameters.
 - a On the **I/O Setup** page, select the port you wish to set up.
 - b Select **Setup** below the list to open the **Serial Port Setup** or **LAN Port Setup** dialog box.
 - c Set up the relevant communication parameters.
 - d Select **OK** to save the chosen settings and close the dialog box.
- 7 On the left side of the **Output** dialog box, select **Relay Output**.
Observe that the **Relay Output** page opens.
- 8 On the **Relay Output** page, set up the data export parameters.
 - a Select which depth datagram to export.
 - b Select the communication port you wish to use.
 - c Choose which channel to use as source for the depth information.
"Best practice" is to use the lowest frequency. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.
 - d If relevant, specify a dedicated Talker ID.
 - e Select **Add** to start export of the chosen data format.

- 9 If you wish to check the communication parameters, select **Inspect Port**.

Note

*You are not permitted to make any changes here. To change the communication parameters, use the **I/O Setup** page. The **I/O Setup** page is located in the **Installation and Output** dialog boxes.*

- 10 Verify that the data flow on the output line (**Tx Data** text field) is operational.
- The **Port Monitor** dialog box provides one text field for incoming messages (**Rx Data**), and one for outgoing (**Tx Data**). Use these fields and your own knowledge of the data communication to investigate the datagrams. The **Port Monitor** dialog box is a tool for debugging purposes. It is neither required nor intended for normal operation of the ES80.
- 11 Select **Apply** and then **Close** to save all the parameters and close the **Output** dialog box.

Setting up the ES80 in a synchronized system

If you wish to use the ES80 as a master or slave in a synchronized system, you must set it up for such operation. To do this, you must select which communication port to use for the synchronization interface, and you must select the requested synchronization mode.

Prerequisites

This procedure assumes that:

- The vessel is berthed or at sea.
- You have a vacant interface port on your Processor Unit.
- You are familiar with NMEA and other relevant datagram formats.
- You know how to set up the parameters for serial and local area network (LAN) communication.

For "slave" operation, a remote system (for example *K-Sync*) must be available to provide trigger pulses. For "master" operation, a remote system must be connected. This remote system must be set up in "slave" mode.

Context

Whenever more than one hydroacoustic system is installed on a vessel, interference may occur. To avoid this, you have these options:

- The systems are all connected to a common synchronization system.
- One of the acoustic systems is set up as "master", and controls the transmissions on the other systems.

The ES80 offers functionality for remote transmit synchronisation. It can be set up to operate in either *Master* or *Slave* mode.

Note

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

Procedure

- 1 Connect the synchronisation cable from the remote system to an available communication port on your Processor Unit.

This is described in the ES80 *Installation manual*.

- 2 Turn on the ES80, and set it to normal use.
- 3 Open the **Setup** menu.
- 4 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 5 On the left side of the **Installation** dialog box, select **Synchronization**.
- 6 Select **Synchronization Mode**.

- **Standalone**

Synchronization is switched off. This synchronization mode is used if the ES80 is working by itself, and with no synchronization required. This is the default setting. The ES80 operates using its internal ping interval parameters, independent of any trigger signals arriving at the synchronization port.

The **Synchronization Delay** setting is not applicable when synchronization is switched off.

- **Master**

The *Master* mode is used if the ES80 shall act as the "controlling" unit in a synchronized system. The peripheral hydroacoustic system(s) are only permitted to transmit when enabled by the ES80. When the *Master* mode is chosen, the ES80 will run using its internal ping interval parameters, and send trigger signals to the peripheral system(s).

- **Slave**

The *Slave* mode is used if the ES80 shall transmit only when permitted by a peripheral system. When the *Slave* mode is chosen, the ES80 does not transmit ("ping") unless an external trigger appears on the chosen synchronization port. The peripheral system may be any other hydroacoustic product (for example an echo sounder or sonar), or even a dedicated synchronisation system.

- 7 Select **Synchronization Delay**.

This delay parameter is used differently depending on the chosen synchronization mode.

- **Standalone**

The **Synchronization Delay** setting is not applicable when synchronization is switched off.

- **Master**

In *Master* mode, the ES80 will wait for the delay time after the external trigger signal has been sent to the slaves before transmitting the ping. This is often referred to as *Pre-trigger*.

Note _____

This delay will only work when the synchronization is set up using a serial port.

- **Slave**

In *Slave* mode, the ES80 waits for the delay time after the external trigger signal has arrived before transmitting the ping. This is often referred to as *Post-trigger*.

- 8 From the list of ports available, select **Synchronization Port**.

This is the interface port currently used to transmit or receive synchronization signals. It must be a serial port. Since the synchronization function only use the *Request To Send (RTS)* and *Clear To Send (CTS)* signals, you can use a serial port that is already used for other purposes. For the same reason, you do not need to define any baud rate.

- 9 At the bottom of the page, select **Apply** to save your settings.

- 10 Continue your work in the **Installation** dialog box, or select **OK** to close it.

System setup and software installation procedures

Topics

[Defining the IP address on the Processor Unit network adapter for communication with the Wideband Transceiver \(WBT\), page 176](#)

[Checking the current software version, page 177](#)

[Installing the ES80 operational software, page 178](#)

[Obtaining and installing the software license, page 179](#)

[Moving the software license from one Processor Unit to another, page 181](#)

[Upgrading the ES80 operational software, page 182](#)

[Removing the ES80 operational software, page 183](#)

[Upgrading the software on the Wideband Transceiver \(WBT\), page 184](#)

[Installing one or more transducers, page 186](#)

[Installing transceiver channels, page 188](#)

[Installing GPT transceiver channels, page 190](#)

[Disconnecting transceiver channels, page 193](#)

Defining the IP address on the Processor Unit network adapter for communication with the Wideband Transceiver (WBT)

The communication between the Processor Unit and the transceiver(s) is made using a high speed Ethernet cable. If more than one transceiver is used, an Ethernet switch is added. On the ES80, the necessary IP is generated automatically. However, we recommend that you manually define which IP Address and Subnet mask the Ethernet adapter in the Processor Unit shall use for this communication.

Prerequisites

This procedure is made for the Microsoft® Windows® 7 operating system. It is assumed that you are familiar with this operating system.

Context

As long as you do not change the Processor Unit to another computer, or replace the network adapter in your Processor Unit, you will only need to do this once.

Procedure

- 1 On the Processor Unit, close the ES80 program.
- 2 Open the **Network and Sharing Center** dialog box.
 - a In the bottom-left corner of your desktop, select the Windows® **Start** button.
 - b On the right-hand side of the **Start** menu, select **Control Panel**.
 - c Observe that the Control Panel opens.
 - d Select **Network and Sharing Center**.
(If the Control Panel is shown with categories, select **View network status and tasks**.)
 - e On the left-hand menu, select **Change adapter settings**.
 - f Click once on your network adapter to select it, then right-click and select **Properties** on the short-cut menu.
 - g On the list of connections, select **Internet Protocol 4 (TCP/IPv4)**, and then **Properties**.
- 3 Select **Use the following IP address**, and type the IP address and network mask.
 - **IP Address:** 157.237.15.12 (*Recommended*)
 - **Subnet mask:** 255.255.255.0

You can leave **Subnet mask** blank and click **OK**. When you see an error message saying that the message subnet mask is missing, click **OK** again. A default subnet mask is then automatically generated.
- 4 Select **OK** to save the chosen settings, then close all the dialog boxes.

Further requirements

If you later need to change the IP address, always restart the transceiver before you start the ES80.

Checking the current software version

Every ES80 software release is uniquely identified. You can easily identify your current software version and the relevant release information in the **About** dialog box.

Context

The ES80 program is released with a specific software version. The **About** dialog box displays the current version number. The version described in this Operator Manual is 1.2.x.

If you wish to find the latest software version for the ES80, check our website.

- <https://www.simrad.com/es80>

Procedure

- 1 Open the **Setup** menu.
- 2 Select **About** to open the dialog box.
- 3 Find the information that you need.
- 4 Select **Close** to close the dialog box.

Installing the ES80 operational software

If your ES80 Wideband fish finding echo sounder is provided with a Processor Unit, the ES80 software has already been installed. If you intend to use your own computer, you must install the software yourself.

Prerequisites

In order to install the software, you need the relevant file set on a suitable media. If the software is provided on a CD or a DVD, and your computer is not fitted with a suitable drive, copy the files to a USB flash drive.

Note

Verify that you have administrative rights on the Processor Unit. You need this to install the software. If you purchased your own computer, you must verify that it meets the technical requirements for use with the ES80. Do this before you install the software.

Context

One or more valid software licenses are required to operate the ES80. The software licenses are installed after the ES80 software installation. The **Software License** page is provided for this purpose.

Procedure

- 1 Turn on the Processor Unit.
- 2 Switch off any firewall applications.
- 3 Insert the ES80 software media.
If the ES80 software is provided on a CD or DVD, and your Processor Unit is not fitted with a suitable drive, copy the files to a USB flash drive.
- 4 Use a file manager application on the Processor Unit to access the software files.
- 5 Double-click `Setup.exe` to start the installation.
- 6 Allow the installation wizard to run. Follow the instructions provided.
We recommend that you install the ES80 in the default folder suggested by the wizard.

In the last dialog box you are permitted to remove old settings. Since this is your first installation of the software, you can disregard this option.

- 7 Once the installation has been completed, double-click the ES80 icon on the desktop to start the program.
- 8 Depending on your operating system parameters, certain dialog boxes may open.
 - a The Windows® 7 Firewall may open a dialog box requesting information about the network. Select **Public**, and then select **Allow access**.
 - b The operating system may also open other dialog boxes to verify that the ES80 software can run on the computer. You must of course permit this.

Further requirements

Observe the dedicated procedures for obtaining and installing the software licence(s).

[Obtaining and installing the software license, page 179](#)

Obtaining and installing the software license

To operate the ES80 with a wide band transceiver you need a valid software license. Before you can use the ES80 you must obtain a "license string" and install it on your Processor Unit. Without a license you will not be able to communicate with the transceiver.

Prerequisites

This procedure assumes that the ES80 operational software has been successfully installed on the Processor Unit.

Context

The software license is 32 character hexadecimal string built from the transceiver's serial number. It defines several key parameters that controls the functionality and behaviour of the transceiver(s) you use. Each software license code "unlocks" one Wideband Transceiver (WBT) for operational use with a set of predefined properties.

The software license is not linked to the physical Processor Unit. You can therefore easily move the software from one computer to another, just remember to take a copy of the license string.

In order to obtain a software license you must contact a Simrad dealer or distributor. You can also use the request form on <http://www.simrad.com/support>, or contact our support department directly.

Note

This procedure is only valid if your ES80 shall operate with a Wide Band Transceiver (WBT).

Once you receive your software license string(s), do not loose them. We suggest that you copy the information into a text file (for example Notepad), and add relevant information. Place the text file on the Processor Unit desktop, and make sure that backup copies are made.

Procedure

- 1 Obtain the necessary information about your transceiver(s) and transducer(s). Write down:
 - a The serial number for each transceiver.
 - b Which transducers you have connected to each transceiver.
 - c The center frequency for each transducer.
 - d The Q-value for each transducer.
 - e The maximum nominal power rating for each transducer.
- 2 Send the necessary information to one of Simrad's dealers or distributors.

You can also use the request form on <http://www.simrad.com/support>, or contact our support department directly.

You can use the following e-mail address:

 - purchase.order@simrad.com

Once the software license string(s) have been returned to you (most likely by e-mail), you can install the licenses into the software.

- 3 Open the **Setup** menu.
- 4 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 5 On the left side of the **Installation** dialog box, select **Software License**.

Observe that the **Software License** page opens.

- 6 Select **Type License String**, and type the license string into the dialog box.

If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard. If you have received the license string on an electronic format (e-mail or text file), you can copy the string from the source document and paste it into the **Type License String** dialog box.

- 7 Click **OK** to save the license string and close the **Type License String** dialog box.

- 8 Verify that the license string is placed in the **Currently active licenses** list.
If necessary, select the license string on the left side, and click the arrow button [>] to move it to the **Currently active licenses** list.
- 9 Select **Apply** and then **Close** to save all the parameters and close the **Installation** dialog box.

Moving the software license from one Processor Unit to another

Without a license you will not be able to communicate with the transceiver. The software license for the ES80 is not linked to the physical Processor Unit. If necessary, you can therefore easily move the ES80 software from one computer to another.

Prerequisites

This procedure assumes that:

- Your existing ES80 is operational with all necessary software licenses installed.
- You have a new computer to be used as Processor Unit.
- The ES80 software has been installed on the new Processor Unit.
- The new Processor Unit is connected to the transceiver(s).

In order to do this task you will need a small text editor (for example the Microsoft® *Notepad*) running on both computers. You will also need a USB flash drive.

Context

The software license is 32 character hexadecimal string built from the transceiver's serial number. It defines several key parameters that controls the functionality and behaviour of the transceiver(s) you use. Each software license code "unlocks" one Wideband Transceiver (WBT) for operational use with a set of predefined properties.

Procedure

- 1 Start the ES80 on the "old" Processor Unit.
- 2 Open the **Setup** menu.
- 3 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 4 On the left side of the **Installation** dialog box, select **Software License**.
Observe that the **Software License** page opens.
- 5 Copy all the current license strings to a text file on the USB flash drive.

- a Move all the software licenses to the **Currently active licenses** list.
 - b Insert a USB flash drive on your computer.
 - c Open a small text editor.
 - d For each software license string:
 - 1 Click on the license string to select it.
 - 2 Select **Copy** to copy the license string to the computer's clipboard.
 - 3 Activate the text editor, and paste in the license string.
 - e When all the software license strings have been pasted into the text file, save it to the USB flash drive.
 - f Remove the USB flash drive, and insert it on the "new" Processor Unit.
- 6 Start the ES80 on the "new" Processor Unit.
 - 7 Install the license strings using copy/paste from the text file.

Upgrading the ES80 operational software

When a new ES80 software version is released, it must be installed on your Processor Unit.

Prerequisites

In order to upgrade the ES80 software, you need the relevant file set on a suitable media. If the ES80 software is provided on a CD or a DVD, and your computer is not fitted with a suitable drive, copy the files to a USB flash drive.

This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

Context

The ES80 needs one or more software licenses to work. Each software license code "unlocks" one Wideband Transceiver (WBT) for operational use with a set of predefined properties. The software licences are not affected by the software upgrade.

The new version of the ES80 will automatically replace the old version.

Procedure

- 1 Turn on the Processor Unit.
- 2 Switch off any firewall applications.
- 3 Insert the ES80 software media.

If the ES80 software is provided on a CD or DVD, and your Processor Unit is not fitted with a suitable drive, copy the files to a USB flash drive.
- 4 Use a file manager application on the Processor Unit to access the software files.

- 5 Double-click `Setup.exe` to start the installation.
- 6 Allow the installation wizard to run. Follow the instructions provided.
We recommend that you install the ES80 in the default folder suggested by the wizard.
In the last dialog box you are permitted to remove old settings. Read the options carefully. Do not remove any existing settings unless this is your intention.
- 7 Once the installation has been completed, double-click the ES80 icon on the desktop to start the program.

Removing the ES80 operational software

If you wish to replace your Processor Unit with a new unit, or simply do not wish to use the ES80 any longer, you can remove the software.

Prerequisites

This procedure is made for the Microsoft® Windows® 7 operating system. It is assumed that you are familiar with this operating system.

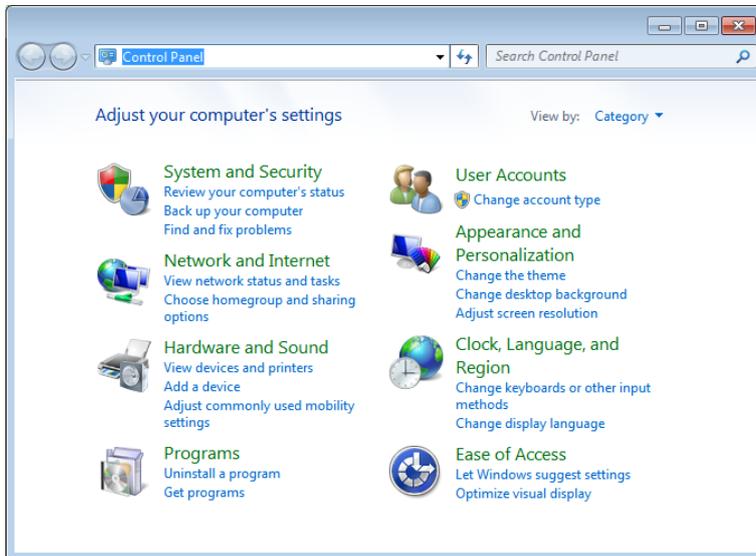
Context

Removal of the ES80 software is done using functionality provided by the operating system.

Procedure

- 1 Turn on the Processor Unit.
- 2 In the bottom-left corner of your desktop, select the Windows® **Start** button.

- 3 On the right-hand side of the **Start** menu, select **Control Panel**.



Observe that the Control Panel opens.

- 4 Uninstall the ES80.
 - a In the top right corner of the Control Panel, select *Category* view.
 - b Under **Programs**, select **Uninstall a program**.
 - c On the list of programs, locate the ES80 software.
 - d Select the program, and then select **Uninstall**.
 - e Follow the instructions provided by the wizard.
- 5 Click the [X] in the top right corner to close the Control Panel.

Upgrading the software on the Wideband Transceiver (WBT)

Certain software upgrades for the ES80 also include an upgrade for the Wideband Transceiver (WBT). To ensure maximum operational performance, these software versions must always be compatible.

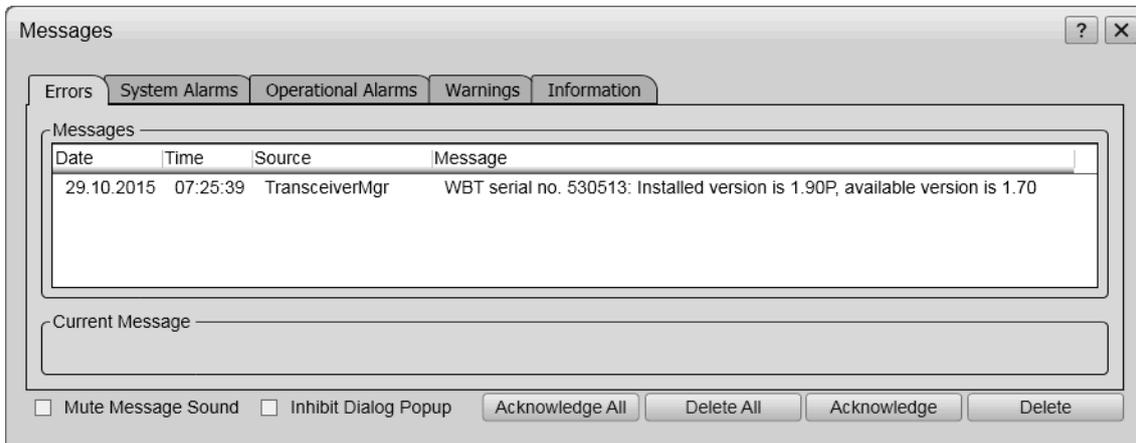
Prerequisites

In order to upgrade the ES80 software, you need the relevant file set on a suitable media. If the ES80 software is provided on a CD or a DVD, and your computer is not fitted with a suitable drive, copy the files to a USB flash drive.

This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

Context

When the ES80 is powered up for normal use, the software checks that the operation software version matches the software version in the Wideband Transceiver (WBT). If there is a mismatch, an error message will be provided.



The software download process is supported by several dialog boxes with information.

Procedure

- 1 Turn on the Processor Unit, and start the ES80 program.
- 2 Select **Operation**, and set it to *Inactive*.



- 3 Open the **Setup** menu.
- 4 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 5 On the left side, select **Transceiver**.

Observe that the **Transceiver Installation** page opens.

- 6 Download the new software version.

- a In the list of transceivers, click to select the transceiver you wish to upgrade.
- b Click **Download Transceiver Software**.
- c In the dialog box that opens, choose the software file you wish to use, and click **Open**.
- d Observe the information provided in the next dialog box. If you wish to download the software, click **Yes**.



Note

The communication between the Processor Unit and the Wideband Transceiver (WBT) must not be interrupted while the software is downloaded!

- e Wait while the software downloads.
 - f Observe the resulting message.
If the download process has failed, restart it.
 - g If you have more than one transceiver, repeat the download process for the next one.
- 7 When the software has been downloaded, close all dialog boxes, and resume with normal operation.

Further requirements

If the download process fails repeatedly, contact your dealer or Simrad support.

Installing one or more transducers

The transducers you wish to use with the ES80 must be "installed" as a part of the software configuration. Which transducers to use depends on the number of transceivers in your system, and the licenses you have for these. Unless you replace a broken transducer, or add a new, you only need to do this once.

Prerequisites

It is assumed that the ES80 software has been installed, and that all relevant license strings have been applied. You need to know the type and serial number of each transducer that you wish to install.

Context

Each transducer is added using the **Transducer Installation** page. The **Transducer Installation** page is located in the **Installation** dialog box.

You can only choose a transducer from the **Model** list. The list is generated from a system file on your Processor Unit. It contains all the transducers that are compatible with the Wideband Transceiver (WBT). The list also includes technical specifications for each transducer. You can not see this information, but it is used by the ES80 to set up the operational parameters. This allows the Wideband Transceiver (WBT) to optimize its performance for the individual transducer models.

If you can not find your transducer on the list, contact you dealer, agent or Kongsberg Maritime to upgrade the relevant software component in the ES80.

Note

*Just making changes and selecting **OK** at the bottom of the page will not install anything. Select what to install, define the relevant parameters, and then select **Add**.*

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Transducer Installation**.
- 4 Select the transducer you wish to install from the **Model** list.

Note

Make sure that you select a transducer that is supported by your current license.

- 5 Insert the serial number.

This serial number is very important, because you will need it as a reference identification when the ES80 is calibrated. Some new Simrad transducers with built-in "intelligence" will automatically provide this serial number.

- 6 Type the name you wish to use into the **Custom Name** box.

Type any name that you wish to use to identify the transducer. The name you select will only be used to identify the transducer in other dialog boxes. It is not used in the echo data that you export. If you do not have a computer keyboard connected to your ES80 system, select the **Keyboard** button to open an on-screen keyboard.

- 7 Select mounting method.
- 8 Specify the orientation of the transducer beam.
- 9 Provide the accurate physical location of the transducer with reference to the vessel's coordinate system.

Use the centre of the transducer face as reference, and define the offset values related to the *Ship Origin*.

- a Select the offset value in the X-axis (fore-and-aft direction) from the *Ship Origin*. Adjust with a positive value for X if the transducer is located ahead of the ship origin.
- b Select the offset value in the Y-axis (athwartship) from the *Ship Origin*. Adjust with a positive value for Y if the transducer is located on the starboard side of the ship origin.

- c Select the offset value in the Z-axis (vertical) from the *Ship Origin*. Adjust with a positive value for Z if the transducer is located under the ship origin.
- 10 Select **Add** to save the information you have provided.
The transducer is added to the list in the **Installed Transducers** box.
- 11 Repeat for each transducer that you wish to install.
- 12 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Result

Once a transducer has been installed, it is listed in the **Installed Transducers** box. To see the information you have collected about the transducer, select the relevant transducer in the list.

The **Edit** functionality on the **Transducer Installation** page makes it possible to change the information you have provided for the transducer. You can not change the model identification and the serial number. The custom name is used several places in the user interface, and it can be changed.

The **Remove** functionality on the **Transducer Installation** page makes it possible to delete the information you have provided for the transducer. There is no "undo" functionality.

Installing transceiver channels

In order to use the ES80 the Processor Unit must be connected to one or more transceivers, and each of these must in turn be connected to one or more transducers. Each channel must be installed before it can be put to use. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Prerequisites

The ES80 is installed as specified in the *ES80 Installation manual*.

- All cables are connected and tested.
- Each transceiver is powered up.
- The software license for each transceiver is installed and activated.
- The Ethernet adapter in the Processor Unit is set up with a unique IP address.
- All relevant transducers are installed using the **Transducer** page.

Context

The **Transceiver Installation** parameters control the installation and disconnection of transceivers. Every time the page is opened, the ES80 software automatically performs a search on the Ethernet network for transceivers.

The list in the upper part on the **Transceiver Installation** page shows you an overview of the transceivers and channels that are currently available. In this context, the phrase

channel is used as a common term to identify the combination of transceiver, transducer and operating frequency. Each channel is identified by the transceiver type and serial number and the transducer(s) in use. The current status for each channel is also provided.

- **Busy:** The channel is already in use, probably by another echo sounder on the same network. You can not connect to this channel.
- **Installed:** This channel is connected to your ES80 system.
- **Lost:** This channel can not be used.
- **Available:** This channel is vacant and ready for use.

Note

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Transceiver**.
- 4 Install the channel(s).
 - a Observe that the transceiver(s) you have connected to the Processor Unit are listed.

Each transceiver is identified with type and serial number. The available channels on each transceiver are listed separately.

- b For each channel, choose which transducer to connect to.

The list of transducers available for installation is defined by those you installed on the **Transducer** page.

Note

This is a critical task. Make sure that the correct transducer is selected.

- c Observe that the status for the relevant frequency channels change to *Installed*.

Tip

If no transceivers are listed:

- Click **Browse** in the **Transceiver Browsing** field, and open the **Local IP Address** field. Select the correct address for the Ethernet adapter you are using. This will make the ES80 search the network for available transceivers.
 - Check that each transceiver has been powered up.
 - Verify that the Ethernet communication between the units is operational.
 - If you are using an Ethernet switch, verify that it works.
-

- 5 At the bottom of the page, select **Apply** to save your settings.
- 6 Repeat until all the channels have been installed.
- 7 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Result

When all channels have been installed, you can start normal operation.

Caution

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Installing GPT transceiver channels

In order to use the ES80 the Processor Unit must be connected to one or more transceivers, and each of these must in turn be connected to one or more transducers. Each channel must be installed before it can be put to use. The ES80 also supports the use of General Purpose Transceiver (GPT) transceivers. In order to use General Purpose Transceiver (GPT) transceivers, minimum one Wide Band Transceiver (WBT) must be installed first to handle the software license for the ES80 system.

Prerequisites

The ES80 is installed as specified in the ES80 *Installation manual*.

- All cables are connected and tested.
- Each transceiver is powered up.
- The General Purpose Transceiver (GPT) is not connected to the Ethernet switch.
- The software license for each Wide Band Transceiver (WBT) is installed and activated.
- The Ethernet adapter in the Processor Unit is set up with a unique IP address.
- All relevant transducers are installed using the **Transducer** page.

Context

If you upgrade an older echo sounder that uses a General Purpose Transceiver (GPT), you must add a Wide Band Transceiver (WBT) to the system configuration. The WBT is required as a “dongle” to meet the license requirements. When you are using WBT and GPT transceivers together, it is important to set the WBT with license feature "GPT Control" as the top transceiver in the transceiver list. In this position, the ES80 will be able to read the license.

The list in the upper part on the **Transceiver Installation** page shows you an overview of the transceivers and channels that are currently available. To change the order of the transceivers, use the two arrow buttons on the right hand side of the **Transceiver Installation** page. If you fail to do this, the ES80 will provide an error message stating that the option for GPT is not enabled. The status for the GPT is then "Prohibited".

All recent ES80 software licenses for the Wide Band Transceiver (WBT) include licensing for one or more General Purpose Transceiver (GPT) units. If your license is too old, and does not support the GPT, contact our support organization for a new license.

Note

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



- Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.
- 3 On the left side of the **Installation** dialog box, select **Transceiver**.
 - 4 Verify that the ES80 is set up with minimum one Wide Band Transceiver (WBT) at the top of the transceiver list.
 - 5 Verify that ES80 operates normally ("pinging") with the Wide Band Transceiver (WBT) units.
 - a Close the **Installation** dialog box without making any changes.
 - b On the **Operation** menu, set **Operation** to *Normal*.
 - c Verify normal operation.
 - d Select **Operation**, and set it to *Inactive*.
 - e Shut down the ES80 program and turn off the Processor Unit.
 - 6 Connect the General Purpose Transceiver (GPT) to the Ethernet switch.
 - 7 Turn on the Processor Unit and start the ES80 program.

- 8 Install the General Purpose Transceiver (GPT) channel(s).
 - a On the **Setup** menu, select **Installation**.
 - b On the left side, select **Transceiver**.
 - c Observe that the transceiver(s) you have connected to the Processor Unit are listed.

Each transceiver is identified with type and serial number. The available channels on each transceiver are listed separately.

- d For each channel, choose which transducer to connect to.

The list of transducers available for installation is defined by those you installed on the **Transducer** page.

Note _____

This is a critical task. Make sure that the correct transducer is selected.

- e Observe that the status for the relevant frequency channels change to *Installed*.

Tip _____

If no transceivers are listed:

- *Click **Browse** in the **Transceiver Browsing** field, and open the **Local IP Address** field. Select the correct address for the Ethernet adapter you are using. This will make the ES80 search the network for available transceivers.*
 - *Check that each transceiver has been powered up.*
 - *Verify that the Ethernet communication between the units is operational.*
 - *If you are using an Ethernet switch, verify that it works.*
-

- 9 At the bottom of the page, select **Apply** to save your settings.
- 10 Repeat until all the channels have been installed.
- 11 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Result

When all channels have been installed, you can start normal operation.

Caution _____

You must never start ES80 transmissions ("pinging") when the ship is in dry dock. The transducer may be damaged if it transmits in open air.

Disconnecting transceiver channels

In order to use the ES80 the Processor Unit must be connected to one or more transceivers, and each of these must in turn be connected to one or more transducers. A transceiver channel can be disconnected from the ES80 Processor Unit. This is typically useful if the transceiver shall be used by another Processor Unit on another echo sounder system. It is also useful if you have very many channels, and wish to reduce the number of echogram views in your presentation.

Context

The **Transceiver Installation** parameters control the installation and disconnection of transceivers. Every time the page is opened, the ES80 software automatically performs a search on the Ethernet network for transceivers.

The list in the upper part on the **Transceiver Installation** page shows you an overview of the transceivers and channels that are currently available. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency. Each channel is identified by the transceiver type and serial number and the transducer(s) in use. The current status for each channel is also provided.

- **Busy:** The channel is already in use, probably by another echo sounder on the same network. You can not connect to this channel.
- **Installed:** This channel is connected to your ES80 system.
- **Lost:** This channel can not be used.
- **Available:** This channel is vacant and ready for use.

Note

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

Procedure

- 1 Open the **Setup** menu.
- 2 On the **Setup** menu, select **Installation**.



Observe that the **Installation** dialog box opens. This dialog box contains a number of pages selected by the menu on the left side.

- 3 On the left side of the **Installation** dialog box, select **Transceiver**.
- 4 Disconnect the requested frequency channels(s).
 - a Observe that the transceiver(s) you have connected to the Processor Unit are listed.

Each transceiver is identified with type and serial number. The available channels on each transceiver are listed separately.

- b Write down which transducers you are using on each channel.
 - c For each channel you wish to disconnect, set transducer to *None*.
 - d Observe that the status for the relevant frequency channels changes to *Available*.
- 5 At the bottom of the page, select **Apply** to save your settings.
- 6 Continue your work in the **Installation** dialog box, or select **OK** to close it.

Result

You can not use the disconnected channels. If you wish to use them again, each must be re-installed.

Maintaining the ES80

Topics

[Updating the online help file, page 195](#)

[Adding an online help file in a new language, page 196](#)

[Accessing and retrieving message log files, page 198](#)

[Checking the transducer by means of the BITE functionality, page 198](#)

[Inspecting and cleaning the transducer face, page 199](#)

[Painting the transducer face, page 201](#)

[Rules for transducer handling, page 202](#)

[Approved anti-fouling paints, page 204](#)

Updating the online help file

The ES80 is provided with an extensive context sensitive on-line help system. Occasionally, the help file is updated. You can then update your ES80 installation with the new information.

Prerequisites

In order to update the on-line help system, you need a USB flash drive. This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

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

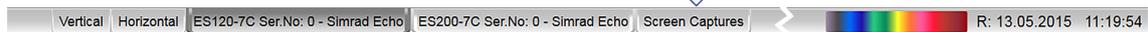
Due to limitations defined by Microsoft®, CHM files will not open from websites and servers.

[Context sensitive on-line help, page 67](#)

Procedure

- 1 Obtain the new on-line help file.

- a Download the on-line help file from the ES80 pages on <https://www.simrad.com>.
 - b Change the name of the file to `ES80.chm`
 - c Copy the file to a USB flash drive.
- 2 Observe the **Screen Captures** tab at the bottom of the ES80 presentation.



- 3 Select the **Screen Captures** tab to open the screen capture browser.
- 4 In the browser, select **Open Image Folder** to open the operating system folder.
- 5 Navigate to the folder with the on-line help files.

```
c:\program files\Simrad\NGE\ES80\ES80_Settings\Language
```

Observe that the folder contains one sub-folder for each language. Examples are "en" for English, "es" for Spanish and "de" for German. Language folders may be missing. In such cases, the ES80 help is provided in English.

- 6 Update the existing help file.
 - a Open the relevant language folder.
 - b Rename the existing (old) CHM file to `old_ES80.chm`.
 - c Copy the downloaded file `ES80.chm` from the USB flash drive to the correct language folder.
- 7 Close the file manager utility.
- 8 Restart the ES80.

Adding an online help file in a new language

The ES80 is provided with an extensive context sensitive on-line help system. Occasionally, the help is available in a new language. You can then update your ES80 installation with the new information.

Prerequisites

In order to update the on-line help system, you need a USB flash drive. This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

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.

Context sensitive on-line help, page 67**Procedure**

- 1 Obtain the new on-line help file.
 - a Download the on-line help file from the ES80 pages on <https://www.simrad.com>.
 - b Change the name of the file to `ES80.chm`
 - c Copy the file to a USB flash drive.
- 2 Observe the **Screen Captures** tab at the bottom of the ES80 presentation.



- 3 Select the **Screen Captures** tab to open the screen capture browser.
- 4 In the browser, select **Open Image Folder** to open the operating system folder.
- 5 Navigate to the folder with the on-line help files.

```
c:\program files\Simrad\NGE\ES80\ES80_Settings\Language
```

Observe that the folder contains one sub-folder for each language. Examples are "en" for English, "es" for Spanish and "de" for German. Language folders may be missing. In such cases, the ES80 help is provided in English.

- 6 Add the new help file.
 - a Create a folder for the new language.
Make sure that you use the correct folder name.
 - b Copy the downloaded file `ES80.chm` from the USB flash drive to the correct language folder.
- 7 Close the file manager utility.
- 8 Restart the ES80.

Accessing and retrieving message log files

ES80 uses messages as a part of the built-in test equipment (BITE). The messages offer information about the operational status of the ES80. Whenever the ES80 issues a message, it is shown in the **Messages** dialog box. Simultaneously, all messages are stored in a number of log files on the Processor Unit hard disk. If you experience abnormal behavior, and wish to consult support, these log files are very useful.

Prerequisites

In order to update the on-line help system, you need a USB flash drive. This procedure assumes that you are familiar with the Microsoft® operating system utilities for file handling.

Procedure

- 1 Observe the **Screen Captures** tab at the bottom of the ES80 presentation.



- 2 Select the **Screen Captures** tab to open the screen capture browser.
- 3 In the browser, select **Open Image Folder** to open the operating system folder.
In the file manager utility, locate the folder you defined on the **File Setup** page.
- 4 Navigate to the folder with the log files.
`c:\programdata\Simrad\ES80\Log`
- 5 Copy the files to the USB flash drive.
- 6 Close the file manager utility.
- 7 Send the file(s) by e-mail to your support contact.

Checking the transducer by means of the BITE functionality

The ES80 can be set up to work with one or more transceivers. In turn, each transceiver is assigned one or more transducers. By means of the BITE (Built-In Test Equipment) system, you can check the impedance of each transducer during normal operation. Any errors are then easily detected.

Prerequisites

The ES80 is switched on and working in normal operational mode. Neither tools nor instruments are required.

Context

The transducer impedance is measured in real time during each transmission ("ping"). For LFM transmissions, the results are shown in two plots.

- If the current transmit mode is *CW*, the x-axis shows time (one ping).
- The other plot shows the phase as a function of the frequency in the same ping.

In each plot, one coloured curve is provided for each transducer or transducer sector. A single beam transducer is shown with only one curve. A split beam transducer is shown with several curves, one for each sector.

Procedure

- 1 Open the **Setup** menu.
- 2 Select **BITE** to open the dialog box.



- 3 Select **Transducer** to open the page.
- 4 Select which transducer to monitor.
- 5 Observe the impedance curve for the chosen transducer.

Select **Fixed Axis** to make the impedance curves easier to read.

An operational transducer element will have an impedance of approximately $75\Omega \pm 40\%$. However, various transducers will have different values, and you need to check the relevant data sheet. Composite transducers have a relatively flat impedance curve. Older transducers with "ton-pilz" elements have a slightly higher impedance at the beginning of the ping. This is by design.

- If you measure $\infty\Omega$ (open circuit), you can assume that the transducer impedance transformer has broken, or that the cable is damaged.
 - If you measure 0Ω (short), you can assume that either the transducer impedance transformer or the cable has shorted. You may also have a problem with salt water penetration.
- 6 Select **OK** to close the dialog box.

Inspecting and cleaning the transducer face

Marine growth (biological fouling) on the transducer face reduces the ES80 performance. For this reason, it is important to keep the transducer face clean. Every time your vessel is in dry dock, you must remove the marine growth. At the same time, you must inspect the transducer closely for physical damage.

Prerequisites

The following tools and consumables are required.

- Personal protection
- Fresh water
- A mild synthetic detergent and a plastic brush

- A piece of wood or plastic without sharp corners
- Citric acid (<50%) (only if required)

Context

During normal use, the transducer is subjected to biological fouling. If this marine growth is excessive, it will reduce the performance of the ES80. Whenever opportunity arise, typically when the vessel is dry docked, the transducer face must be cleaned for shells and other marine growth.

It is important to check the transducer for physical damage. Any cracks, fractures or holes in the red protective coating may result in a water leak, and a leak may cause irreparable damage to the transducer.

A transducer must always be handled as a delicate item. Wrongful actions may damage the transducer beyond repair. Observe these transducer handling 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 face.
- **Do not** lift the transducer by the cables.
- **Do not** step on the transducer cables.
- **Do not** damage the transducer cables, avoid sharp objects.

Procedure

- 1 Allow for sufficient access to clean and inspect the entire surface of the transducer.
- 2 Remove biological fouling carefully using a plastic brush, a suitable synthetic detergent and fresh water.

Biological material which is strongly rooted in the substrate can be removed carefully with a piece of wood or plastic.

If required, you can also use citric acid. Apply, leave it working for several hours, and rinse thoroughly with fresh water.

Note

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 face.

- 3 Allow the transducer surface to dry.

- 4 Do a thorough visual inspection of the transducer. Check for dents, scratches, holes or other damage to the surface.
If you suspect damage, take a high resolution photo. Contact your dealer or the Simrad support organization for advice.
- 5 Apply anti-fouling paint as described in the dedicated procedure.

Note _____

Because some paint types may be aggressive to the polyurethane in the transducer, consult our list of approved paints.

The list can also be found on <http://www.simrad.com>.

Painting the transducer face

Marine growth (biological fouling) on the transducer face reduces the ES80 performance. We recommend that you paint the transducer face immediately after installation, and then again as often as required to maintain the protection.

Prerequisites

The following tools and consumables are required.

- Personal protection
- Fresh water
- A mild synthetic detergent and a plastic brush
- Fine-grade sandpaper (240 inch grit size)
- Primer
- Anti-fouling paint
- Wet film gauge

Because some paint types may be aggressive to the polyurethane in the transducer, consult our list of approved paints.

The list can also be found on <http://www.simrad.com>.

Context

The transducer has not been designed with any protection against biological fouling. Anti-fouling paint may therefore be applied to the transducer face.

To minimize the negative acoustical effects the layer of anti-fouling paint must be as thin as possible.

Note

The anti-fouling paint will reduce the acoustical performance of the transducer.

The surface roughness of the transducer substrate and the thickness of the paint may also influence the performance.

Kongsberg Maritime can not be held responsible for any negative consequences of the anti-fouling paint.

Observe the relevant instructions and safety information provided by the paint manufacturer.

Procedure

- 1 Clean the transducer thoroughly. Make sure that you remove all oil grease residues, as well as salt and other contamination.
- 2 Allow the transducer surface to dry.
- 3 Abrade the transducer surface using a sanding paper with 240 inch grit size.
Do not exceed a surface roughness (R_{max}) of 35 microns as this can influence the ES80 performance.
- 4 Remove all dust.
- 5 Apply the primer, and let it dry.
- 6 Apply the paint.

Observe the instructions provided by the paint manufacturer. Use airless spray. Apply the minimum specified film thickness per coat and for the complete layer. It is not possible to measure dry film thickness on transducer surface. You must therefore use a wet film gauge to frequently measure the paint thickness.

Note

We strongly recommend that you do not use a paintbrush and/or a roller.

- 7 Allow the paint to dry.

Further requirements

The contractor or shipyard must keep a daily paint log recording all relevant information from the surface treatment.

Rules for transducer handling

To secure long life and accurate results, the transducer must be handled correctly.

A transducer must always be handled as a delicate item. Wrongful actions may damage the transducer beyond repair. Observe these transducer handling rules:

- 1 **Do not** activate the transducer when it is out of the water.

- 2 **Do not** handle the transducer roughly, avoid impacts.
- 3 **Do not** expose the transducer to direct sunlight or excessive heat.
- 4 **Do not** use high pressure water, sand blasting, metal tools or strong solvents to clean the transducer face.
- 5 **Do not** damage the outer protective skin on the transducer face.
- 6 **Do not** lift the transducer by the cable.
- 7 **Do not** step on the transducer cable.
- 8 **Do not** damage the transducer cable, avoid sharp objects.

Transport protection

Some transducers are delivered with a cover plate to protect the face during transport and installation. Let this plate stay on as long as possible, but do not forget to remove it before the vessel goes to sea.

Cleaning and painting the transducer face

During normal use, the transducer is subjected to biological fouling. If this marine growth is excessive, it will reduce the performance of the ES80.

The transducer has not been designed with any protection against biological fouling. Whenever opportunity arise, typically when the vessel is dry docked, the transducer face must be cleaned for shells and other marine growth.

- Be careful so that you do not accidentally make cuts or inflict other physical damage to the transducer face.
- Remove biological fouling carefully using a plastic brush, a suitable synthetic detergent and fresh water. Biological material which is strongly rooted in the substrate can be removed carefully with a piece of wood or plastic.
- **Do not** use high pressure water, sand blasting, metal tools or strong solvents to clean the transducer.

Anti-fouling paint may be applied to the transducer face. To minimize the negative acoustical effects the layer of anti-fouling paint must be as thin as possible.

Note

The anti-fouling paint will reduce the acoustical performance of the transducer. The surface roughness of the transducer substrate and the thickness of the paint may also influence the performance. Kongsberg Maritime can not be held responsible for any negative consequences of the anti-fouling paint.

Because some paint types may be aggressive to the polyurethane in the transducer, consult our list of approved paints. The list can also be found on <http://www.simrad.com>.

Observe the relevant instructions and safety information provided by the paint manufacturer.

Special rules for acoustic windows

Arctic tanks have acoustic windows made of polycarbonate.

These must neither be painted nor cleaned with chemicals.

Acoustic windows must not be exposed to direct sunlight.

Approved anti-fouling paints

This is our list of approved antifouling paints for all transducer types. Always refer to the manufacturer's documentation and data sheets for a complete procedure and for relevant safety information.

Important

Do not paint the transducer with traditional hull plating paint. Use only the correct type of approved paint specified below.

Do not use high pressure water, sand blasting, metal tools or strong solvents to clean the transducer face.

Jotun

Address: P.O.Box 2021, N-3248 Sandefjord, Norway

<http://www.jotun.com>

- **Primer:** Safeguard Universal ES
Apply 80 µm wet film thickness (50 µm dry film thickness)
- **Paint:** SeaQuantum Ultra S
Apply 250 µm wet film thickness (125 µm dry film thickness)

Data sheets and application guides can be downloaded from: <http://www.jotun.com/ww/en/b2b/technical-info/tds/index.aspx>

International Marine Coatings

Address: Stonegate Lane, Felling, Gateshead, Tyne & Wear, NE10 0JY United Kingdom

www.international-marine.com

- Intersleek 1100SR
 - **Primer:** Intersleek 737
Apply 50µm dry film thickness
 - **Paint:** Intersleek 1100SR
Apply 150µm dry film thickness
- Intersmooth 360 Ecoloflex SPC

User interface

Topics

[ES80 user interface familiarisation, page 206](#)

[Top bar, page 208](#)

[Information panes, page 222](#)

[Echogram views, page 241](#)

[Echogram lines and markers, page 254](#)

[The ES80 menu system, page 266](#)

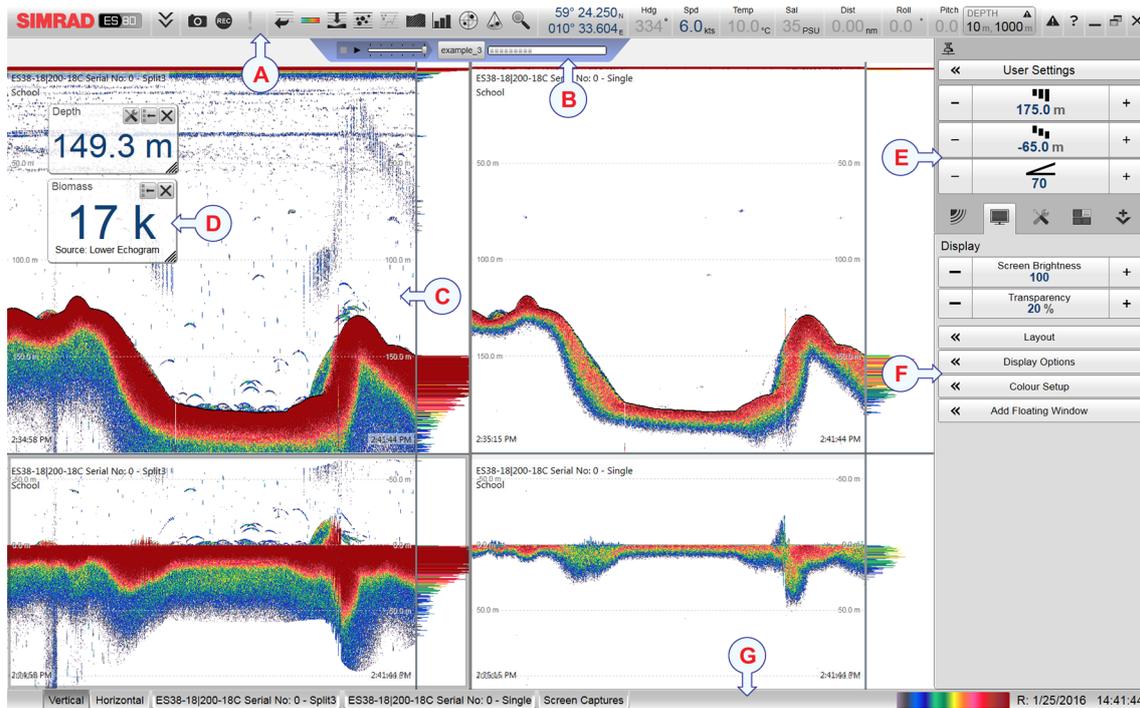
[Bottom bar description, page 267](#)

[Replay bar description, page 268](#)

[Screen capture browser description, page 270](#)

ES80 user interface familiarisation

By default, the ES80 presentation covers the entire screen. The visual elements provide you with the echo information you need, they help you to control the functionality needed to understand this information, and finally, they allow you to control the operational parameters.



This ES80 screen capture shows you a typical data replay situation. You can see the same echoes from two different transducers, one low frequency (left), and one high frequency. There are two echogram views for each transducer. You can see several rectangular sonar views presenting sonar echo data in different ways. The top bar shows you navigational information as well as 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 ES80.

A Top bar

The ES80 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 make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. And more important, the top bar allows you to see when data recording is active.

B Replay bar

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

C Echogram views

By default, you have two echograms for each frequency channel. You can choose which type of echogram you wish to see. If you have more than one frequency channel, the echograms for each channel can be presented horizontally with one over the other, or vertically next to each other. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

D Information panes

The ES80 offers several *information panes* to provide additional and detailed data from the ES80 presentation. The information panes are opened and closed using the buttons on the top bar. You can change the appearance of the information panes to suit your preferences. You can change the transparency and the physical size of each pane.

E Main menu

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. By default, the **Main** menu is open, and positioned on the right hand side of the ES80 presentation. On the top bar, use the **Menu** button to hide or show the menu.



F 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.

G Bottom bar

The bottom bar is located at the bottom of the ES80 presentation, and stretches from the far left to the far right side. The tabs on the bottom bar allows you to choose channel and presentation mode. A dedicated tab provides you with a special view to see the screen captures you have made. The bottom bar also shows you the current colour scale, as well as time and date.

Top bar

Topics

- [Top bar overview, page 208](#)
- [Logo and product name, page 209](#)
- [Menu button, page 209](#)
- [Screen Capture button description, page 210](#)
- [Record indicator description, page 211](#)
- [Event button description, page 212](#)
- [Information panes overview, page 212](#)
- [Navigational information, page 215](#)
- [Messages button description, page 220](#)
- [Help button description, page 220](#)
- [Operating system button descriptions, page 221](#)

Top bar overview

The ES80 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 make a screen capture, to open the **Messages** dialog box, and to open the context sensitive on-line help. And more important, the top bar allows you to see when data recording is active.



A Logo and product name

This information identifies the brand and the product.

B Menu button

Select this button to hide or show the menu system.

C Screen Capture / Event / Record

Select **Screen Capture** to make a copy of the current ES80 presentation. Select **Event** to initiate an event annotation on the echogram. The **Record** indicator is used to show you when recording is active.

D Information panes

Each information pane is opened and closed with its dedicated button on the top bar.

E Navigational information

These are not buttons, but separate fields that show you useful information related to the vessel and/or ES80 navigation and operation. The information shown on the ES80 top bar must not be used for vessel navigation!

F Depth Alarm

If the current depth changes to exceed the limits you have chosen, the alarm is triggered. Double-click **Depth Alarm** to open the **Alarm Limits** dialog box.

G Messages button

By flashing, the **Messages** button shows you that the ES80 has issued a message. The colour of the triangle reflects the severity of the most serious message. Select the button to open the **Messages** dialog box.

H Operating system buttons

The operating system buttons open the context sensitive online help, minimize and maximize the presentation window, and close down the ES80 program.

Logo and product name

The brand logo and product name are shown on the left side of the top bar.

Description

This information identifies the brand and the product.



Double-click the logo to reduce the size of the ES80 presentation.

Double-click one more time to return to full screen presentation.

Menu button

The **Menu** button is located on the left side of the top bar. This is an "on/off" button.

Description

Unless you need to make frequent changes to the operational parameters, you may wish to hide the menu from the ES80 presentation. This will give you more space to present echo data.



To hide the menu, select **Menu** on the top bar. To retrieve it, select **Menu** one more time.

When the menu is hidden, it is temporarily shown on the left or right hand side of the ES80 presentation if you move the cursor to that position.

Tip

*The **Menu on the right side** function is provided by the **Display Options** dialog box. Select this function to place the menu system on the right hand side of the ES80 presentation. This is the default setting. By **deselecting** this function, the entire menu system is placed permanently on the left side of the ES80 presentation.*

Related menus

[Main menu, page 274](#)

Screen Capture button description

When you use the ES80 actively, you may need to make a screen capture to save an instantaneous image of the current presentation.

Description



Select **Screen Capture** to make a copy of the current ES80 presentation.

The screen captures you make are saved on the hard disk in the Processor Unit on JPG format. To view the images you have saved, select **Screen Capture** on the bottom bar. This opens the built-in image browser, which allows you to retrieve the images.

Tip

Before you make the screen capture, you may wish to place an event marker on the echogram. The event marker may be useful later to identify the information.

Related tasks

[Saving an echogram screen capture image, page 95](#)

[Recalling single echogram screen capture images, page 96](#)

[Accessing the screen capture images to delete, move or copy them, page 96](#)

Record indicator description

A useful function of the ES80 is its ability to record echo data. The raw data recording function provided by the ES80 allows you to save echo data using the *.raw format. The data files can be played back on the ES80. The files can later be deleted, copied or moved to another storage device.

Description

The **Record** indicator is used to show you when recording is active. The button is red when recording is in progress.



Tip

*Do not confuse the **Record** function with the automatic **History** function. Unless you really need to record raw data for playback purposes, you should use this function with care. The data files will fill your hard disk very fast! The History function saves the echogram images automatically on the Processor Unit hard disk. These images can be recalled using the History information pane. The information in the History presentation is the same as on the original echogram presentation.*

The **Record** button allows you to start and stop recording. If the current recording file gets too large, you can - even during recording - select **Split File** to start a new file. **Record** is located on the **Operation** menu.

Note

Data files will normally become very large. If you wish to record large amounts of ES80 data, make sure that you have enough space on your hard disk. Unless your Processor Unit is equipped with a very large disk, we recommend that you save the data to an external storage device.

Related tasks

[Defining the file and folder settings for data recording, page 89](#)

[Recording echo data, page 90](#)

[Selecting *Replay* operational mode, page 92](#)

[Choosing which echo data file\(s\) to replay, page 93](#)

[Accessing the echo data files to delete, move or copy them, page 94](#)

Related topics

[Replay bar description, page 268](#)

Event button description

An event is a type of annotation that you can add to the echogram. You can use an event to identify echoes of special interest, or when something special happened. Events may be triggered by external devices, set by a timer, or initiated by selecting the **Event** button on the top bar.

Description

The **Event** button is used to initiate an event annotation on the echogram. To set up the event type, use the options on the **Annotations** page.



Tip

*The **Annotations** page is located in the **Installation** dialog box. The **Installation** dialog box is located on the **Setup** menu.*

Related tasks

[Adding a single manual annotation to the echogram, page 116](#)

[Adding annotations to the echograms, page 117](#)

Information panes overview

The ES80 offers several *information panes* to provide additional and detailed data from the ES80 presentation. The information panes are opened and closed using the buttons on the top bar.

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Select the relevant button on the top bar to open the information pane.

In most cases, the data in the information pane is only valid for the selected channel.

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



The ES80 offers the following information panes (from left).

- *History*

The *History* information pane allows you to view previously recorded echogram sequences. Do not confuse this function with the recording functionality. The *History* function saves the echogram images automatically on the Processor Unit hard disk. The information in the *History* presentation is the same as on the original echogram presentation.

[History information pane description, page 222](#)

- *Colour Scale*

The *Colour Scale* information pane allows you to view the current colour scale in use, and to make changes to the echo levels it presents.

[Colour Scale information pane description, page 223](#)

- *Depth*

The *Depth* information pane provides the water depth in the current echogram view. If you have several echogram views open, you can place one pane in each view.

[Depth information pane description, page 225](#)

- *Biomass*

The *Biomass* information pane displays an index of the biomass in the current echogram view. The biomass index is the same as the NASC (Nautical area scattering strength) with unit m^2/nmi^2 .

[Biomass information pane description, page 227](#)

- *School Response*

The *School Response* information pane shows you the volume backscatter as a function of the frequency. The information is provided as a plot that shows the how the echo strength for a group of targets (for example a school of fish) change with the operational frequency. This functionality allows you to identify the nature of the schools, and discriminate between them. The information pane can only be opened when the ES80 operates with FM ("chirp") transmissions.

[School Response information pane description, page 229](#)

- *Bottom Hardness*

The *Bottom Hardness* information pane shows you the current bottom reflectivity. This indicates what type of bottom you have under your keel. The value is calculated using the bottom echo strength in the current ping.

[Bottom Hardness information pane description, page 231](#)

- *Size Distribution*

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

[Size Distribution information pane description, page 233](#)

- *Fish Position*

The *Fish Position* information pane shows the position of the detected single fish echoes. The current ping (largest circles) and the three previous ping (smaller circles) are shown. The view is "from above". The colours indicate the echo strength. The *Fish Position* information pane requires the use of a split-beam transducer.

[Fish Position information pane description, page 235](#)

- *Echo Position*

The *Echo Position* information pane shows the position of the detected single echoes within the beam. The current ping (largest circles) and the three previous ping (smaller circles) are shown. The view is "from the side". The colours indicate the echo strength. The *Echo Position* information pane requires the use of a split-beam transducer.

[Echo Position information pane description, page 237](#)

- *Zoom*

The *Zoom* information pane allows you to magnify a chosen area of the current echogram.

[Zoom information pane description, page 239](#)

Tip

You can easily change the physical size and shape of each information pane. Click in its lower right corner, and drag to a new size.

*The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. The **Transparency** function is located on the **Display** menu.*



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Retrieving the latest echogram history, page 120](#)

[Disabling the automatic echogram history recording, page 121](#)

[Changing the colour scale in the ES80 presentations, page 122](#)

[Opening the Depth information pane to read the current depth, page 124](#)

[Investigating the biomass, page 125](#)

[Changing the calculation parameters for the Biomass information pane, page 126](#)

[Investigating the bottom characteristics, page 132](#)

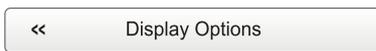
[Selecting fish species and changing their size to improve the size distribution information, page 133](#)

[Changing the calculation parameters for the Size Distribution information pane, page 134](#)

[Using the Zoom information pane to study details in the echogram, page 134](#)

Navigational information

The navigational information is located on the middle of the top bar. To choose which navigational information to be displayed on the top bar, use the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

These are not buttons, but separate fields that show you useful information related to the vessel and/or ES80 navigation and operation.

Note

The information shown on the ES80 top bar must not be used for vessel navigation!

The following colours are used to indicate the quality of the information:

- **Blue:** The information is good.
- **Yellow:** The information contains manually overwritten values.

Tip

*Which navigational elements to see on the top bar is selected in the **Display Options** dialog box.*

*To set up the various operational parameters related to navigational inputs, open the **Installation** dialog box, and investigate the functionality related to sensor interfaces.*

Topics

[Geographical position read-out, page 216](#)

[Heading read-out, page 216](#)

[Speed read-out, page 217](#)

[Temperature read-out, page 217](#)

[Distance read-out, page 218](#)

[Salinity read-out, page 218](#)

[Motion read-outs \(roll, pitch and heave\), page 219](#)

[Depth read-out, page 219](#)

Geographical position read-out

When enabled, the vessel's current geographical position is shown on the top bar.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

If a positioning sensor (GPS) is connected to the ES80, the top bar can show you the vessel's geographical position in longitude and latitude.

Note

The information shown on the ES80 top bar must not be used for vessel navigation!

Return to...

[Navigational information, page 215](#)

Heading read-out

When enabled, the vessel's current heading is shown on the top bar.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

If a heading sensor (gyro compass) is connected to the ES80 Processor Unit, the top bar may show you the vessel's current heading.

Note

The information shown on the ES80 top bar must not be used for vessel navigation!

Return to...

[Navigational information, page 215](#)

Speed read-out

When enabled, the vessel's current speed is shown on the top bar.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

If a speed sensor is connected to the ES80 Processor Unit, the top bar may show you the vessel's current heading.

Tip

*By default, the vessel speed is shown in knots. You can change the measurement unit on the **Units** page. The **Units** page is located in the **Installation** dialog box.*

Return to...

[Navigational information, page 215](#)

Temperature read-out

The navigational information on the top bar may include a read-out of the current water temperature.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

If a suitable sensor is connected to the ES80 Processor Unit, the top bar may show you the current temperature. The function is offered to allow you to monitor the water temperature, but it will display any temperature reading that is made by the sensor.

Tip

*By default, the temperature is shown in Celcius. You can change the measurement unit on the **Units** page. The **Units** page is located in the **Installation** dialog box.*

If you define a manual temperature value in the **Environment** dialog box, it is shown in the **Temperature** read-out. The **Environment** dialog box is located on the **Setup** menu.

Return to...

[Navigational information, page 215](#)

Distance read-out

When enabled, the navigational information on the top bar includes a read-out of the vessel's sailed distance.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

If a relevant sensor is connected to the ES80 Processor Unit, the top bar will show you the vessel's sailed distance.

Tip

*The distance is by default shown in nautical miles. You can change the measurement unit on the **Units** page. The **Units** page is located in the **Installation** dialog box.*

The information shown on the ES80 top bar must not be used for vessel navigation!

Return to...

[Navigational information, page 215](#)

Salinity read-out

The navigational information on the top bar may include a read-out of the current salinity.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.



Description

The top bar may show you the current water salinity.

To provide the current salinity, use the **Environment** dialog box. Input any salinity value between 0 to 40 PSU. The **Environment** dialog box is located on the **Setup** menu.

Conceptually the salinity is the quantity of dissolved salt content of the water. [...] Seawater typically has a salinity of around 35 g/kg, although lower values are typical near coasts where rivers enter the ocean. Rivers and lakes can have a wide range of salinities, from less than 0.01 g/kg[3] to a few g/kg, although there are many places where higher salinities are found.

<https://en.wikipedia.org/wiki/Salinity>, April 2016

Return to...

[Navigational information, page 215](#)

Motion read-outs (roll, pitch and heave)

When enabled, the navigational information on the top bar includes the vessel's current roll, pitch and heave movements.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.

**Description**

If a suitable motion reference unit (MRU) sensor is connected to the ES80 Processor Unit, the top bar can show you the vessel's current movements. The roll and pitch information is always shown in degrees.

Return to...

[Navigational information, page 215](#)

Depth read-out

If enabled, the current water depth is shown on the top bar.

Prerequisites

To see this information on the top bar, you must enable it using the **Top Bar** functions in the **Display Options** dialog box. The **Display Options** dialog box is located on the **Display** menu.

**Description**

The current depth measured by one of the transceiver channels is shown on the top bar.

Which channel to use for the depth read-out is selected in the **Display Options** dialog box. The chosen channel is identified in the read-out rectangle. The **Display Options** dialog box is located on the **Display** menu. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Tip

*By default, the depth is shown in meters. You can change the measurement unit on the **Units** page. The **Units** page is located in the **Installation** dialog box.*

Return to...

[Navigational information, page 215](#)

Messages button description

The **Messages** button is located on the right side of the top bar.

Description

A new message is flagged with the **Messages** button on the top bar. The button is flashing to draw your attention. The colour of the triangle reflects the severity of the most serious message.



- **Yellow:** This indicates a warning.
- **Red:** This indicates an alarm.

If you hold the cursor over the button, a short list of the current messages is shown.

Select the button to open the **Messages** dialog box.

Help button description

The **Help** button is located on the right side of the top bar.

Description

Select this button to open the ES80 context sensitive on-line help. The help system opens on its start page.



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.

The ES80 on-line help may not be available for the language you have chosen for the user interface. If your language is not supported, the English on-line help is provided.

Tip

*On-line help is also available from the various dialog boxes in the ES80 user interface. Select **Help [?]** in the top right corner of a dialog box to open the context sensitive on-line help.*

Related tasks

[Opening the context sensitive on-line help, page 82](#)

Related topics

[Context sensitive on-line help, page 67](#)

Operating system button descriptions

The operating system function buttons are located on the right side of the top bar. The buttons are **Minimize**, **Maximize** and **Close**.

Minimize button

Select this button to minimize the entire ES80 presentation. The program is then only shown as an icon on the operating system's task bar. To re-open, select the button one more time.



Maximize/Normalize button

Select this button to change the size of the ES80 presentation window. To restore the presentation to its previous size, select the button one more time.



Close button

Select this button to close the ES80 program.



Related tasks

[Powering off the ES80, page 32](#)

Information panes

Topics

- [History information pane description, page 222](#)
- [Colour Scale information pane description, page 223](#)
- [Depth information pane description, page 225](#)
- [Biomass information pane description, page 227](#)
- [School Response information pane description, page 229](#)
- [Bottom Hardness information pane description, page 231](#)
- [Size Distribution information pane description, page 233](#)
- [Fish Position information pane description, page 235](#)
- [Echo Position information pane description, page 237](#)
- [Zoom information pane description, page 239](#)

History information pane description

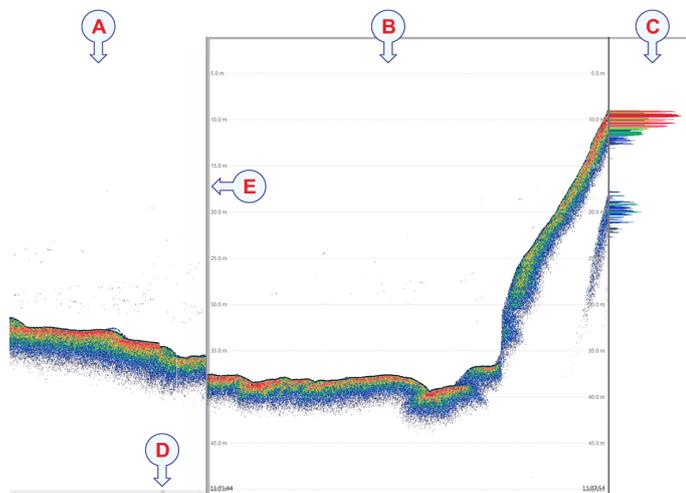
The *History* information pane allows you to view previously recorded echogram sequences. Note that this information pane does not use the same presentation method as the other panes.

How to open

To open the *History* information pane, select the button on the top bar. A dedicated view on the left side of the ES80 presentation opens to show you a history image. To *close* the *History* view, click this button one more time.



- A** *The History view*
This image is fixed, even if the echogram is scrolling sideways on the right hand side.
- B** *The active echogram presentation*
- C** *The active scope view presentation*
- D** *Click this button and drag it sideways to scroll through the recorded images*



E *Click this border and drag it sideways to change the size of the History view*

Description

The *History* function saves the echogram images automatically on the Processor Unit hard disk. These images can be recalled using the *History* information pane. The information in the *History* presentation is the same as on the original echogram presentation.

In order to show you the recorded echograms, the echogram presentation is split in two. The right side will show you the active echogram, while the left side is used to display the recorded history. Move the slider button at the bottom of the presentation to view the full extent of the image.

Note

The number of history files is limited. After reaching the maximum number of files, the latest echogram picture overwrites the oldest one. The history function still allows you to quickly look through echogram pictures from several hours.

Every time the *History* file is saved to the hard disk, the pinging may be interrupted. It is therefore possible to disable the *History* function. This function is located on the **File Setup** page in the **Output** dialog box.

Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Retrieving the latest echogram history, page 120](#)

[Disabling the automatic echogram history recording, page 121](#)

Colour Scale information pane description

The *Colour Scale* information pane allows you to view the current colour scale in use, and to make changes to the echo levels it presents.

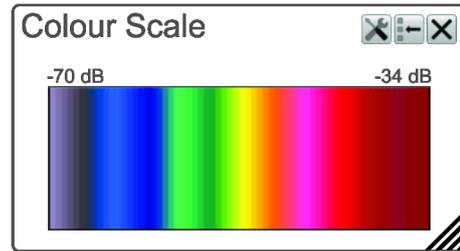
How to open

To open the *Colour Scale* information pane, click in the chosen view to activate it, then select the **Colour Scale** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



Description

The *Colour Scale* information pane shows you the current colour scale in use for the ES80 presentations. Note that additional functions related to the colour scales are available.



- **Colour Scale**

The colour scales used by the ES80 are designed to reflect the how strong the echoes are. The echo strength is measured in decibels (dB). In the basic colour scale with 12 colours, each colour represents a 3 dB step. This means that the entire scale covers 36 dB. The dynamic range of the ES80 is much larger. The **Colour Scale** parameters allow you to change the lower limit of colour scale range to match the current echoes.

- **Colour Setup**

The **Colour Setup** dialog box controls the presentation colours used by the ES80. This includes the palette ("skin"), the number of colours in use, and the colour scale.

- **Bottom bar**

The colour scale is shown on the bottom bar even when the *Colour Scale* information pane is closed.

The following colour scales are available.



The **Smooth Echosounder** scale is based on the standard 12-colour scale. Additional colours have been added between these to make "smoother" colour transitions.

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Setup

Select **Setup** to open the **Information Pane Options** dialog box. This dialog box allows you to change the presentation parameters related to the information pane.



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Changing the colour scale in the ES80 presentations, page 122](#)

Related functions

[Bottom bar description, page 267](#)

Depth information pane description

The *Depth* information pane provides the water depth in the current echogram view. If you have several echogram views open, you can place one pane in each view.

How to open

To open the *Depth* information pane, click in the chosen view to activate it, then select the **Depth** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



Description

The depth measure by the selected channel is shown. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

Tip _____

*By default, the depth is shown in meters. You can change the measurement unit on the **Units** page. The **Units** page is located in the **Installation** dialog box.*



Selecting **Setup** in the *Depth* information pane opens the **Bottom Detection** page in the **Information Pane Options** dialog box. The purpose of the **Bottom Detection** parameters are to define the upper and lower depth limits most likely to be used during the ES80 operation.

Tip

*If you have problems with bottom detection, you may consider disabling it. This can be useful if you only wish to study targets in the water column. Use the dedicated **Bottom Detection** function.*

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Setup

Select **Setup** to open the **Information Pane Options** dialog box. This dialog box allows you to change the presentation parameters related to the information pane.



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Verifying that the bottom is correctly detected, page 76](#)

[Opening the Depth information pane to read the current depth, page 124](#)

Biomass information pane description

The *Biomass* information pane displays an index of the biomass in the current echogram view. The biomass index is the same as the NASC (Nautical area scattering strength) with unit m^2/nmi^2 .

How to open

To open the *Biomass* information pane, click in the chosen view to activate it, then select the **Biomass** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



Description

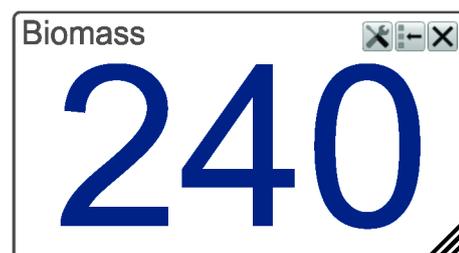
The digit shown in the *Biomass* information pane is a calculated index.

If more than one target is located in the acoustic beam at the same depth, it is not usually possible to resolve them separately. This is often the case with schooling fish or aggregations of zooplankton. In these cases, echo integration is used to estimate biomass. Echo integration assumes that the total acoustic energy scattered by a group of targets is the sum of the energy scattered by each individual target. This assumption holds well in most cases. The total acoustic energy backscattered by the school or aggregation is integrated together, and this total is divided by the (previously determined) backscattering coefficient of a single animal, giving an estimate of the total number.

http://en.wikipedia.org/wiki/Fisheries_acoustics, March 2015

The ES80 records all the targets from the smallest plankton to the largest whale. The biomass value is an indicator to how much fish you currently have in the beam. Every single fish will emit an echo, and the sum of all these registered echoes are presented as a number. Smaller organisms such as plankton will also emit echoes, but these are so weak that they will hardly influence on the total biomass.

The biomass value provides you with information about the fish abundance, and as such it may help you to decide if it pays off to start fishing. However, you must consider if the biomass value is a result of large amounts of plankton or bait, or if you have "real fish" below the keel. The biomass value is relative, and after some use your experience will be a valuable factor when the decision is made.



Note

You may experience very high and unrealistic biomass values that do not match the information in the echogram.

If you have other echo sounders or sonars running asynchronous with the ES80, these systems may cause interference. The ES80 may detect and measure the transmit pulses from other hydroacoustic systems, and these pulses have an effect on the biomass calculations.

*Try the **Ping-Ping Filter**. The **Ping-Ping Filter** analyses the historical information from previous consecutive pings in order to remove unwanted noise and interference from the ES80 presentation.*

To avoid all interference, a full synchronization of the various acoustic instruments is required. If your own vessel produces excessive noise this will also be taken into the biomass calculations and give you inaccurate data.

It is possible to convert the biomass index to weight (for example in metric tons). Based on practical use of the ES80 in different fisheries, you will soon be able to estimate the weight when you know the type of fish and their sizes.

Tip

*The **Biomass Line** allows you to monitor the current biomass in the echogram. This function writes an extra thick and brightly coloured curve on the echogram. The **Biomass Line** shows you the measured biomass for each individual ping. You can change the scale of the curve to fit the vertical space available on the echogram. To enable the **Biomass Line** function and change the scale, use the **Lines** page in the **Echogram** dialog box.*

By default, you have two echograms for each frequency channel. The presentation is split horizontally to show these echograms. The information pane provides information about its source, that is from which echogram the data comes from. The following sources can be shown:

- Source: Lower Echogram
- Source: Upper Echogram
- Source: Zoom

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Related tasks

[Removing noise and false echoes from the echogram, page 104](#)

[Investigating the biomass, page 125](#)

[Changing the calculation parameters for the Biomass information pane, page 126](#)

[Increasing the visibility of the information panes, page 139](#)

Related functions

[Biomass Line description, page 255](#)

School Response information pane description

The *School Response* information pane shows you the volume backscatter as a function of the frequency. The information is provided as a plot that shows the how the echo strength for a group of targets (for example a school of fish) change with the operational frequency. This functionality allows you to identify the nature of the schools, and discriminate between them.

Prerequisites

The *School Response* information pane can only be used when **Pulse Type** is set to *FM* in the **Normal Operation** dialog box.

How to open

To open the *School Response* information pane, click in the chosen view to activate it, then select the **School Response** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.

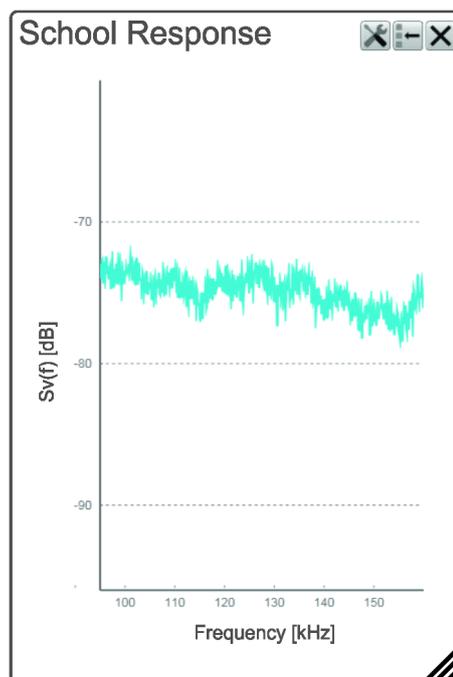


Description

The *School Response* information pane is a plot. It shows the how echo strength for a group of targets (for example a school of fish) changes with the operational frequency. The pane allows you to identify the nature of the schools, and discriminate between them.

Scientific research has proven that the variation in echo strength between echo sounder frequencies is different between species. Some species are easy to recognize using a higher frequency, while others are more easily detected using a low frequency. By means of this information pane, you can investigate how the echoes from the fishes changes with different frequencies.

We do not have an answer book for this. You need to build you own knowledge and experience based on the species you normally fish for.



By default, you have two echograms for each frequency channel. The presentation is split horizontally to show these echograms. The information pane provides information about its source, that is from which echogram the data comes from. The following sources can be shown:

- Source: Lower Echogram
- Source: Upper Echogram
- Source: Zoom

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Setup

Select **Setup** to open the **Information Pane Options** dialog box. This dialog box allows you to change the presentation parameters related to the information pane.



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Investigating the echo strength to determine the species in the school, page 128](#)

Bottom Hardness information pane description

The *Bottom Hardness* information pane shows you the current bottom reflectivity. This indicates what type of bottom you have under your keel. The value is calculated using the bottom echo strength in the current ping.

How to open

To open the *Bottom Hardness* information pane, click in the chosen view to activate it, then select the **Bottom Hardness** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



Description

The bottom hardness shown in the information pane was detected by the latest ping in the selected view. The colours on the left side of the scale indicate a soft bottom, while the colours on the right hand side indicate a harder bottom. The vertical line in the hardness colour scale positions the latest ping. The current reflectivity is also shown measured in dB.



Tip

The Hardness Line can be added to your echogram to retrieve additional information. It appears as thick colour coded line that follows the bottom contour. This line does not remove information, it simply "pushes" the echo information further down in order to show you the bottom reflectivity.

When you study the bottom hardness, you can learn more about the bottom. Certain species are known to prefer specific bottom conditions. With more knowledge, you are better qualified to estimate the possible catch.

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Related tasks

[Investigating the bottom characteristics, page 132](#)

[Increasing the visibility of the information panes, page 139](#)

Related functions

[Hardness Line description, page 257](#)

Size Distribution information pane description

The *Size Distribution* information pane shows a histogram of the echoes detected from single fishes. The calculations are based on the fact that different fish species have different echo strength. The echo strength also depends on the operational frequency you use. The histogram presents the actual size of the fish in weight or length, or with echo strength (shown in dB).

Prerequisites

The *Size Distribution* information pane requires the use of a split-beam transducer.

How to open

To open the *Size Distribution* information pane, click in the chosen view to activate it, then select the **Size Distribution** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



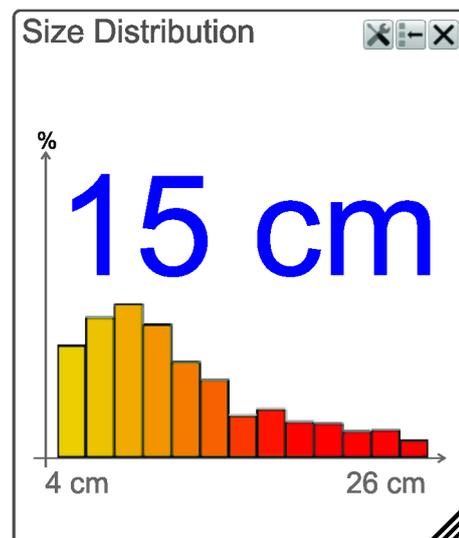
Description

The *Size Distribution* information pane shows a histogram of the single fish echoes that are detected. The calculations are based on the parameters you have selected in the **Calculation Interval** dialog box. It thus provides a visual indication on how large the individual fishes are within the chosen interval.

Only the fishes detected by the current channel are shown. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

The number shows the average size of all the fishes in the histogram. The value is presented in the unit you have chosen on the **Size Distribution** page. For an accurate X-axis value, place the cursor on the axis, and read the value from the tooltip label.

The abbreviation "TS" is commonly used for "target strength". This is a measure of how strong echo the individual fishes in the current echogram generate.



Tip

*The target strength from a fish varies from specie to specie. The **Fish Select** dialog box allows you to select the fish species you expect to catch, and manually adjust the size distribution. The **Fish Select** dialog box is located on the **Setup** menu.*

By selecting **Setup** in the information pane, the **Size Distribution** page opens. The **Size Distribution** page allow you to define the properties for the histogram shown in the *Size Distribution* information pane. The **Size Distribution** page is located in the **Information Pane Options** dialog box. The **Information Pane Options** dialog box is located on the **Active** menu.

By default, you have two echograms for each frequency channel. The presentation is split horizontally to show these echograms. The information pane provides information about its source, that is from which echogram the data comes from. The following sources can be shown:

- Source: Lower Echogram
- Source: Upper Echogram
- Source: Zoom

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Setup

Select **Setup** to open the **Information Pane Options** dialog box. This dialog box allows you to change the presentation parameters related to the information pane.



Related tasks

[Selecting fish species and changing their size to improve the size distribution information, page 133](#)

[Changing the calculation parameters for the Size Distribution information pane, page 134](#)

[Increasing the visibility of the information panes, page 139](#)

Fish Position information pane description

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

Prerequisites

The *Fish Position* information pane requires the use of a split-beam transducer.

How to open

To open the *Fish Position* information pane, click in the chosen view to activate it, then select the **Fish Position** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.

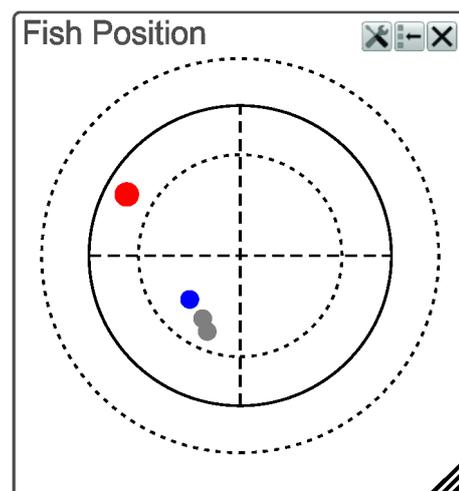


Description

Each circle in the information pane identifies a single fish. You can observe how these move through the ES80 beam. The colours of the circles are the same as the colours used in the colour scale, and these indicate the echo strength from each fish.

Tip

This information pane can be useful during trawling. Keep an eye on the Fish Position information pane to make sure that you can manoeuvre the trawl through the areas with most fish.



The three circles in the information pane identifies the operational frequencies if and when you work with a wide band transceiver. The dotted inner circle identifies the lower

frequency in the sweep, while the outer dotted circle identifies the upper frequency. The circle between them identifies the centre frequency.

This is basically the same view as in the *Echo Position* information pane. However, the fish echoes are here viewed from *above* and not from the side.

By default, you have two echograms for each frequency channel. The presentation is split horizontally to show these echograms. The information pane provides information about its source, that is from which echogram the data comes from. The following sources can be shown:

- Source: Lower Echogram
- Source: Upper Echogram
- Source: Zoom

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Setup

Select **Setup** to open the **Information Pane Options** dialog box. This dialog box allows you to change the presentation parameters related to the information pane.



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Locating the position of single fish in the beam, page 129](#)

Echo Position information pane description

The *Echo Position* information pane shows the position of the detected single echoes within the beam. The current ping (largest circles) and the three previous ping (smaller circles) are shown. The view is "from the side". The colours indicate the echo strength.

Prerequisites

The *Echo Position* information pane requires the use of a split-beam transducer.

How to open

To open the *Echo Position* information pane, click in the chosen view to activate it, then select the **Echo Position** button on the top bar. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



Description

Each circle in the information pane identifies a single fish. You can observe how these move through the ES80 beam. The colours of the circles are the same as the colours used in the colour scale, and these indicate the echo strength from each fish.

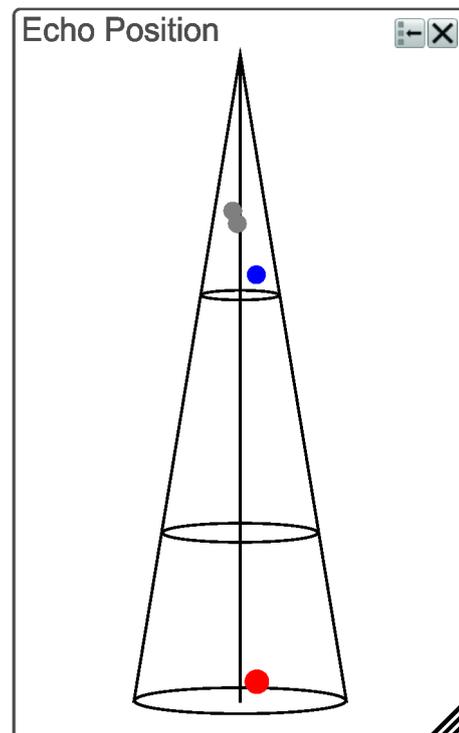
The height of the cone changes to reflect the current depth.

Tip _____

This is basically the same view as in the Fish Position information pane. However, the fish echoes are here viewed from the side and not from above. This means that you can also investigate the depth of the single fishes in the beam.

The information in the *Echo Position* information pane is presented in 3D.

- On a standard computer mouse, use the middle wheel to zoom in and out.
- Right-click while moving the mouse pointer to alter the 3D presentation.



By default, you have two echograms for each frequency channel. The presentation is split horizontally to show these echograms. The information pane provides information about its source, that is from which echogram the data comes from. The following sources can be shown:

- Source: Lower Echogram
- Source: Upper Echogram
- Source: Zoom

Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Related tasks

[Increasing the visibility of the information panes, page 139](#)

[Locating the position of single fish in the beam, page 131](#)

Zoom information pane description

The *Zoom* information pane allows you to magnify a chosen area of the current echogram. Three *Zoom* information panes can be opened for each channel.

How to open

To open the *Zoom* information pane, click in the chosen view to activate it, then select the **Zoom** button on the top bar. To open the second and third *Zoom* information panes, simply select the **Zoom** button repeatedly. To *close* the information pane, select the button on the top bar one more time. You can also select **Close** in the top right corner of the pane.



Description

Once the *Zoom* information pane is opened, the zoomed area is visible as a dotted rectangle in the echogram. You can change the size of this zoomed area, and you can move the rectangle anywhere inside the active view.

- Click inside the rectangle, hold the mouse button depressed, and move the rectangle within the borders of the view.
- Click any of the four corners, hold the mouse button depressed, and drag the rectangle to any other size and shape.

The echoes inside the zoomed area will always be shown in the *Zoom* information pane.

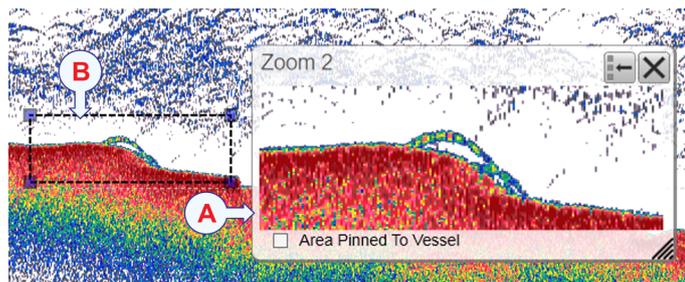
Use **Area Fixed To Vessel** to control the behaviour of the zoom function.

Each *Zoom* information pane export information. When opening the *Biomass* and/or the *Size Distribution* information panes, you will automatically receive information from each of the *Zoom* information panes that you have opened.

A *Zoom information pane*

B *Zoom rectangle used to define the size of the zoomed area*

In this screen capture, the zoomed area rectangle is positioned close to the *Zoom* information pane. You can however place the pane and the zoomed area independently anywhere you like inside the active view.



Before you open an information pane, you must first click in an echogram view to make it "active". By doing this you select the channel. In most cases, the data in the information pane is only valid for the selected channel. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

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



The **Transparency** function allows you to adjust how much you are able to see "through" the information panes you have opened. You can adjust the setting from 0% (no transparency) to 90% (almost full transparency) in steps of 10%.



Details

Area Fixed to Vessel

Use **Area Fixed To Vessel** to control the behaviour of the zoom function. When the rectangular zoomed area is established, it can either follow the echogram while it moves towards the left, or it can stay put.

- When **Area Fixed To Vessel** is active, the zoomed area will be permanently positioned on the echogram. The echoes shift through the area, and therefore also shift through the *Zoom* information pane.
- When **Area Fixed To Vessel** is switched off, the zoomed area will "follow" the echogram data from right towards left.

Close

Select this button to close the information pane. The pane closes immediately. If you wish to reopen it, simply click the button on the top bar one more time.



Reset size

You may have manually changed the physical size of the information pane. To reset the information pane to its default size, select the **Reset size** button in its top right corner.



Related tasks

[Using the Zoom information pane to study details in the echogram, page 134](#)

[Increasing the visibility of the information panes, page 139](#)

Echogram views

Topics

[About the echogram views, page 241](#)

[Surface echogram description, page 243](#)

[Bottom echogram description, page 245](#)

[Pelagic echogram description, page 248](#)

[Trawl echogram description, page 250](#)

About the echogram views

The ES80 supports several different echogram types. Each echogram is shown in a separate view in the ES80 presentation. The tabs at the bottom of the ES80 presentation allows you to choose which channels to open.

Supported echogram types

- **Surface**

A *Surface* echogram is mainly used when you wish to look at the entire water column starting from the sea surface and down to the bottom.

[Surface echogram description, page 243](#)

- **Bottom**

A *Bottom* echogram is mainly used when you wish to examine the echoes from fish close to the bottom.

[Bottom echogram description, page 245](#)

- **Pelagic**

A *Pelagic* echogram is mainly used when you wish to look at the water column starting from any distance below the sea surface down towards the bottom, but without seeing the bottom contour.

[Pelagic echogram description, page 248](#)

- **Trawl**

The *Trawl* echogram covers the vertical opening of the trawl with reference to the depth of the headrope.

[Trawl echogram description, page 250](#)

Selecting echogram views on the bottom bar

The number of tabs available on the bottom bar depends on how many channels your ES80 has. Two tab "groups" allow you to select channels and views. This example shows the ES80 with two channels. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.



A Presentation modes

Three presentation modes are available when you wish to see all the echogram channels simultaneously in the ES80 presentation. The three tabs will arrange the echogram views vertically, horizontally, or in rectangular rows and columns.

By default, the echogram views are automatically arranged in the ES80 presentation. You can click and drag the border on each individual view to change its size. The size of the other views are reduced accordingly.

B Selecting individual echogram channels

Each channel is shown with a dedicated tab. The channel is identified with the name of the transducer in use. This name is the custom name you provided when you installed the transducer. Select a specific transducer tab to see only that channel in the ES80 presentation.

Selecting which echogram type to use

Once one or more echogram views are open, you can choose which echogram type to see.



Click once in the echogram view that you wish to change. This will make the view "active". A thick border is placed on the selected view to visualize this. Open the **Active** menu, click **Echogram** to open the dialog box, and select **Echogram Type** on the **Echogram** page.

In each echogram view, you can also select from a number of markers, lines and annotations to enhance the echogram, or to provide additional information. These can be selected on the **Lines** page in the **Echogram** dialog box.

Surface echogram description

A *Surface* echogram is mainly used when you wish to look at the entire water column starting from the sea surface and down to the bottom. Since this echogram is referenced to the sea surface, the bottom contour will vary with the actual depth. You can select the start range (the depth from which the echogram starts) and the vertical range (the vertical "length" of the echogram) by means of the **Start Range** and **Range** settings. Both the **Range** and the **Start Range** functions are located on the **Main** menu.

How to open

To activate *Surface* echogram, click in the chosen view to make it "active". Select **Echogram** on the **Active** menu. Select the **Echogram** tab to open the page. On the **Echogram** page, set **Echogram type** to *Surface*.



Description

The *Surface* echogram is often used to study the water column from a few meters under the hull and down to the bottom. If you set up the **Start Range** and **Range** depths to place the bottom contour at the lower end of the echogram, you will have good opportunity to study the echoes from the water column. Since this echogram is referenced to the sea surface, the bottom contour will vary with the actual depth.

The biomass is automatically calculated based on choices you make in the **Calculation Interval** dialog box; within a given time frame, a defined number of pings, or a portion of the echogram view. The data is then taken from an echo area starting immediately after the transmit pulse, and ending just over the detected depth.

If you have limited your vertical range (using the **Start Range** and **Range** settings), the resulting area is used for the biomass calculation. If the seabed is clearly defined with a unique bottom detection, the bottom echo will not be included in the calculations. Therefore, if you switch the bottom detector off, the bottom echo will be included in the calculation.

Tip

For closer investigation, you can use the Zoom information pane to enlarge echoes from the water column or the bottom.



A This is the start depth of the echogram

In a *Surface* echogram you may wish to start the echogram from the surface, and will then set the **Start Range** to 0 (zero). You will then see the transmit pulse as a strong echo at the top of the echogram. Try setting **Start Range** to a small value, for example *1 meter*. The echogram will then start immediately *under* the keel or transducer face.

B This is the bottom (seabed)

The bottom is shown with a strong contour. Since the echogram is referenced to the sea surface, the bottom will vary with the actual depth. Different bottom conditions will have a visual effect on how the bottom echo is drawn. A hard bottom (rock) will give you a stronger echo - and thus a darker colour - than a soft bottom (mud or silt).

The **Echogram** page in the **Echogram** dialog box allows you to make adjustments to the bottom contour. You can add a black bottom line, and a white line to make the bottom "stand out". You can use the hardness line to indicate how hard the bottom is.

C Transducer identification

This text identifies the transducer - and thus also the channel - used to create the echogram. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

D This is the scope view

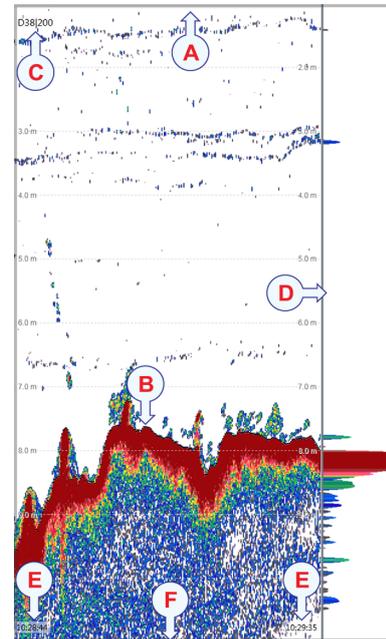
The *Scope* view is used to indicate how strong each echo is. The colour and the length of each line reflects the received echo amplitude.

E These are the labels

Small labels are shown in the bottom left and right corners of the echogram. These labels can contain time or distance to identify the horizontal axis of the echogram. You can hide the labels from view.

- **None:** The labels are hidden
- **Auto:** The horizontal scale is set automatically
- **Time:** The horizontal scale is defined by time. The time shown in the bottom right corner of the echogram is then the current time (now).
- **Distance:** The horizontal scale is defined by distance. The distance shown in the bottom right corner of the echogram is then 0 nautical miles (starting point).

The label information can be changed using the **Label** options on the **Horizontal Axis** page in the **Echogram** dialog box.



F This is the lower end of the chosen depth range

This depth is normally a few meters below the bottom contour, depending on the chosen range. The total echogram range (A) to (F) is defined with the **Range** button on the **Main** menu.

*Example***Start Range** in a surface related echogram

In a surface echogram, set the **Start Range** value to 10 meters. This will make the echogram start from 10 meters below the sea surface (provided that the transducer offset has been defined). Set **Range** to the current depth plus 20 meters. The echogram will now show the area from 10 meters below the sea surface, and down to 10 meters “below” the bottom. The bottom contour is easily detected when the depth changes.

Related tasks

[Selecting which echogram type to use, page 98](#)

[Changing the size of the echogram views, page 102](#)

[Adjusting the TVG in the Echogram dialog box, page 107](#)

[Selecting the horizontal scale in the echograms, page 109](#)

[Adding scale labels to the echograms, page 110](#)

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

[Adding automatic trawl lines to the echogram presentation, page 115](#)

[Adding manual trawl lines to the echogram presentation, page 116](#)

Bottom echogram description

The *Bottom* echogram shows the echoes over and below the bottom contour. Since this echogram is referenced to the bottom, the sea surface will vary with the actual depth, while the bottom is drawn flat. You can select the start range (the depth from which the echogram starts) and the vertical range (the vertical "length" of the echogram) by means of the **Start Range** and **Range** settings. Both the **Range** and the **Start Range** functions are located on the **Main** menu.

How to open

To activate *Bottom* echogram, click in the chosen view to make it "active". Select **Echogram** on the **Active** menu. Select the **Echogram** tab to open the page. On the **Echogram** page, set **Echogram type** to *Bottom*.



Description

A *Bottom* echogram is mainly used when you wish to examine the echoes from fish close to the bottom. Set up the **Start Range** and **Range** depths to hide the surface and place the bottom contour at the middle of the echogram. You can investigate the bottom conditions and hardness, and detect fish.

Note

The echogram is only drawn for pings that have a successful bottom detection.

Since the *Bottom* echogram is referenced to the bottom, the **Start Range** value must be negative. If you wish to start your echogram from 10 meters above the bottom, you must set the **Start Range** to -10 m . The **Range** setting defines the vertical range from the start depth and down.

Tip

For closer investigation, you can use the Zoom information pane to enlarge the echoes from the bottom.



A This is the start depth of the echogram

In a *Bottom* echogram you will probably wish to start the echogram from a fixed distance above the bottom. To do this, you must set the **Start Range** to a negative value, for example -10 m . This negative value defines how many meters above the bottom the echogram will start.

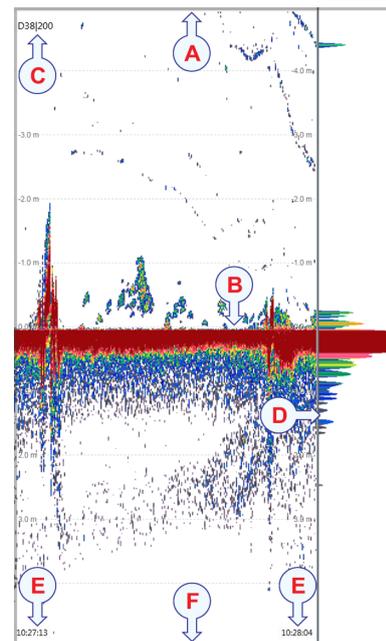
The **Range** value defines the vertical "height" of the echogram. To make sense, the value must be positive, and numerically larger than the chosen **Start Range**. If you have chosen to start your echogram from -10 m , the range must be larger than 10 meters, for example 20 meters.

B This is the bottom (seabed)

The bottom is shown with a strong contour. Since the echogram is referenced to the sea surface, the bottom will vary with the actual depth.

Different bottom conditions will have a visual effect on how the bottom echo is drawn. A hard bottom (rock) will give you a stronger echo - and thus a darker colour - than a soft bottom (mud or silt).

The **Echogram** page in the **Echogram** dialog box allows you to make adjustments to the bottom contour. You can add a black bottom line, and a white line to make the bottom "stand out". You can use the hardness line to indicate how hard the bottom is.



C Transducer identification

This text identifies the transducer - and thus also the channel - used to create the echogram. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

D This is the scope view

The *Scope* view is used to indicate how strong each echo is. The colour and the length of each line reflects the received echo amplitude.

E These are the labels

Small labels are shown in the bottom left and right corners of the echogram. These labels can contain time or distance to identify the horizontal axis of the echogram. You can hide the labels from view.

- **None:** The labels are hidden
- **Auto:** The horizontal scale is set automatically
- **Time:** The horizontal scale is defined by time. The time shown in the bottom right corner of the echogram is then the current time (now).
- **Distance:** The horizontal scale is defined by distance. The distance shown in the bottom right corner of the echogram is then 0 nautical miles (starting point).

The label information can be changed using the **Label** options on the **Horizontal Axis** page in the **Echogram** dialog box.

F This is the lower end of the chosen depth range

This depth is normally a few meters below the bottom contour, depending on the chosen range. The total echogram range (A) to (F) is defined with the **Range** button on the **Main** menu.

Example

Start Range and Range in bottom related echogram

In a bottom echogram, set the **Start Range** value to -5 meters. This will make the echogram start from 5 meters above the bottom. Set **Range** to the 5 meters plus 10 = 15 meters. The echogram will now show the area from 5 meters above the depth, and down to 10 meters "below" the bottom. The bottom contour will appear as a flat line.

Related tasks

[Selecting which echogram type to use, page 98](#)

[Changing the size of the echogram views, page 102](#)

[Adjusting the TVG in the Echogram dialog box, page 107](#)

[Selecting the horizontal scale in the echograms, page 109](#)

[Adding scale labels to the echograms, page 110](#)

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

[Adding automatic trawl lines to the echogram presentation, page 115](#)

[Adding manual trawl lines to the echogram presentation, page 116](#)

Pelagic echogram description

The *Pelagic* echogram shows you a selected part of the water column. The echoes start from any start depth below the sea surface, which is used as depth reference. The bottom contour shall not be visible in the echogram. You can select the start range (the depth from which the echogram starts) and the vertical range (the vertical "length" of the echogram) by means of the **Start Range** and **Range** settings. Both the **Range** and the **Start Range** functions are located on the **Main** menu.

How to open

To activate *Pelagic* echogram, click in the chosen view to make it "active". Select **Echogram** on the **Active** menu. Select the **Echogram** tab to open the page. On the **Echogram** page, set **Echogram type** to *Pelagic*.



Description

A *Pelagic* echogram is mainly used when you wish to look at the water column starting from any distance below the sea surface down towards the bottom, but without seeing the bottom contour. To do this you must set up the **Start Range** to the preferred upper depth. The **Range** depth must then be chosen to make the echogram stop somewhere *over* the bottom contour. This gives you good opportunity to study the echoes from the water column.

Pelagic echograms are useful when you work in deeper waters. The reduced range and the fact that you do not need to wait for the bottom echo means that the ES80's ping rate is increased. The software algorithms in the ES80 are designed to work without the bottom detection reference.

In a *Pelagic* echogram the calculations disregard any bottom detection. All calculations are based on the entire echogram shown in the view. If the bottom echo is present in the echogram, the biomass calculation will be wrong.

Tip

For closer investigation, you can use the Zoom information pane to enlarge echoes from the water column.



A This is the start depth of the echogram

In a *Pelagic* echogram you may wish to start the echogram from a certain distance below the surface, and will then set the **Start Range** to a relatively large numerical value.

B Echoes

These are echoes from fish or other objects in the water column.

C Transducer identification

This text identifies the transducer - and thus also the channel - used to create the echogram. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

D This is the scope view

The *Scope* view is used to indicate how strong each echo is. The colour and the length of each line reflects the received echo amplitude.

E These are the labels

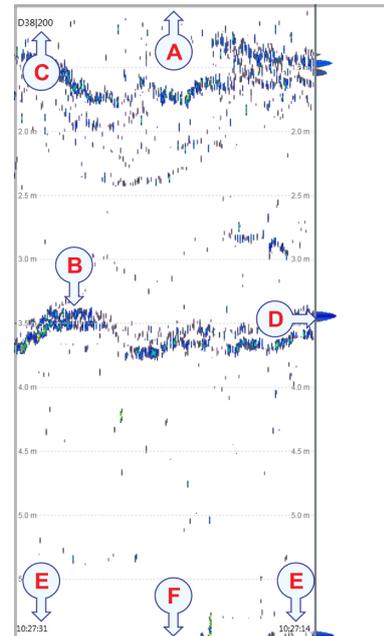
Small labels are shown in the bottom left and right corners of the echogram. These labels can contain time or distance to identify the horizontal axis of the echogram. You can hide the labels from view.

- **None:** The labels are hidden
- **Auto:** The horizontal scale is set automatically
- **Time:** The horizontal scale is defined by time. The time shown in the bottom right corner of the echogram is then the current time (now).
- **Distance:** The horizontal scale is defined by distance. The distance shown in the bottom right corner of the echogram is then 0 nautical miles (starting point).

The label information can be changed using the **Label** options on the **Horizontal Axis** page in the **Echogram** dialog box.

F This is the lower end of the chosen depth range

The **Range** value defines the vertical "height" of the echogram. In order to hide the bottom contour, this numerical value must be chosen with care. Subtract the start range value from the actual depth. This gives you the maximum range value.



Example

Start Range in a pelagic echogram

In a pelagic echogram, set the **Start Range** value to 20 meters. This will make the echogram start from 20 meters below the sea surface (provided that the transducer offset has been defined). Set **Range** to 40 meters. The echogram will now show the area from 20 meters below the sea surface, and down to 60 meters below the transducer. Provided that the depth is larger than 60 meters, the bottom contour is not shown.

Related tasks

[Selecting which echogram type to use, page 98](#)

[Changing the size of the echogram views, page 102](#)

[Adjusting the TVG in the Echogram dialog box, page 107](#)

[Selecting the horizontal scale in the echograms, page 109](#)

[Adding scale labels to the echograms, page 110](#)

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

[Adding automatic trawl lines to the echogram presentation, page 115](#)

[Adding manual trawl lines to the echogram presentation, page 116](#)

Trawl echogram description

The *Trawl* echogram covers the vertical opening of the trawl with reference to the depth of the headrope. In addition to the trawl opening, the echogram covers a certain range over and under the trawl opening. You can select the start range (the depth from which the echogram starts) and the vertical range (the vertical "length" of the echogram) by means of the **Start Range** and **Range** settings. Both the **Range** and the **Start Range** functions are located on the **Main** menu.

How to open

To activate *Trawl* echogram, click in the chosen view to make it "active". Select **Echogram** on the **Active** menu. Select the **Echogram** tab to open the page. On the **Echogram** page, set **Echogram type** to *Trawl*.



Description

Trawl sensor systems (such as Simrad PI, PX and ITI) communicate headrope depth, and/or the distance from the headrope to the footrope (trawl opening), to the ES80 at regular intervals. The information can be used to draw the upper and/or lower trawl lines in the ES80 echogram. If another trawl or catch monitoring system is used, and this system does not provide the trawl opening and/or trawl distance automatically, the values must be entered manually.

This information is required for the trawl echogram to be generated. Without the depth of the headrope, the echogram would appear like a standard pelagic echogram controlled by the **Range** and **Start Range** settings.

Note

The Trawl echogram is only drawn when trawl position information is available.

The distance from the headrope to the footrope (trawl opening) can be manually set on the **Trawl** page. This is useful for trawl sensor systems that do not measure the trawl opening, or when the measured distance is unreliable. You can also provide the distance from the vessel to the trawl opening. The depth of the headrope must however be imported from the catch monitoring system. The **Trawl** page is located in the **Installation** dialog box.

The biomass calculations in a *Trawl* echogram are not restricted by the bottom detection. This means that the bottom echo will be included in the calculations if it appears within the chosen range.

Tip

For closer investigation, you can use the Zoom information pane to enlarge echoes from the water column.



A This is the start depth of the echogram

In a *Trawl* echogram you may wish to start the echogram from a certain distance below the surface, and will then set the **Start Range** to a relatively large numerical value. In this example, the start depth is 0 meters.

B Vertical Ticks

These short vertical marker lines are used to identify elapsed time or distance. You can switch these vertical ticks on or off on the **Lines** page in the **Echogram** dialog box. The **Echogram** dialog box is located on the **Active** menu.

C Transducer identification

This text identifies the transducer - and thus also the channel - used to create the echogram. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

D Scale Lines

When enabled, equidistant horizontal scale lines are drawn inside the echogram in the current foreground colour; black during day and white during night. You can switch the scale lines on or off on the **Lines** page in the **Echogram** dialog box. The **Echogram** dialog box is located on the **Active** menu.

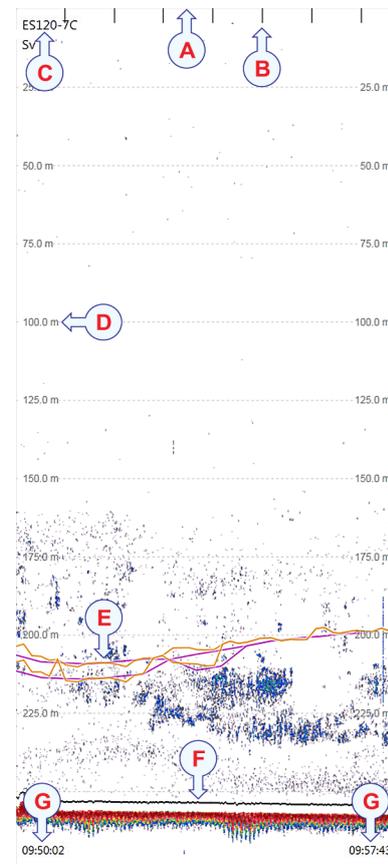
E Trawl lines

Trawl sensor systems (such as Simrad PI, PX and ITI) communicate headrope depth, and/or the distance from the headrope to the footrope (trawl opening), to the ES80 at regular intervals. The information can be used to draw the upper and/or lower trawl lines in the ES80 echogram. You can switch the trawl lines on or off on the **Lines** page in the **Echogram** dialog box. The **Echogram** dialog box is located on the **Active** menu.

F This is the bottom (seabed)

The bottom is shown with a strong contour. Since the echogram is referenced to the sea surface, the bottom will vary with the actual depth. Different bottom conditions will have a visual effect on how the bottom echo is drawn. A hard bottom (rock) will give you a stronger echo - and thus a darker colour - than a soft bottom (mud or silt).

The **Echogram** page in the **Echogram** dialog box allows you to make adjustments to the bottom contour. You can add a black bottom line, and a white line to make the bottom "stand out". You can use the hardness line to indicate how hard the bottom is.



G These are the labels

Small labels are shown in the bottom left and right corners of the echogram. These labels can contain time or distance to identify the horizontal axis of the echogram. You can hide the labels from view.

- **None:** The labels are hidden
- **Auto:** The horizontal scale is set automatically
- **Time:** The horizontal scale is defined by time. The time shown in the bottom right corner of the echogram is then the current time (now).
- **Distance:** The horizontal scale is defined by distance. The distance shown in the bottom right corner of the echogram is then 0 nautical miles (starting point).

The label information can be changed using the **Label** options on the **Horizontal Axis** page in the **Echogram** dialog box.

Related tasks

[Selecting which echogram type to use, page 98](#)

[Changing the size of the echogram views, page 102](#)

[Adjusting the TVG in the Echogram dialog box, page 107](#)

[Selecting the horizontal scale in the echograms, page 109](#)

[Adding scale labels to the echograms, page 110](#)

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

[Adding automatic trawl lines to the echogram presentation, page 115](#)

[Adding manual trawl lines to the echogram presentation, page 116](#)

Echogram lines and markers

Topics

[Annotation markers description, page 254](#)

[Biomass Line description, page 255](#)

[Bottom Line description, page 256](#)

[Hardness Line description, page 257](#)

[Label markers description, page 259](#)

[Range Other Line description, page 260](#)

[Scale Lines description, page 261](#)

[Trawl Line description, page 262](#)

[Variable Depth Line description, page 263](#)

[Vertical Tick description, page 264](#)

[White Line description, page 265](#)

Annotation markers description

Annotation markers may be added to the echogram to identify special echoes or special events.

How to open

To activate the *Annotation* markers, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Annotation* markers you wish to see.

Description

When you study an echogram, it is often useful to add personal comments to it. Comments can be used to identify specific events such as specific echoes, unusual bottom conditions, or simply for keeping track of time or distance. Use the **Annotations** page to type comments and insert annotations into the echograms. Annotations can be typed in manually, set up for automatic generation, or imported from an external device. The **Annotations** page is located in the **Installation** dialog box.

When you save raw data, the annotations you have defined are stored as annotation datagrams.

The **Lines** page in the **Echogram** dialog box allows you to enable or disable annotations in the echograms. Select *Text* or *Line* to allow *Annotation* markers to be shown in the echogram. If you select *Line*, each text annotation is followed by a vertical line for improved visibility.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

Biomass Line description

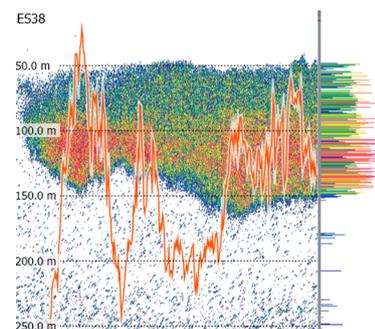
The *Biomass Line* allows you to monitor the current biomass in the echogram. This function writes an extra thick and brightly coloured curve on the echogram.

How to open

To activate the *Biomass Line*, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Biomass Line* function.



Description

The *Biomass Line* can be added to your echogram to retrieve additional information. This function writes an extra thick and brightly coloured curve on the echogram. The *Biomass Line* shows you the measured biomass for each individual ping. This is a visual enhancement. It does not have any effect on the ES80 performance.

Note

If you have other echo sounders or sonars running asynchronous with the ES80, these systems may cause interference. The ES80 may detect and measure the transmit pulses from other hydroacoustic systems, and these pulses have an effect on the biomass calculations. To avoid all interference, a full synchronization of the various acoustic instruments is required. If your own vessel produces excessive noise this will also be taken into the biomass calculations and give you inaccurate data.

The ES80 records all the targets from the smallest plankton to the largest whale. The biomass value is an indicator to how much fish you currently have in the beam. Every single fish will emit an echo, and the sum of all these registered echoes are presented as a number. Smaller organisms such as plankton will also emit echoes, but these are so weak that they will hardly influence on the total biomass.

The biomass value provides you with information about the fish abundance, and as such it may help you to decide if it pays off to start fishing. However, you must consider if the biomass value is a result of large amounts of plankton or bait, or if you have "real fish" below the keel. The biomass value is relative, and after some use your experience will be a valuable factor when the decision is made.

You can change the scale of the curve to fit the vertical space available on the echogram. To enable the *Biomass Line* function and change the scale, use the **Lines** page in the **Echogram** dialog box. The **Echogram** dialog box is located on the **Active** menu.

Tip

You can also measure the biomass in the Biomass information pane. The Biomass information pane displays an index of the biomass in the current echogram view. The biomass index is the same as the NASC (Nautical area scattering strength) with unit m^2/nmi^2 .

The changes made with the **Calculation Interval** settings have no effect on the *Biomass Line*.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

[Investigating the biomass, page 125](#)

[Changing the calculation parameters for the Biomass information pane, page 126](#)

Related information panes

[Biomass information pane description, page 227](#)

Bottom Line description

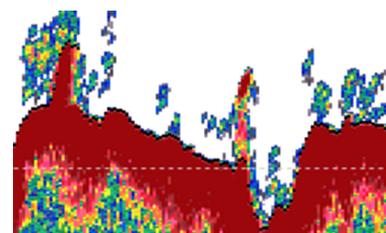
The *Bottom Line* can be added to your echogram to enhance the visual bottom detection.

How to open

To activate the *Bottom Line*, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Bottom Line* function.



Description

The *Bottom Line* appears as thin line that follows the bottom contour. The line is drawn in the current foreground colour. You can use the *White Line* and the *Bottom Line* functions simultaneously. The *Bottom Line* can not be used together with the *Hardness Line*.

This is a visual enhancement. It does not have any effect on the ES80 performance.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

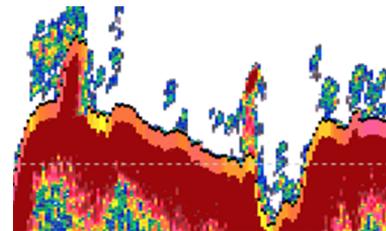
[Adding a variable depth line to the echogram, page 114](#)

Hardness Line description

The *Hardness Line* is a thick colour coded line that shows you the bottom reflectivity - that is how "hard" the bottom is.

How to open

To activate the *Hardness Line*, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Hardness Line* function.

Description

The *Hardness Line* can be added to your echogram to retrieve additional information. It appears as thick colour coded line that follows the bottom contour. This line does not remove information, it simply "pushes" the echo information further down in order to show you the bottom reflectivity. You can use the *Hardness Line* and the *Bottom Line* functions simultaneously, but each can not be used together with the *White Line*.

Note

This is an optional function. In order to use this functionality, a dedicated software license is required. Contact you local dealer for more information.

When you study the bottom hardness, you can learn more about the bottom. Certain species are known to prefer specific bottom conditions. With more knowledge, you are better qualified to estimate the possible catch.

Tip

If you wish to keep an eye on the bottom hardness, you can also use the Bottom Hardness information pane. The colours on the left side of the scale indicate a soft bottom, while the colours on the right hand side indicate a harder bottom.

The information pane shows you the current reflectivity measured in dB. The bottom hardness shown in the information pane was detected by the latest ping in the selected view.



Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

[Investigating the bottom characteristics, page 132](#)

Related information panes

[Bottom Hardness information pane description, page 231](#)

Label markers description

Small labels are shown in the bottom left and right corners of the echogram. These labels can contain time or distance to identify the horizontal axis of the echogram. You can hide the labels from view.

How to open

To activate the *Label* markers, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Horizontal Axis** tab to open the page. On the **Horizontal Axis** page, enable the *Label* marker you wish to see.

Description

The following label options are available.

- **None:** The labels are hidden
- **Auto:** The horizontal scale is set automatically
- **Time:** The horizontal scale is defined by time. The time shown in the bottom right corner of the echogram is then the current time (now).
- **Distance:** The horizontal scale is defined by distance. The distance shown in the bottom right corner of the echogram is then 0 nautical miles (starting point).

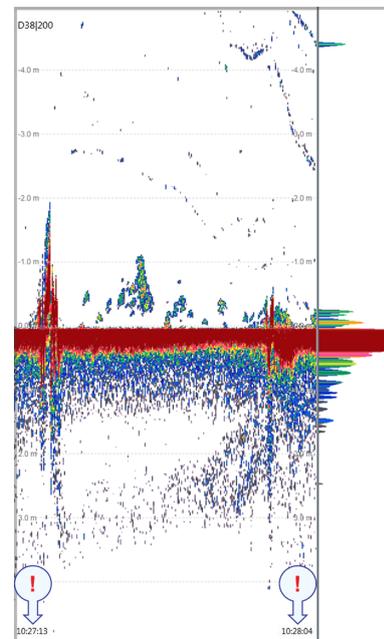
The label information can be changed using the **Label** options on the **Horizontal Axis** page in the **Echogram** dialog box.

This is a visual enhancement. It does not have any effect on the ES80 performance.

Related tasks

[Selecting the horizontal scale in the echograms, page 109](#)

[Adding scale labels to the echograms, page 110](#)

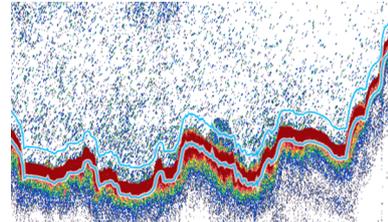


Range Other Line description

Whenever you work with surface and bottom echograms simultaneously, you may find it useful to have an overview of the range settings. The *Range Other Line* function places range indicators for the *Bottom* echogram into your *Surface* echogram.

How to open

To activate the *Range Other Line* function, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Range Other Line* function.

Description

This function is used when you set up your ES80 with both a surface related and bottom related echogram shown simultaneously. When enabled, two horizontal lines in the surface echogram indicate the range selected in the bottom echogram.

This is a visual enhancement. It does not have any effect on the ES80 performance.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

Scale Lines description

In order to estimate the depth of the bottom and/or your echoes, you can enable the *Scale Line* function. These are a chosen number of horizontal lines placed in your echogram view. Each line represents a certain depth.

How to open

To activate the *Scale Lines*, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Scale Lines* function.

Description

When enabled, equidistant horizontal scale lines are drawn inside the echogram in the current foreground colour; black during day and white during night. A maximum of 10 scale lines can be selected. No scale lines are drawn when the scale line count is set to 0 (zero).

This is a visual enhancement. It does not have any effect on the ES80 performance.

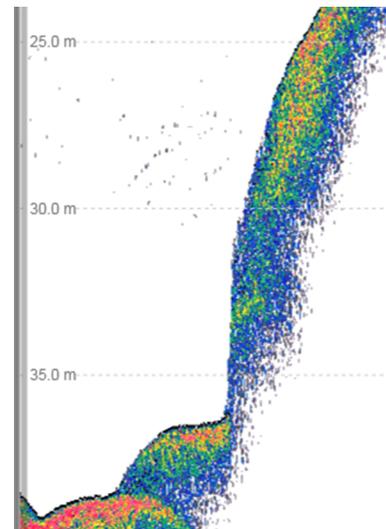
Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)



Trawl Line description

The *Trawl Line* function is used to show you where the headrope and/or footrope of your trawl are located.

How to open

To activate the *Trawl Line* function, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Trawl Line* function.

Description

Trawl sensor systems (such as Simrad PI, PX and ITI) communicate headrope depth, and/or the distance from the headrope to the footrope (trawl opening), to the ES80 at regular intervals. The information can be used to draw the upper and/or lower trawl lines in the ES80 echogram. If another trawl or catch monitoring system is used, and this system does not provide the trawl opening and/or trawl distance automatically, the values must be entered manually.

If you have a compatible catch monitoring system in use, you can use the *Trawl Line* function to monitor the depth of the applicable sensors.

The distance from the headrope to the footrope (trawl opening) can be manually set on the **Trawl** page. This is useful for trawl sensor systems that do not measure the trawl opening, or when the measured distance is unreliable. You can also provide the distance from the vessel to the trawl opening. The depth of the headrope must however be imported from the catch monitoring system. The **Trawl** page is located in the **Installation** dialog box.

This is a visual enhancement. It does not have any effect on the ES80 performance.

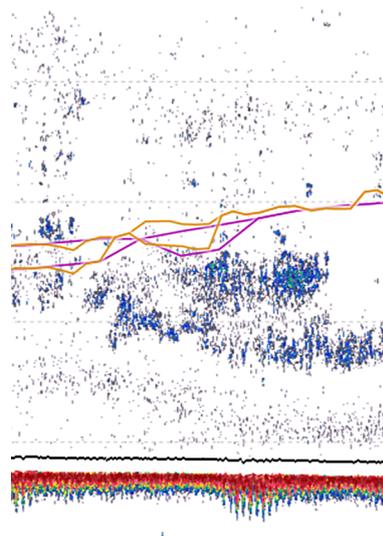
Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)



Variable Depth Line description

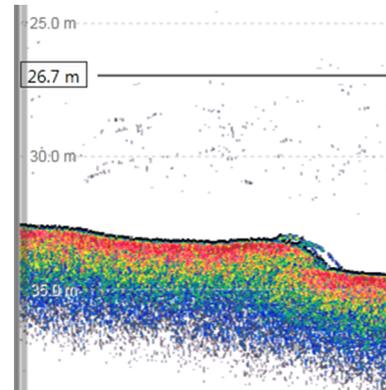
The *Variable Depth Line* is an extra horizontal line that you can place anywhere in the echogram. It provides a measurement of depth.

How to open

To activate the *Variable Depth Line*, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Variable Depth Line* function.



Description

The *Variable Depth Line* can be added to your echogram to measure the depth. A horizontal line with a depth readout is placed in the echogram. To change the depth, select the line, keep the mouse button depressed, and move it up and down to place it at the requested position. This function is typically used to measure the water depth, the depth of a school, or even single fish.

To remove the *Variable Depth Line*, simply "switch it off".

This is a visual enhancement. It does not have any effect on the ES80 performance.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

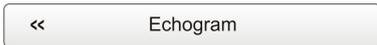
[Adding a variable depth line to the echogram, page 114](#)

Vertical Tick description

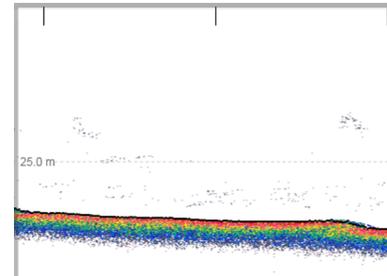
In order to create a horizontal scale, you can add short *Vertical Tick* marker lines to your echogram. These short vertical marker lines are used to identify elapsed time or distance.

How to open

To activate the *Vertical Tick* function, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *Vertical Tick* markers by selecting the type of markers you wish to see.



Description

This function places *Vertical Tick* markers on the top of the echogram. These short vertical marker lines are used to identify elapsed time or distance.

- **None:** No vertical markers are shown.
- **Time:** A short vertical line in the upper part of the echogram once every specified number of minutes.
- **Distance:** A short vertical line in the upper part of the echogram once every specified number of 1/10 nautical miles.

This is a visual enhancement. It does not have any effect on the ES80 performance.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

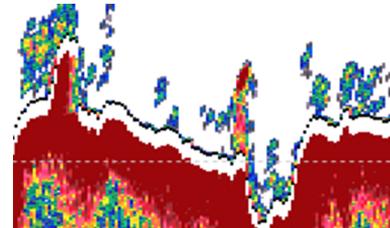
[Adding a variable depth line to the echogram, page 114](#)

White Line description

The *White Line* can be added to your echogram to enhance the visual bottom detection. It appears as thick line in the current background colour (normally white) that follows the bottom contour.

How to open

To activate the *White Line*, click in the echogram view to make it "active".



Select **Echogram** on the **Active** menu. Select the **Lines** tab to open the page. On the **Lines** page, enable the *White Line* function.

Description

The *White Line* will not remove information, it will simply "push" the echo information further down in order to make the bottom easier to see. You can use the *White Line* and the *Bottom Line* functions simultaneously.

This is a visual enhancement. It does not have any effect on the ES80 performance.

Related tasks

[Enhancing the bottom contour in the echograms, page 111](#)

[Adding vertical marker lines to the echogram, page 112](#)

[Adding horizontal depth lines to the echograms, page 113](#)

[Adding a variable depth line to the echogram, page 114](#)

The ES80 menu system

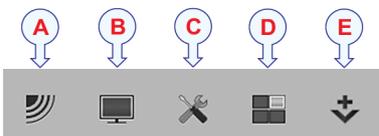
The menu system is by default located on the right hand side of the ES80 presentation. The menus are organized in a tree structure with a main menu, a set of secondary menus, and several menu buttons. Some of the menu buttons open dialog boxes or sub-menus to offer additional choices.

Description

To change operational settings in the ES80, observe the menu system and its tree structure. It offers a main menu, a set of secondary menus, and several menu buttons. Each button shows the purpose of the button. Some of them also display the current setting.

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. Unless you hide the entire menu system from view, the **Main** menu is visible at all times, even if you close the secondary menu.

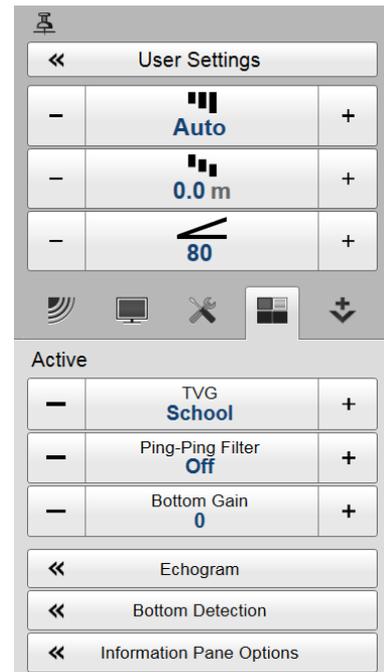
Below the **Main** menu, a set of dedicated icons are used to open the secondary menus.



- A Operation menu:** The **Operation** menu offers the most common functions for basic ES80 operation.
- B Display menu:** The **Display** menu provides basic functions related to the screen behaviour and presentation of ES80 data.
- C Setup menu:** The **Setup** menu provides basic functions related to the ES80 installation parameters and its communication with peripheral systems.
- D Active menu:** The **Active** menu offers parameters related to current views and data presentations shown by the ES80.
- E Extras menu:** The **Extras** menu is - in spite of its name and location - not a menu at all. This "menu" opens a small view to monitor key operational parameters.

Tip

Unless you need to make frequent changes to the operational parameters, you may wish to hide the menu from the ES80 presentation. This will give you more space to present echo data. To hide the menu, select **Menu** on the top bar. To retrieve it, select **Menu** one more time. When the menu is hidden, it is temporarily shown on the left or right hand side of the ES80 presentation if you move the cursor to that position.



Bottom bar description

The bottom bar is located at the bottom of the ES80 presentation, and stretches from the far left to the far right side. The tabs on the bottom bar allows you to choose channel and presentation mode. A dedicated tab provides you with a special view to see the screen captures you have made. The bottom bar also shows you the current colour scale, as well as time and date.

How to open

The bottom bar is available all the time.



Description

The number of tabs available on the bottom bar depends on how many channels your ES80 has. Two tab "groups" allow you to select channels and views. This example shows the ES80 with two channels. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

A Presentation modes

Three presentation modes are available when you wish to see all the echogram channels simultaneously in the ES80 presentation. The three tabs will arrange the echogram views vertically, horizontally, or in rectangular rows and columns.

The **Vertical** and **Horizontal** tabs are only shown if you have two or more channels in use on your ES80. The **Square** tab is only shown if you have three or more channels.

By default, the echogram views are automatically arranged in the ES80 presentation. You can click and drag the border on each individual view to change its size. The size of the other views are reduced accordingly.

B Selecting individual echogram channels

Each channel is shown with a dedicated tab. The channel is identified with the name of the transducer in use. This name is the custom name you provided when you installed the transducer. Select a specific transducer tab to see only that channel in the ES80 presentation. In this context, the phrase *channel* is used as a common term to identify the combination of transceiver, transducer and operating frequency.

C Screen Capture

When you use the ES80 actively, you may need to make a screen capture to save an instantaneous image of the current presentation. The screen captures you make are saved on the hard disk in the Processor Unit on JPG format.

The **Screen Captures** tab on the bottom bar opens a dedicated viewer that allows you to open these images. Through the viewer you can also open the file folder on the Processor Unit hard disk. This allows you to copy, rename or delete the image files.

D Colour Scale

The colour scale on the bottom bar reflects the colour choice you have made for the echo presentations. The colour scale is shown on the bottom bar even when the *Colour Scale* information pane is closed. To change the colour scale, use the **Colour Setup** dialog box. The **Colour Setup** dialog box is located on the **Display** menu.

E Date and time

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

If you have many channels with long names on your ES80, a small icon appears on the bottom bar. You can use this icon to scroll the bottom bar sideways.

Tip

*In a large system with many transceivers and transducers in simultaneous use, it can be useful to hide channels temporarily from view. When two or more echograms are shown, you can use the **Layout** dialog box to decide in which order - from top to bottom or left to right - you wish to see the echogram channels. The **Layout** dialog box is located on the **Display** menu.*

Related tasks

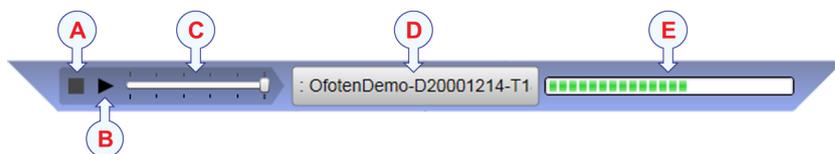
[Selecting echogram views on the bottom bar, page 100](#)

Replay bar description

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

How to open

The replay bar is opened automatically when **Operation** is set to *Replay*.



Description

All playback is controlled by the replay bar. During data playback, the replay offers visual monitoring of the speed and progress. You can also edit the list of replay files that are used.

A Stop

Select this button to stop the playback.

B Play/Pause

Select this button to start the playback, or to pause it.

C Replay speed

Select this slider and move it sideways to adjust the replay speed.

D Replay file

This button shows which file you are currently playing. Select the button to open the **Replay File** dialog box.

E Progress

This bar shows you the replay progress of the current file. If you have chosen to loop the replay file(s), the green indicator will start from left every time the start of the file appears.

Tip

*To select **Replay** operational mode, use the **Operation** function. The **Operation** function is located on the **Operation** menu. If you wish your playback file to run continuously, select **Loop** in the **Replay File** dialog box.*

Related tasks

[Defining the file and folder settings for data recording, page 89](#)

[Recording echo data, page 90](#)

[Selecting *Replay* operational mode, page 92](#)

[Choosing which echo data file\(s\) to replay, page 93](#)

[Accessing the echo data files to delete, move or copy them, page 94](#)

Related topics

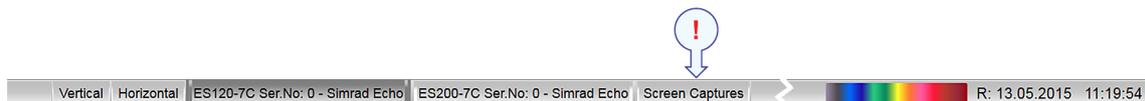
[Record indicator description, page 211](#)

Screen capture browser description

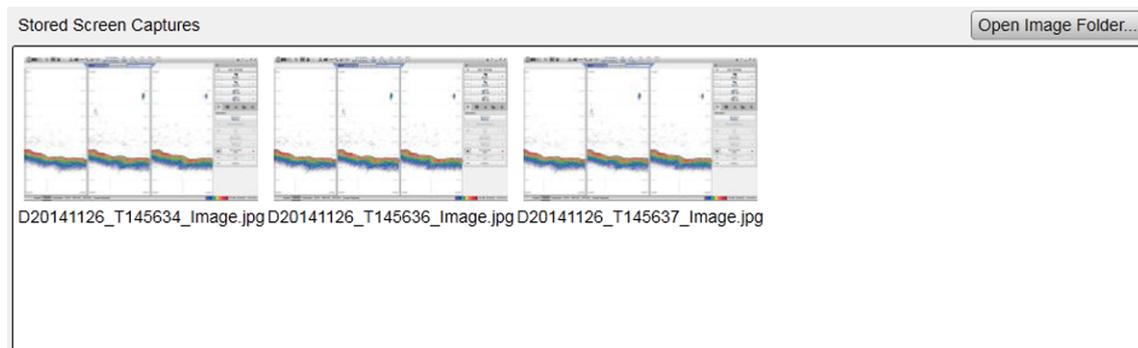
The ES80 provides a built-in screen capture function to create snapshots of the echogram presentation. The ES80 also provides a dedicated browser to view the saved images.

How to open

To open the screen capture browser, select the **Screen Captures** tab on the bottom bar.



To close the browser, click any of the other tabs on the bottom bar.



Description

The screen capture browser simply presents a miniature version of each screen capture that you have made. Each file is provided in standard JPG format, which can be opened by most commercial bitmap editors. The file names are created automatically using the date and time when you used the **Screen Capture** button.

Double-click a miniature image to open it. Once opened, select **Return to Browser** to return to the browser view.

To find the image files, select **Open Image Folder** in the image browser. By means of standard operating system functionality you can move, copy or delete each image file.

To make a screen capture, select **Screen Capture** on the top bar. Every time you do this, a new image file is created.



Menu system

Topics

[About the menus and menu buttons, page 271](#)

[Using the “smart” menu buttons, page 272](#)

[Main menu, page 274](#)

[Operation menu, page 275](#)

[Display menu, page 276](#)

[Setup menu, page 278](#)

[Active menu, page 282](#)

[Extras menu, page 284](#)

About the menus and menu buttons

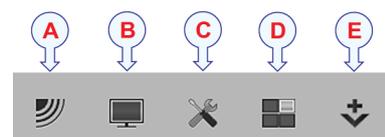
To select operational parameters on the ES80, use the menu system. The menus are organized in a tree structure with a main menu, a set of secondary menus, and several menu buttons. Some of the menu buttons open dialog boxes or sub-menus to offer additional choices. The menu system is by default located on the right hand side of the ES80 presentation.

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. Unless you hide the entire menu system from view, the **Main** menu is visible at all times, even if you close the secondary menus.

Below the **Main** menu, a set of dedicated icons are used to open the secondary menus.

A **Operation menu:** The **Operation** menu offers the most common functions for basic ES80 operation.

B **Display menu:** The **Display** menu provides basic functions related to the screen behaviour and presentation of ES80 data.



- C Setup menu:** The **Setup** menu provides basic functions related to the ES80 installation parameters and its communication with peripheral systems.
- D Active menu:** The **Active** menu offers parameters related to current views and data presentations shown by the ES80.
- E Extras menu:** The **Extras** menu is - in spite of its name and location - not a menu at all. This "menu" opens a small view to monitor key operational parameters.

Tip

*Unless you need to make frequent changes to the operational parameters, you may wish to hide the menu from the ES80 presentation. This will give you more space to present echo data. To hide the menu, select **Menu** on the top bar. To retrieve it, select **Menu** one more time. When the menu is hidden, it is temporarily shown on the left or right hand side of the ES80 presentation if you move the cursor to that position.*



Using the "smart" menu buttons

Each menu provided by the ES80 contains several menu buttons. Each button shows the purpose of the button. Some of them also display the current setting.

Depending on the properties of each individual button, several methods can be used to change settings.

- You can increase or decrease parameter values by selecting [+] or [-] on the button.
- You can change parameter values by selecting the button, holding the mouse depressed, and then move the cursor sideways.
- You can change parameter values by means of the scroll wheel on the mouse or trackball.
- You can type settings using a computer keyboard (if you have one connected to your Processor Unit).
- You can select settings from a small menu under the button.
- You can open a dedicated dialog box.

Selecting a numerical parameter using the +/- buttons



- 1 Move the cursor to either side of the button.
- 2 Observe that the background colour changes.
 - a Click on the **left** side of the button to decrease the numerical value.
 - b Click on the **right** side of the button to increase the numerical value.

Selecting a numerical parameter by moving the cursor horizontally



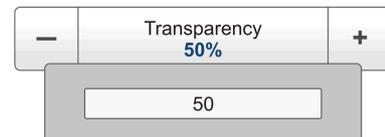
- 1 Place the cursor on the middle of the button.
- 2 Click and hold the **left** mouse button depressed.
- 3 Move the cursor horizontally: *left* to decrease the numerical value, or *right* to increase it.
- 4 Release the mouse button when the requested value is shown.

Selecting a numerical parameter using the scroll wheel



- 1 Place the cursor on the middle of the button.
- 2 Spin the scroll wheel in either direction to increase or decrease the numerical value.
- 3 Release the scroll wheel when the requested value is shown.

Selecting a numerical parameter using the keyboard



- 1 Click the middle section of the button to open a text field.
- 2 Type the numerical value into the text field.

If the numerical value exceeds the permitted range for the parameter, the frame in the text field will be red. The value is not accepted, and you must type a value within the accepted range.

- 3 Press **Enter** on the keyboard.

Selecting a parameter using a menu



- 1 Click the middle section of the button to open a menu.
- 2 Select the requested value, command, option or button.

The chosen value is applied, and the menu is automatically closed

- 3 Whenever applicable, you can also access the menu by clicking the left and right side of the button. This method will not show you the menu choices.
 - Click on the **left** side of the button to select a 'lower' menu choice.
 - Click on the **right** side of the button to select a 'higher' menu choice.

Selecting parameters using a dialog box



Click anywhere on the button to open a separate dialog box. When the necessary changes have been made:

- Select **OK** to save the chosen settings and close the dialog box.
- Select **Apply** to save your settings without closing the dialog box.
- Select **Cancel** to close the dialog box without making any changes.

Main menu

The **Main** menu is located at the top of the menu structure. It offers the most common functions for efficient use of the ES80. Unless you hide the entire menu system from view, the **Main** menu is visible at all times, even if you close the secondary menus.

How to open

By default, the **Main** menu is open, and positioned on the right hand side of the ES80 presentation.

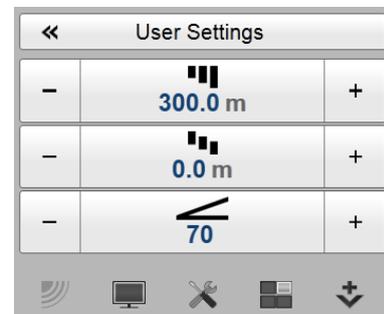


On the top bar, use the **Menu** button to hide or show the menu. When the menu system is hidden, it appears temporarily on the left or right hand side of the screen if you move the cursor to that position.

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 maximum theoretical vertical depth covered by the ES80. The range is defined from a selected start range, and down to a value beneath the current bottom depth. The range value shown and selected is by default only applied to your currently selected echogram.

- **Start Range**

The **Start Range** function allows you to specify the start depth of the echogram. The value defines from which depth in the water column the presentation shall start. The depth value shown and selected is by default only applied to the currently selected echogram.

- **Gain**

The purpose of the **Gain** function is to adjust the echo level in the ES80 presentations. It controls how much amplification that is applied to the received echoes. By default, the gain setting is only applied to the currently selected echogram (identified with a thick border).

Tip

For detailed information about every function, button and dialog box, refer to the ES80 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 system

If you do not need to use the menu system, you can hide it. This allows more space for the ES80 presentation.



On the top bar, use the **Menu** button to hide or show the menu. When the menu system is hidden, it appears temporarily on the left or right hand side of the screen if you move the cursor to that position.

Operation menu

The **Operation** menu offers the most common functions for basic ES80 operation.

How to open

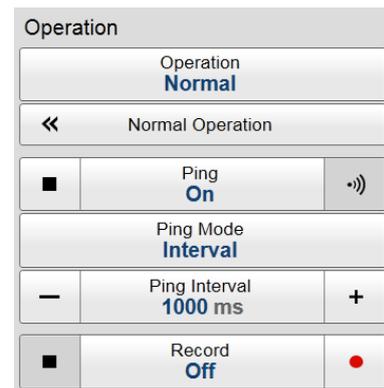
Select the **Operation** icon.



The icon is located under the **Main** menu. Select the icon one more time to close the menu.

Note

*Immediately after you have powered up the ES80, the **Operation** menu icon is flashing. It is flashing to indicate that even if the ES80 is powered up, "pinging" is disabled. **Ping** is set to **Off** to prevent transmission. This is for safety reasons.*



Description

- **Operation**

The **Operation** function controls the operational mode of the ES80. You can set it to *Normal*, *Replay* or *Inactive*.

- **Normal Operation**

The purpose of the **Normal Operation** dialog box is to provide you with an overview of the current transceiver parameters. It also allows you to change these parameters to match your current operational requirements.

- **Ping**

The purpose of the **Ping** function is to enable or disable the ES80 transmissions into the water. Such transmissions are often referred to as "pinging".

- **Ping Mode**

The **Ping Mode** function is used to control how often the ES80 shall transmit its energy into the water. For scientific operations, choose *Interval*, and set the **Ping Interval** according to the survey requirements.

- **Ping Interval**

The **Ping Interval** function is used when **Ping Mode** is set to *Interval*. The **Ping Interval** function permits you to choose the time (in milliseconds) between each transmission ("ping").

- **Record**

The **Record** function allows you to record echo data. You can save to the Processor Unit hard disk, or onto an external disk. The data files can be played back on the ES80. You can keep the recorded files for future reference, or for training purposes.

Tip _____

For detailed information about every function, button and dialog box, refer to the ES80 Reference manual or the context sensitive on-line help.

Display menu

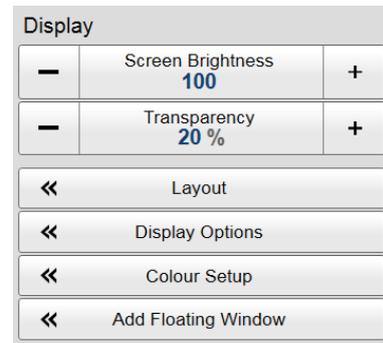
The **Display** menu provides basic functions related to the screen behaviour and presentation of ES80 data.

How to open

Select the **Display** icon.



The icon is located under the **Main** menu. Select the icon one more time to close the menu.



Description

- **Screen Brightness**

The intensity of the light given off by the ES80 presentation can be adjusted. You can use this function to increase or decrease the light from the screen to match the ambient light.

- **Transparency**

When you open an information pane, you will see that it is transparent. This transparency allows you to see the echogram data behind the pane, but it may also reduce the visibility of the information in it. The transparency can be adjusted.

- **Layout**

The ES80 can work with several channels simultaneously. It is possible to select which channels to see in the ES80 presentation. You can also position the echograms in relation to each other.

- **Display Options**

The top bar gives you fast access to key functionality and navigational information. It provides buttons to hide or show the menu, to monitor data recording, to open the **Messages** dialog box, and to open the context sensitive on-line help. Which navigational elements to see on the top bar is selected in the **Display Options** dialog box. It controls the location of the menu. You can also select which tooltips to appear when you move the cursor over the echograms.

- **Colour Setup**

The **Colour Setup** dialog box controls the presentation colours used by the ES80. This includes the palette ("skin"), the number of colours in use, and the colour scale.

- **Add Floating Window**

Modern computers can easily feed more than one display. The **Add Floating Window** dialog box makes it possible to grab a complete echogram presentation for a chosen channel, and place it in a separate window. This window can for example be on a second (or third) display connected to your Processor Unit.

Tip

For detailed information about every function, button and dialog box, refer to the ES80 Reference manual or the context sensitive on-line help.

Setup menu

The **Setup** menu provides basic functions related to the ES80 installation parameters and its communication with peripheral systems.

How to open

Select the **Setup** icon.



The icon is located under the **Main** menu. Select the icon one more time to close the menu.

Description

- **Environment**

Environmental parameters such as salinity, sound speed and water temperature all play an important part to present accurate echo data. Use the **Environment** parameters to define these values. Depending on the current sea and weather conditions, you may need to change these values frequently.

- **Manual Annotation**

Sometimes it can be useful to place a single written comment on the echogram. The **Manual Annotation** dialog box offers that function. Type a text string. Select **OK** in the dialog box to add the text to your echogram.

- **Fish Select**

The *Size Distribution* information pane shows a histogram of the echoes detected from single fishes. The calculations are based on the fact that different fish species have different echo strength. The echo strength also depends on the operational frequency you use. For various reasons, the fish size presented in the *Size Distribution* information pane may be inaccurate. The **Fish Select** dialog box allows you to select the fish species you expect to catch, and manually adjust the size distribution.

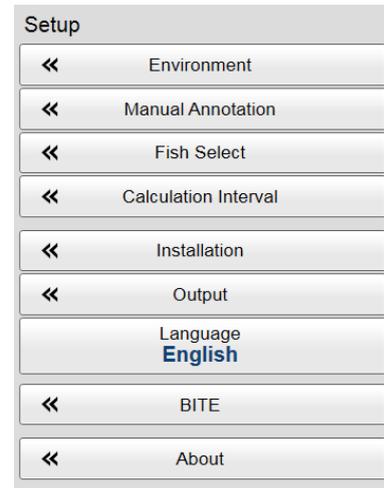
- **Calculation Interval**

The **Calculation Interval** settings define the parameters that are used to calculate the biomass and the size distribution. You can base the calculations on sailed distance, elapsed time, or a portion of the echogram view.

- **Installation**

Prior to use, the ES80 must be set up to communicate with the relevant peripherals. This includes the transducer(s). The **Installation** dialog box collects all relevant peripherals on individual pages, and allows you to set up the basic parameters related to installation and operation. In most cases, you only need to do this once.

The following pages are provided.



– **Transducer Installation**

The transducers you wish to use with the ES80 must be "installed" as a part of the software configuration. Which transducers to use depends on the number of transceivers in your system, and the licenses you have for these. Unless you replace a broken transducer, or add a new, you only need to do this once.

– **Transceiver**

The **Transceiver** pages are used to define the settings necessary to connect the Processor Unit to each transceiver. In turn, each transceiver is assigned one or more transducers. Two pages are used. The **Transceiver Installation** page shows you a list of the available transceivers, and allows you to make the connections to the Processor Unit, and to the transducers you have installed. The **Transceiver IP Address** page allows you to control the Internet Protocol (IP) Addresses used by the Processor Unit to communicate with the transceivers.

– **Sensor Installation**

For the ES80 to use and offer correct navigational information, one or more external sensors must be connected. Typical sensors are those that provide speed, heading and geographical position. The **Sensor Installation** page allows you to define which external sensors your ES80 shall import information from. You must also decide which datagram formats that shall be accepted. Once a sensor has been chosen, you must select the offset values that define the sensor's physical location relative to your vessel's coordinate system.

– **Sensor Configuration**

With several sensors connected to the ES80, many of them will provide the same datagrams. We cannot expect that the datagrams provide the same information. The **Sensor Configuration** page allows you to define a datagram priority, so that the information from the "most reliable" sensor is used by the ES80. You can also define manual values in case a sensor is unserviceable, or not installed.

– **I/O Setup**

In order to communicate with peripheral devices, the Processor Unit offers several serial and/or Ethernet (LAN) ports. The number of communication ports depends on how your Processor Unit is set up and configured. The **I/O Setup** settings allow you to define which information is imported by the Processor Unit. For each port, you can set up the communication parameters, and monitor the data flow.

– **Synchronization**

The purpose of the **Synchronization** parameters are to set up the ES80 to operate alone, or as a master or slave in a synchronized system. Synchronization is required in order to avoid interference if the ES80 is used simultaneously with other hydroacoustic instruments within the same frequency range.

– **Units**

The ES80 user interface presents many measurements. These measurements are for example related to depth, range or distance. The choices on the **Units** page allow you to control which units of measurements that are used.

– **Trawl**

When you use a trawl, the ES80 can draw the upper and lower trawl lines in the echogram. In order to this, the ES80 needs to know the relevant trawl parameters. If your trawl system is connected to the ES80, these parameters are automatically available. If the trawl system is not connected, the **Trawl** options allow you to define the parameters manually.

– **Annotations**

When you study an echogram, it is often useful to add personal comments to it. Comments can be used to identify specific events such as specific echoes, unusual bottom conditions, or simply for keeping track of time or distance. The **Annotations** choices allow you to type comments and annotations into the echograms. The comments are automatically saved when you enable raw data recording.

– **Software License**

The ES80 needs one or more software licenses to work. Each software license code "unlocks" one Wideband Transceiver (WBT) for operational use with a set of predefined properties. The **Software License** settings allow you to type a license code (text string) to unlock the ES80 functionality.

• **Output**

A key function of the ES80 is its ability to export data. The purpose of the **Output** dialog box is to collect all functionality related to ES80 data output in one easily accessible location.

The following pages are provided.

– **File Setup**

A useful function of the ES80 is its ability to record echo data. To retrieve the data files, you need to know where they are, and which file names that have been used. The purpose of the **File Setup** settings is to define the file and folder properties for the echo data files that you are recording. You can select the disk and folder for the files, you can define the maximum file size, and you can choose a prefix for the file names.

– **I/O Setup**

In order to communicate with peripheral devices, the Processor Unit offers several serial and/or Ethernet (LAN) ports. The number of communication ports depends on how your Processor Unit is set up and configured. The **I/O Setup** settings allow you to define which information is imported by the Processor Unit. For each port, you can set up the communication parameters, and monitor the data flow.

This page is located in both the **Output** and **Installation** dialog boxes.

– **Depth Output**

The ES80 can export depth information on a dedicated communication port (serial or Ethernet) The **Depth Output** page is used to set up the output parameters.

– **Relay Output**

The ES80 allows you to export the same sensor data that was originally imported. This can "reuse" the same information on other systems. The **Relay Output** page is used to set up and control this export functionality.

• **Language**

You may prefer to use the ES80 with a user interface in your own language. A selection of languages is provided. The **Language** function allows you to select the language to be used in the ES80 presentations, menus and dialog boxes.

• **BITE (Built-In Test Equipment)**

The ES80 is a computerized Wideband fish finding echo sounder. There are hardly any analogue circuitry, and the possibility of traditional troubleshooting is limited. In order to rectify this, a built-in software application is available to offer test and maintenance functionality. The **BITE (Built-In Test Equipment)** dialog box controls the test and diagnose program that checks the performance of the ES80.

• **About**

The ES80 program is released with a specific software version. The **About** dialog box displays the current version number. The version described in this Operator Manual is 1.2.x.

Tip _____

For detailed information about every function, button and dialog box, refer to the ES80 Reference manual or the context sensitive on-line help.

Active menu

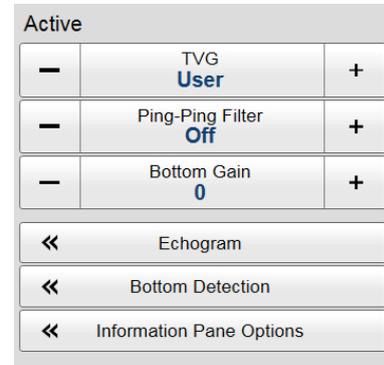
The **Active** menu offers parameters related to current views and data presentations shown by the ES80.

How to open

Select the **Active** icon.



The icon is located under the **Main** menu. Select the icon one more time to close the menu.



Description

- **TVG (Time Varied Gain)**

When an acoustic pulse is sent through the water, it will gradually lose its energy. The greater the distance between the transducer and the target(s), the greater the loss of energy. The **TVG** (Time Variable Gain) function is used to compensate the received echo data for the loss of acoustic energy due to geometric spread and absorption.

- **Ping-Ping Filter**

The **Ping-Ping Filter** analyses the historical information from previous consecutive pings in order to remove unwanted noise and interference from the ES80 presentation.

- **Bottom Gain**

The **Bottom Gain** setting controls the gain below the detected bottom depth. Different bottom conditions (rock, sand, mud etc) will result in different bottom echoes in the ES80 echograms. By changing the bottom gain, the presentation is changed depending on the bottom type.

- **Echogram**

The **Echogram** dialog box allows you to set up the parameters controlling the echogram presentation. Two pages control the horizontal lines and the echogram type with applied TVG (time variable gain). One page controls how fast the echogram travels horizontally across the presentation.

- **Bottom Detection**

Locating the bottom is important for the ES80. The purpose of the **Bottom Detection** parameters are to define the upper and lower depth limits most likely to be used during the ES80 operation. You can also modify the setting for **Bottom Backstep** to change the bottom detection relative to the bottom echo.

- **Information Pane Options**

The ES80 offers several *information panes* to provide additional and detailed data from the ES80 presentation. The information panes are opened and closed using the buttons on the top bar. Several of the information panes are fitted with a **Setup** button. Select **Setup** to open the **Information Pane Options** dialog box. The **Information Pane Options** dialog box allows you to change the operational parameters used to present the data in the information panes.

The following pages are provided.

- **Bottom Detection**

Locating the bottom is important for the ES80. The purpose of the **Bottom Detection** parameters are to define the upper and lower depth limits most likely to be used during the ES80 operation. You can also modify the setting for **Bottom Backstep** to change the bottom detection relative to the bottom echo.

- **Calculation Interval**

The **Calculation Interval** settings define the parameters that are used to calculate the biomass and the size distribution. You can base the calculations on sailed distance, elapsed time, or a portion of the echogram view.

The **Calculation Interval** parameters can be accessed from two places in the ES80 user interface.

- **Colour Scale**

The colour scales used by the ES80 are designed to reflect the how strong the echoes are. The echo strength is measured in decibels (dB). In the basic colour scale with 12 colours, each colour represents a 3 dB step. This means that the entire scale covers 36 dB. The dynamic range of the ES80 is much larger. The **Colour Scale** parameters allow you to change the lower limit of colour scale range to match the current echoes.

- **Size Distribution**

The *Size Distribution* information pane shows a histogram of the echoes detected from single fishes. The calculations are based on the fact that different fish species have different echo strength. The echo strength also depends on the operational frequency you use. The **Size Distribution** page allow you to define the properties for the histogram shown in the *Size Distribution* information pane.

Tip

For detailed information about every function, button and dialog box, refer to the ES80 Reference manual or the context sensitive on-line help.

Context sensitivity

The choices in this menu depend on which echogram in the ES80 presentation is currently "active".

To activate an echogram, click in it. The "active" echogram is shown with a thicker border frame.

Extras menu

The **Extras** menu is - in spite of its name and location - not a menu at all. This "menu" opens a small view to monitor key operational parameters.

How to open

Click the **Extras** icon. The icon is located under the **Main** menu. Select the icon one more time to close the menu.



Description

The **Extras** "menu" gives you an overview of the main operational parameters. The information is based on the currently "active" echogram.

Some of the information provided in the **Extras** menu reflects the setting in the **Normal Operation** dialog box.

Extras		
Transceiver Settings		
Mode:	Active	
Pulse Duration:	1.024	ms
Sample Interval:	0.085	ms
Frequency:	38000	Hz
Power:	2000	W
Slope:	0	%
Ping Rate:	0.5	pps
Noise Estimate:	-235.2	dB

Related tasks

[Selecting *Normal* operational mode, page 73](#)

[Selecting *Inactive* operational mode, page 74](#)

[Selecting *Replay* operational mode, page 75](#)

[Selecting *Passive* transceiver mode, page 150](#)

[Adjusting the output power, page 151](#)

[Adjusting the pulse duration, page 151](#)

[Defining the frequency sweep \(chirp\) within each transmission, page 152](#)

[Defining the pulse type for the ES80 transmissions, page 153](#)

Index

A

- about
 - annotation markers 254
 - bottom bar 49, 267
 - bottom echogram 246
 - bottom line 257
 - comments 10
 - constructive criticism 10
 - context sensitive on-line help 9
 - document downloads 9
 - echogram label markers 259
 - echogram views 50, 241
 - feedback 10
 - hardness line 257
 - information panes 46, 212
 - on-line help 67
 - online information 9
 - pelagic echogram 248
 - purpose of this manual 9
 - registered trademark SIMRAD 9
 - registered trademarks 9
 - replay bar 268
 - scale lines 261
 - screen capture browser 270
 - software license 9
 - software version 9
 - suggestions 10
 - surface echogram 243
 - target audience 9
 - transducer 20
 - trawl echogram 251
 - trawl line 262
 - variable depth line 263
 - vertical ticks 264
 - white line 265
- About dialog box
 - checking the current software version 177
- Active menu
 - description 282
 - how to open 282
- Add Floating Window dialog box
 - placing echogram channels in separate windows
 - on multiple displays 144
- adjusting
 - output power 151
 - power output 151
 - the pulse duration 151
 - the screen resolution 54
- anchovy
 - adjusting size 133
- annotation
 - markers 254
- annotations
 - adding to the echograms 117
 - datagram formats 161
 - exporting data on a communication port 171
 - importing using a communication port 160
- Annotations page
 - importing annotations on a communication
 - port 160
- anti-fouling paints
 - approved 204
 - International Marine Coatings 204
 - Jotun 204
 - approved anti-fouling paints 204
 - International Marine Coatings 204
 - Jotun 204
 - area fixed to vessel
 - Zoom information pane 240
 - audience
 - this manual 9
- B**
 - basic procedures
 - getting started 33
 - biomass
 - investigating 125
 - Biomass information pane
 - description 227
 - details 229
 - investigating the biomass 125
 - block
 - diagram 16
 - book
 - purpose 9
 - target audience 9
 - bottom bar
 - description 49, 267
 - enable Coordinated Universal Time (UTC)
 - time 140
 - selecting echogram views 100
 - bottom contour
 - bottom line 257
 - hardness line 257
 - white line 265
 - bottom detection
 - check settings 30, 76
 - bottom echogram
 - choosing Range and Start Range values 87
 - description 246
 - Bottom Gain
 - investigating the sub-bottom conditions 118
 - Bottom Hardness
 - investigating the bottom characteristics 132
 - Bottom Hardness information pane
 - description 231
 - details 232
 - investigating the bottom characteristics 132
 - bottom line
 - add to the echogram 111
 - bottom lock
 - check bottom detection settings 30, 76
 - bottom penetration
 - investigating the conditions 118
 - brand name
 - top bar 209
 - brightness

reducing the light emitted by the display	
presentation	138
broadband	
defining the frequency sweep	152
browser	
screen capture	270
button	
event	212
Help	220
menu hide/show	209
Messages	220
screen capture	210
buttons	
menu	272
C	
catch monitoring information	
datagram formats	163
catch sensor	
setting up the interface	162
changing	
the pulse duration	151
channel	
placing echogram channels in separate windows	
on multiple displays	144
channels	
disconnect transceiver channels	193
installing transceiver channels	62, 188, 191
checking	
check the transducer by means of the BITE	
functionality	198
the current software version	177
transceiver parameters	31
checking the current software version	
About dialog box	177
chirp	
defining the frequency sweep	152
Close button	
description	221
colour palette	
changing	141
Colour Scale information pane	
changing the colour scale in the	
presentations	122
description	223
details	225
comments	
importing using a communication port	160
send us	10
communication formats	
annotations	161
catch monitoring information	163
depth information	169
motion information	167
trawl information	165
communication port	
setting up the parameters	64, 156
computer	
adjusting the screen resolution	54
introduction	18
overview	18
purpose	18
configuring	
sensor interface	159
constructive criticism	
send us	10
context sensitive on-line help	
adding a new language	196
description	67
open	9
opening	41, 82
updating the file	195
Coordinated Universal Time (UTC)	
enable	140
copy	
echo data files	94
echogram screen capture images	96
current presentation	
recall echogram screen capture image	96
save as bitmap image	95
current software version	
checking	177
CW	
defining pulse type	153
D	
data	
defining the file and folder preferences for data	
recording	89
recording echo data	40, 90
data files	
replay previously recorded files	75, 92
datagram formats	
annotations	161
catch monitoring information	163
depth information	169
motion information	167
trawl information	165
default settings	
activating	148
define	
file and folder preferences for data recording	89
delete	
echo data files	94
echogram screen capture images	96
deleting	
saved user settings	148
depth	
choosing start range	37
read current	124
setting up depth output	169
top bar	219
depth information	
datagram formats	169
depth information pane	
open	124
Depth information pane	
description	225
details	226
depth line	
adding a variable depth line to the echogram	114
marker	263
Depth Output page	
setting up depth output	169
depth range	
choosing	37
description	
Active menu	282

- annotation markers 254
 - Biomass information pane 227
 - bottom bar 49, 267
 - bottom echogram 246
 - Bottom Hardness information pane 231
 - bottom line 257
 - Close button 221
 - Colour Scale information pane 223
 - depth information 219
 - Depth information pane 225
 - display 17
 - Display menu 276
 - distance information 218
 - Echo Position information pane 237
 - echogram label markers 259
 - echogram views 50, 241
 - Exit button 221
 - Extras menu 284
 - Fish Position information pane 235
 - hardness line 257
 - heading information 216
 - heave information 219
 - Help button 220
 - initiate event 212
 - location information 216
 - logo on top bar 209
 - Main menu 274
 - Maximize button 221
 - menu hide/show 209
 - menu system 48, 266
 - Messages button 220
 - Minimize button 221
 - navigational information 216
 - Normalize button 221
 - on-line help 67
 - Operation menu 275
 - pelagic echogram 248
 - pitch information 219
 - Power Off button 221
 - product name on top bar 209
 - record monitor 211
 - replay bar 268
 - roll information 219
 - salinity information 218
 - scale lines 261
 - School Response information pane 229
 - screen capture 210
 - screen capture browser 270
 - Setup menu 278
 - Size Distribution information pane 233
 - speed information 217
 - surface echogram 243
 - system 13
 - temperature information 217
 - top bar 45, 208
 - trawl echogram 251
 - trawl line 262
 - variable depth line 263
 - vertical ticks 264
 - white line 265
 - Zoom information pane 239
 - details
 - Biomass information pane 229
 - Bottom Hardness information pane 232
 - Colour Scale information pane 225
 - Depth information pane 226
 - Echo Position information pane 238
 - Fish Position information pane 236
 - School Response information pane 231
 - Zoom information pane 240
 - determining fish species
 - School Response information pane 128
 - disable
 - Coordinated Universal Time (UTC) time 140
 - navigational information on the top bar 139
 - tooltips in the user interface 140
 - disconnecting
 - transceiver channels 193
 - display
 - description 17
 - introduction 17
 - overview 17
 - placing echogram channels in separate windows
 - on multiple displays 144
 - purpose 17
 - reducing the light emitted by the display
 - presentation 138
 - Display menu
 - description 276
 - how to open 276
 - Display Options dialog box
 - enable Coordinated Universal Time (UTC)
 - time 140
 - select navigational information on the top
 - bar 139
 - selecting which tooltips to appear in the user
 - interface 140
 - display organisation
 - description 43, 206
 - display views
 - description 43, 206
 - distance
 - top bar 218
 - docking
 - important reminder 12
 - documents
 - download from website 9
 - download
 - documents from website 9
 - www.simrad.com 9
 - drawing
 - system diagram 16
- E**
- echo colours
 - changing 39, 105, 142
 - Echo Position information pane
 - description 237
 - details 238
 - echogram
 - adding annotations 117
 - adding scale labels 110
 - adjusting TVG in the Echogram dialog box 107
 - annotation markers 254
 - bottom echogram description 246
 - bottom line 257
 - changing the size of the echogram views 102
 - choosing range 37

choosing Range and Start Range values in a bottom related echogram	87	description	212
choosing Range and Start Range values in a surface related echogram	86	Exit button	
choosing start range	37	description	221
choosing the echogram colours	39, 105, 142	export	
delete, copy and move echogram screen capture images	96	sensor data	171
enhancing the bottom contour	111	Extras menu	
hardness line	257	description	284
label markers	259	how to open	284
pelagic echogram description	248		
placing echogram channels in separate windows		F	
on multiple displays	144	factory settings	
recall screen capture image	96	activating	148
recording data	40, 90	failures	
replay previously recorded files	75, 92	support if something breaks down	12
save as bitmap image	95	false echoes	
scale lines	261	removing noise and false echoes from the echogram	104
select type	34, 98	feedback	
select views	100	send us	10
selecting the echogram presentation layout	101	file locations	
selecting the horizontal scale	109	file and folder preferences for data recording	89
surface echogram description	243	file setup	
trawl echogram description	251	file and folder preferences for data recording	89
trawl line	262	files	
variable depth line	263	replay previously recorded files	75, 92
vertical ticks	264	filter	
views	50, 241	removing noise and false echoes from the echogram	104
white line	265	finding	
echogram data		the current software version	177
deleting, copying and moving data files	94	Fish Position information pane	
Echogram dialog box		description	235
adding automatic trawl lines to the echogram presentation	115	details	236
adding scale labels	110	Fish Select dialog box	
selecting the horizontal scale in the echogram views	109	selecting fish species and changing their size to improve the size distribution information	133
echogram presentation		fish size	
description	43, 206	adjusting	133
editing		fixed interval	
transceiver parameters	31	pinging	79
enable		FM	
Coordinated Universal Time (UTC) time	140	defining pulse type	153
navigational information on the top bar	139	folder locations	
tooltips in the user interface	140	file and folder preferences for data recording	89
end frequency		frequency sweep	
defining	152	defining	152
Environment dialog box		fresh water	
defining the sound speed close to the transducer	81	changing environmental parameters	80
environmental parameters		functional	
change	80	diagram	16
defining the sound speed close to the transducer	81		
Ethernet interface		G	
network adapter	56, 176	Gain function	
Ethernet port		adjusting the gain	36, 83
defining the communication port parameters	64, 156	General Purpose Transceiver (GPT)	
Ethernet switch		installing transceiver channels	191
introduction	19	geographical position	
overview	19	top bar	216
purpose	19	getting started	
event		procedures	33
		GPT	
		installing transceiver channels	191

- graphic adapter
 adjusting screen resolution 54
- H**
- handling
 transducers 12, 200, 202
- hardness line 257
- heading
 top bar 216
- heave
 top bar 219
- help
 adding a new language 196
 context sensitive on-line 9
 on-line help description 67
 opening the context sensitive on-line
 help 41, 82
 updating the file 195
- Help button
 description 220
- herring
 adjusting size 133
- hide
 menu 209
- hiding
 the menu system 275
- Horizontal Axis page
 adding scale labels 110
 selecting the horizontal scale in the echogram
 views 109
- horizontal depth line
 add to the echogram 113
- horizontal scale
 add to the echogram 112
- how to
 access and retrieve message log files 198
 activate factory default settings 148
 add a new context sensitive on-line help file 196
 add a variable depth line to the echogram 114
 add annotations to the echograms 117
 add horizontal depth lines to the echogram 113
 add scale labels to the echogram views 110
 add vertical marker lines to the echogram 112
 adding automatic trawl lines to the echogram
 presentation 115
 adding manual trawl lines to the echogram
 presentation 116
 adjust the gain 36, 83
 adjust the output power 151
 adjust the pulse duration 151
 adjust the screen resolution 54
 adjust the TVG 85, 106
 adjust TVG in the Echogram dialog box 107
 change the colour palette used in the
 presentation 141
 change the colour scale in the presentations 122
 change the environmental parameters 80
 change the size of the echogram views 102
 check bottom detection settings 30, 76
 check the current software version 177
 check the transceiver and transducer setup 28
 check the transceiver parameters 31
 check the transducer by means of the BITE
 functionality 198
 choose range 37
 choose Range and Start Range values in a
 bottom related echogram 87
 choose Range and Start Range values in a
 surface related echogram 86
 choose start depth 37
 choose start range 37
 choose the echogram colours 39, 105, 142
 configure the sensor interface 159
 define the Ethernet (LAN) port
 parameters 64, 156
 define the file and folder preferences for data
 recording 89
 define the frequency sweep 152
 define the pulse type for the transmissions 153
 define the serial port parameters 64, 156
 define the sound speed close to the
 transducer 81
 define the transmission ("ping")
 parameters 77, 102
 delete saved user settings 148
 delete, copy and move echo data files 94
 delete, copy and move echogram screen capture
 images 96
 determine fish species 128
 disconnect transceiver channels 193
 edit the transceiver parameters 31
 enable Coordinated Universal Time (UTC)
 time 140
 enhance the bottom contour in the
 echograms 111
 export sensor data to peripheral systems 171
 import annotations on a communication
 port 160
 increase the visibility of the information
 panes 139
 install General Purpose Transceiver (GPT)
 transceiver channels 191
 install navigation and other sensors
 (summary) 154
 install one or more transducers 60, 186
 install the operational software 55, 178
 install the software license 58, 179
 install transceiver channels 62, 188, 191
 investigate echo strength 128
 investigate the biomass 125
 investigate the bottom characteristics 132
 investigate the sub-bottom conditions 118
 locate the position of single fish in the
 beam 129, 131
 move the software license from one computer
 to another 181
 obtain and install the software license 58, 179
 open the context sensitive on-line
 help 41, 82
 open the depth information pane 124
 power off 32, 71
 power up 25, 57, 70
 recall an echogram screen capture image 96
 record echo data 40, 90
 reduce the light emitted by the display
 presentation 138
 remove noise and false echoes from the
 echogram 104
 remove the operational software 183

rename saved user settings	147	save echogram as bitmap image	95
save an echogram as a bitmap image	95	impedance	
save the current user settings	145	checking the transducer by means of the BITE	
select echogram views	100	functionality	198
select fish species and change their size to		import	
improve the size distribution information	133	annotations	160
select inactive operational mode	74	important	
select measurement units	143	before you power up	12
select menu language	34, 137	if something breaks down	12
select navigational information on the top		power off	12
bar	139	reminders	12
select normal operational mode	29, 73	switch off	12
select passive transceiver mode	150	transducer handling	12, 200, 202
select replay file	93	when not in use	12
select the echogram presentation layout	101	when you are docking your vessel	12
select the horizontal scale in the echogram		inactive mode	
views	109	selecting	74
select tooltips in the user interface	140	indicator	
select which echogram type to use	34, 98	record	211
set up (summary)	52	information	
set up depth output	169	online	9
set up synchronization	173	support	22
set up the catch sensor interface	162	information pane	
set up the interface with a navigation		area fixed to vessel	240
sensor	65, 157	Biomass information pane description	227
set up the motion reference unit (MRU)		Biomass information pane details	229
interface	166	Bottom Hardness information pane	
set up the trawl system interface	164	description	231
start replaying previously recorded		Bottom Hardness information pane details	232
files	75, 92	changing the colour scale in the	
study details in the echogram	134	presentations	122
transmit "pings" at a fixed time interval	79	Colour Scale information pane description	223
transmit single "pings"	79	Colour Scale information pane details	225
update the context sensitive on-line help file	195	Depth information pane description	225
upgrade the operational software	182	Depth information pane details	226
upgrade the Wide Band Transceiver (WBT)		Echo Position information pane description	237
software	184	Echo Position information pane details	238
use previously saved user settings	146	Fish Position information pane description	235
use the menu buttons	272	Fish Position information pane details	236
how to hide		increasing the visibility of the information	
the menu system	275	panes	139
how to open		investigating the biomass	125
Active menu	282	investigating the bottom characteristics	132
Display menu	276	open depth	124
Extras menu	284	School Response information pane	
Main menu	274	description	229
Operation menu	275	School Response information pane details	231
secondary menus	275	Size Distribution information pane	
Setup menu	278	description	233
hydrophone		Zoom information pane description	239
anti-fouling paints	204	Zoom information pane details	240
I		information panes	46, 212
I/O Setup page		initial	
connecting a catch monitoring system	162	setup (summary)	52
connecting a trawl system	164	initiate	
importing annotations on a communication		event	212
port	160	installation	
installing navigation and other sensors		software	55, 178
(summary)	154	transceiver channels	62, 188, 191
image		transducer (software)	60, 186
delete, copy and move echogram screen capture		intensity	
images	96	reducing the light emitted by the display	
recall echogram screen capture image	96	presentation	138
		interface	
		motion reference unit (MRU) setup	166

- setting up depth output 169
 - setting up the catch sensor interface 162
 - setting up the motion reference unit (MRU) interface 166
 - setting up the trawl system interface 164
- interfacing a navigation sensor
 - Sensor Installation page 65, 157
 - summary 154
- International Marine Coatings
 - anti-fouling paints 204
- interval
 - pinging 79
- introduction
 - computer 18
 - display 17
 - Ethernet switch 19
 - Processor Unit 18
 - transceiver 19
 - Transceiver Unit 19
 - Wide Band Transceiver (WBT) 19
- investigating echo strength
 - School Response information pane 128
- IP address
 - network adapter 56, 176
- IP Address
 - network adapter 56, 176
- J**
- Jotun
 - anti-fouling paints 204
- K**
- Kongsberg Maritime
 - support 22
- L**
- labels
 - in the echogram views 110
 - marker 259
- LAN port
 - defining the communication port parameters 64, 156
- language
 - select 34, 137
- latitude
 - top bar 216
- layout
 - selecting the echogram presentation 101
- license
 - software 9
- light
 - reducing the light emitted by the display presentation 138
- line
 - bottom 257
 - hardness 257
 - scale 261
 - trawl line 262
 - variable depth 263
 - white 265
- lines
 - adding a variable depth line to the echogram 114
 - adding horizontal depth lines to the echogram 113
 - adding vertical marker lines to the echogram 112
- Lines page
 - add a variable depth line to the echogram 114
 - add horizontal depth lines to the echogram 113
 - add vertical marker lines to the echogram 112
 - adding automatic trawl lines to the echogram presentation 115
 - enhancing the bottom contour in the echograms 111
- locate
 - position of single fish in the beam 129, 131
- location
 - top bar 216
- log files
 - accessing and retrieving message log files 198
- logo
 - registered trademark 9
 - top bar 209
- longitude
 - top bar 216
- M**
- magnify
 - studying details in the echogram 134
- Main menu
 - description 274
 - how to open 274
- manual
 - purpose 9
 - target audience 9
- marker
 - annotations 254
 - echogram labels 259
- master
 - setting up synchronization 173
- Maximize button
 - description 221
- measurement units
 - selecting 143
- menu
 - Active menu description 282
 - Display menu description 276
 - Extras menu description 284
 - hide/show description 209
 - Main menu description 274
 - Operation menu description 275
 - Setup menu description 278
- menu buttons
 - using 272
- menu language
 - select 34, 137
- menu system
 - description 48, 266
 - hiding 275
- message log files
 - accessing and retrieving 198
- Messages button
 - description 220
- Minimize button
 - description 221
- mode

selecting inactive operational mode	74
selecting passive transceiver mode	150
monitor	
recording	211
motion	
exporting data on a communication port	171
motion information	
datagram formats	167
motion reference unit	
datagram formats	167
motion reference unit (MRU)	
setting up the interface	166
move	
echo data files	94
echogram screen capture images	96
software license from one computer to another	181
MRU	
datagram formats	167
setting up the interface	166
multiple displays	
placing echogram channels in separate windows on multiple displays	144
N	
navigation	
exporting data on a communication port	171
selecting navigational information on the top bar	139
navigation sensor	
installing navigation and other sensors (summary)	154
setting up the interface	65, 157
navigational information	
description	216
network adapter	
IP Address	56, 176
IP address for transceiver communication	56, 176
Subnet mask	56, 176
network security	21
NMEA datagrams	
depth information	169
motion information	167
noise	
removing noise and false echoes from the echogram	104
normal operation	
selecting	29, 73
Normal Operation	
checking the transceiver parameters	31
editing the transceiver parameters	31
Normal Operation dialog box	
adjusting the output power	151
adjusting the pulse duration	151
defining the frequency sweep	152
defining the pulse type for the transmissions	153
selecting transceiver mode	150
Normalize button	
description	221
note	
before you power up	12
important reminders	12
support if something breaks down	12

when the system not in use	12
when you are docking your vessel	12
when you wish to switch off	12

O

off	
power	32, 71
offices	
support	22
on	
power	25, 57, 70
on-line help	
adding a new language	196
description	67
open	9
opening	41, 82
updating the file	195
online	
information	9
open	
Active menu	282
context sensitive on-line help	9
Display menu	276
Extras menu	284
Main menu	274
Operation menu	275
secondary menus	275
Setup menu	278
operation	
normal mode	29, 73
single ping	79
transmit "pings" at a fixed time interval	79
Operation menu	
description	275
how to open	275
operational software	
installation	55, 178
removing	183
upgrading	182
output	
setting up depth output	169
output power	
adjusting	151
overview	
computer	18
display	17
Ethernet switch	19
Processor Unit	18
transceiver	19
Transceiver Unit	19
Wide Band Transceiver (WBT)	19

P

palette	
changing	141
pane	
area fixed to vessel	240
Biomass information pane description	227
Biomass information pane details	229
Bottom Hardness information pane description	231
Bottom Hardness information pane details	232

- changing the colour scale in the
 - presentations 122
- Colour Scale information pane description..... 223
- Colour Scale information pane details 225
- Depth information pane description..... 225
- Depth information pane details 226
- Echo Position information pane description 237
- Echo Position information pane details 238
- Fish Position information pane description 235
- Fish Position information pane details 236
- increasing the visibility of the information
 - panes 139
- investigating the biomass 125
- investigating the bottom characteristics 132
- School Response information pane
 - description..... 229
- School Response information pane details 231
- Size Distribution information pane
 - description..... 233
- Zoom information pane description 239
- Zoom information pane details 240
- panes
 - information 46, 212
- parameters
 - checking the transceiver parameters 31
 - editing the transceiver parameters 31
- passive
 - selecting transceiver mode..... 150
- pelagic echogram
 - description 248
- ping
 - defining the mode 77, 102
 - transmit "pings" at a fixed time interval 79
 - transmit single "pings" 79
- Ping-Ping Filter
 - removing noise and false echoes from the
 - echogram 104
- pitch
 - top bar 219
- playback
 - selecting 75, 92
- playback file
 - selecting..... 93
- position
 - top bar 216
- position of single fish
 - in beam..... 129, 131
- power
 - decrease 151
 - increase..... 151
 - off 32, 71
 - on 25, 57, 70
- power off
 - important reminder 12
- Power Off button
 - description 221
- power output
 - adjusting 151
- power up
 - important reminder 12
- presentation
 - changing the colour palette 141
 - description 43, 206
 - enable Coordinated Universal Time (UTC)
 - time..... 140
 - recall echogram screen capture image 96
 - reducing the light emitted by the display
 - presentation 138
 - save as bitmap image..... 95
 - select tooltips 140
 - selecting echogram views..... 100
 - selecting the echogram presentation layout 101
- problem
 - support if something breaks down..... 12
- procedure
 - accessing and retrieving message log files 198
 - activating factory default settings 148
 - adding a new context sensitive on-line help
 - file 196
 - adding a variable depth line to the echogram..... 114
 - adding annotations to the echograms..... 117
 - adding automatic trawl lines to the echogram
 - presentation 115
 - adding horizontal depth lines to the
 - echogram 113
 - adding manual trawl lines to the echogram
 - presentation 116
 - adding scale labels to the echogram views 110
 - adding vertical marker lines to the
 - echogram 112
 - adjusting the gain 36, 83
 - adjusting the output power 151
 - adjusting the pulse duration 151
 - adjusting the screen resolution 54
 - adjusting the TVG 85, 106
 - adjusting TVG in the Echogram dialog box 107
 - changing the colour palette used in the
 - presentation 141
 - changing the colour scale in the
 - presentations 122
 - changing the environmental parameters 80
 - changing the size of the echogram views..... 102
 - checking bottom detection settings..... 30, 76
 - checking the current software version 177
 - checking the transceiver and transducer
 - setup..... 28
 - checking the transceiver parameters 31
 - checking the transducer by means of the BITE
 - functionality..... 198
 - choosing range 37
 - choosing Range and Start Range values in a
 - bottom related echogram 87
 - choosing Range and Start Range values in a
 - surface related echogram..... 86
 - choosing start depth 37
 - choosing start range 37
 - choosing the echogram colours 39, 105, 142
 - configuring the sensor interface..... 159
 - defining the Ethernet (LAN) port
 - parameters..... 64, 156
 - defining the file and folder preferences for data
 - recording..... 89
 - defining the frequency sweep 152
 - defining the pulse type for the transmissions..... 153
 - defining the serial port parameters..... 64, 156
 - defining the sound speed close to the
 - transducer..... 81
 - defining the transmission ("ping")
 - parameters..... 77, 102
 - deleting saved user settings..... 148

deleting, copying and moving echo data files	94	setting up summary	52
deleting, copying and moving echogram screen		setting up synchronization	173
capture images	96	setting up the catch sensor interface	162
determining fish species	128	setting up the interface with a navigation	
disconnecting transceiver channels	193	sensor	65, 157
editing the transceiver parameters	31	setting up the motion reference unit (MRU)	
enabling Coordinated Universal Time (UTC)		interface	166
time	140	setting up the trawl system interface	164
enhancing the bottom contour in the		starting replay of previously recorded	
echograms	111	files	75, 92
exporting sensor data to peripheral systems	171	studying details in the echogram	134
importing annotations on a communication		transmitting "pings" at a fixed time interval	79
port	160	transmitting single "pings"	79
increasing the visibility of the information		updating the context sensitive on-line help	
panes	139	file	195
installing General Purpose Transceiver (GPT)		upgrading the operational software	182
transceiver channels	191	upgrading the Wide Band Transceiver (WBT)	
installing navigation and other sensors		software	184
(summary)	154	using previously saved user settings	146
installing one or more transducers	60, 186	procedures	
installing the operational software	55, 178	getting started	33
installing the software license	58, 179	Processor Unit	
installing transceiver channels	62, 188, 191	adjusting the screen resolution	54
investigating echo strength	128	introduction	18
investigating the biomass	125	overview	18
investigating the bottom characteristics	132	purpose	18
investigating the sub-bottom conditions	118	product name	
locating the position of single fish in the		top bar	209
beam	129, 131	proprietary datagrams	
moving the software license from one computer		annotations	161
to another	181	catch monitoring information	163
obtaining and installing the software		trawl information	165
license	58, 179	publication	
opening the context sensitive on-line		purpose	9
help	41, 82	target audience	9
opening the depth information pane	124	pulse duration	
powering off	32, 71	adjusting	151
powering up	25, 57, 70	pulse length	
recalling an echogram screen capture image	96	adjusting	151
recording echo data	40, 90	pulse type	
reducing the light emitted by the display		defining	153
presentation	138	purpose	
removing noise and false echoes from the		computer	18
echogram	104	display	17
removing the operational software	183	Ethernet switch	19
renaming saved user settings	147	Processor Unit	18
saving an echogram as a bitmap image	95	this manual	9
saving the current user settings	145	transceiver	19
selecting echogram views	100	Transceiver Unit	19
selecting fish species and changing their size to		Transducer page	198
improve the size distribution information	133	Wide Band Transceiver (WBT)	19
selecting inactive operational mode	74	R	
selecting measurement units	143	range	
selecting menu language	34, 137	choose in a bottom echogram	87
selecting navigational information on the top		choose in a surface echogram	86
bar	139	choosing	37
selecting normal operational mode	29, 73	choosing start range	37
selecting passive transceiver mode	150	range lines	261
selecting replay file	93	raw data	
selecting the echogram presentation layout	101	deleting, copying and moving echo data files	94
selecting the horizontal scale in the echogram		replay previously recorded files	75, 92
views	109	read	
selecting tooltips in the user interface	140	current depth	124
selecting which echogram type to use	34, 98		
setting up depth output	169		

-
- read-out
 - depth 219
 - distance 218
 - heading 216
 - navigational information 216
 - position 216
 - salinity 218
 - temperature 217
 - vessel heave 219
 - vessel pitch 219
 - vessel roll 219
 - vessel speed 217
 - reader
 - this manual 9
 - record
 - defining the file and folder preferences for data
 - recording 89
 - monitor 211
 - recording
 - deleting, copying and moving echo data files 94
 - echo data 40, 90
 - registered trademarks 9
 - relay
 - sensor data 171
 - Relay Output page
 - exporting sensor data to peripheral systems 171
 - reminder
 - before you power up 12
 - important 12
 - support if something breaks down 12
 - when the system not in use 12
 - when you are docking your vessel 12
 - when you wish to switch off 12
 - removing
 - software 183
 - renaming
 - saved user settings 147
 - replay
 - selecting 75, 92
 - replay bar
 - description 268
 - replay file
 - selecting 93
 - roll
 - top bar 219
 - rules
 - transducer handling 12, 200, 202
- S**
- sailed distance
 - top bar 218
 - salinity
 - changing environmental parameters 80
 - top bar 218
 - salt water
 - changing environmental parameters 80
 - save
 - echogram as bitmap image 95
 - saving
 - echo data 40, 90
 - user settings 145
 - scale
 - selecting the horizontal scale in the echogram
 - views 109
 - scale labels
 - in the echogram views 110
 - scale line
 - adding horizontal depth lines to the
 - echogram 113
 - scale lines 261
 - School Response information pane
 - description 229
 - details 231
 - screen brightness
 - reducing the light emitted by the display
 - presentation 138
 - screen capture
 - browser 270
 - description 210
 - file handling 96
 - recall 96
 - save an echogram as a bitmap image 95
 - screen resolution
 - adjusting 54
 - secondary menus
 - how to open 275
 - select
 - echogram type 34, 98
 - passive transceiver mode 150
 - selecting
 - end frequency 152
 - frequency sweep 152
 - inactive operational mode 74
 - measurement units 143
 - navigational information on the top bar 139
 - normal operational mode 29, 73
 - replay file 93
 - replay operational mode 75, 92
 - start frequency 152
 - tooltips in the user interface 140
 - sensor
 - configuring 159
 - Sensor Configuration page
 - configuring the sensor interface 159
 - installing navigation and other sensors
 - (summary) 154
 - sensor data
 - exporting on a communication port 171
 - Sensor Installation page
 - installing navigation and other sensors
 - (summary) 154
 - interfacing a navigation sensor 65, 157
 - serial port
 - defining the communication port
 - parameters 64, 156
 - setting up
 - the trawl system interface 164
 - settings
 - activating factory default settings 148
 - deleting saved user settings 148
 - renaming saved user settings 147
 - save user settings 145
 - using previously saved user settings 146
 - setup
 - initial summary 52
 - select menu language 34, 137
 - verify transceiver and transducer 28
 - Setup menu
 - description 278

how to open.....	278	if something breaks down	12
show		support information.....	22
Coordinated Universal Time (UTC) time	140	surface echogram	
menu	209	choosing Range and Start Range values.....	86
Simrad		description	243
registered trademark	9	switch	
support	22	off	32, 71
SIMRAD		on	25, 57, 70
registered trademark	9	switch off	
single fish		important reminder	12
locate in beam	129, 131	synchronization	
single ping		setting up.....	173
select.....	79	system	
single step		description	13
select.....	79	diagram.....	16
size distribution		system not in use	
selecting fish species and changing their size to		important reminder	12
improve the size distribution information.....	133	system setup	
Size Distribution information pane		initial (summary).....	52
description	233	system software	
size of fish		installation	55, 178
adjusting	133	removing	183
slave		upgrading	182
setting up synchronization	173		
software		T	
installation	55, 178	target audience	
license	9	this manual.....	9
removing	183	temperature	
upgrading	182	changing environmental parameters.....	80
version.....	9	top bar	217
software license		this manual	
installing	58, 179	purpose	9
move from one computer to another	181	target audience	9
obtaining	58, 179	time interval	
Software License page		pinging	79
moving the software license from one computer		time variable gain	
to another	181	adjusting	85, 106
software upgrade		time varied gain	
Wide Band Transceiver (WBT).....	184	adjusting in the Echogram dialog box	107
software version		tooltips	
checking the current	177	selecting tooltips in the user interface.....	140
sonar head		top bar	
anti-fouling paints	204	Close button	221
sound speed		depth.....	219
changing environmental parameters.....	80	description	45, 208
defining the sound speed close to the		distance.....	218
transducer.....	81	event	212
exporting data on a communication port	171	Exit button	221
speed		geographical position.....	216
top bar	217	heading	216
start depth		Help button	220
choosing.....	37	information panes.....	46, 212
start frequency		logo	209
defining.....	152	Maximize button	221
start range		menu hide/show	209
choose in a bottom echogram	87	Messages button	220
choose in a surface echogram	86	Minimize button	221
choosing.....	37	navigational information	216
sub-bottom		Normalize button	221
investigating the conditions	118	Power Off button.....	221
Subnet mask		product name	209
network adapter	56, 176	record.....	211
suggestions		salinity.....	218
send us.....	10	screen capture	210
support			

-
- selecting navigational information 139
 - temperature 217
 - vessel heave 219
 - vessel pitch 219
 - vessel roll 219
 - vessel speed 217
 - trademarks
 - registered 9
 - transceiver
 - checking parameters 31
 - disconnect transceiver channels 193
 - editing parameters 31
 - installing General Purpose Transceiver (GPT)
 - transceiver channels 191
 - installing transceiver channels 62, 188, 191
 - introduction 19
 - overview 19
 - purpose 19
 - selecting passive transceiver mode 150
 - setup verification 28
 - transceiver channels
 - installing 62, 188, 191
 - Transceiver Installation page
 - checking the transceiver and transducer
 - setup 28
 - disconnecting transceiver channels 193
 - installing transceiver channels 62, 188, 191
 - Transceiver Unit
 - introduction 19
 - overview 19
 - purpose 19
 - transducer
 - about 20
 - anti-fouling paints 204
 - checking by means of the BITE
 - functionality 198
 - setup verification 28
 - software installation 60, 186
 - Transducer Face page
 - defining the sound speed close to the
 - transducer 81
 - transducer handling
 - important rules 12, 200, 202
 - Transducer Installation page
 - installing one or more transducers 60, 186
 - Transducer page
 - checking transducer by means of the BITE
 - functionality 198
 - transmission
 - defining the mode 77, 102
 - transmit
 - single "pings" 79
 - transmit "pings" at a fixed time interval 79
 - transparency
 - increasing the visibility of the information
 - panes 139
 - Transparency function
 - increase the visibility of the information
 - panes 139
 - trawl echogram
 - description 251
 - trawl information
 - datagram formats 165
 - trawl line 262
 - trawl lines
 - adding automatic trawl lines to the echogram
 - presentation 115
 - adding manual trawl lines to the echogram
 - presentation 116
 - Trawl page
 - adding manual trawl lines to the echogram
 - presentation 116
 - trawl system
 - setting up the interface 164
 - TVG
 - adjusting 85, 106
 - adjusting in the Echogram dialog box 107
 - U**
 - units
 - selecting measurement units 143
 - upgrade software
 - Wide Band Transceiver (WBT) 184
 - upgrading
 - software 182
 - user interface
 - description 43, 206
 - information panes 46, 212
 - select language 34, 137
 - select tooltips 140
 - user settings
 - activating factory defaults 148
 - deleting 148
 - put to use 146
 - renaming 147
 - retrieve 146
 - save 145
 - using
 - menu buttons 272
 - previously saved user settings 146
 - UTC
 - enable Coordinated Universal Time 140
 - V**
 - variable depth line 263
 - add to the echogram 114
 - version
 - software 9
 - vertical ticks 264
 - add to the echogram 112
 - vessel heave
 - top bar 219
 - vessel pitch
 - top bar 219
 - vessel roll
 - top bar 219
 - vessel speed
 - top bar 217
 - view
 - bottom echogram 246
 - changing the size of the echogram views 102
 - pelagic echogram 248
 - select echograms 100
 - surface echogram 243
 - trawl echogram 251
 - views
 - echogram 50, 241

visibility	
increasing the visibility of the information	
panes	139

W

water depth	
top bar	219
water salinity	
top bar	218
water temperature	
changing environmental parameters.....	80
top bar	217
WBT	
introduction.....	19
overview	19
purpose	19
software upgrade.....	184
website	
download documents	9
when not in use	
important reminder	12
white line.....	265
add to the echogram	111
whitefish	
adjusting size	133
Wide Band Transceiver (WBT)	
introduction.....	19
overview	19
purpose	19
software upgrade.....	184
wideband	
defining the frequency sweep	152
window	
placing echogram channels in separate windows	
on multiple displays.....	144
www.simrad.com	
document downloads	9

Z

Zoom information pane	
area fixed to vessel.....	240
description	239
details	240
studying details in the echogram.....	134

©2017Kongsberg Maritime

ISBN —