



KONGSBERG

Kongsberg EM 122 Multibeam echo sounder

Software release note

Release 2.0.3

TRU = 157.237.14.60
computer = 157.237.14.61 ETH1 to TRU
 255.255.0.0

—

ETH4 → ship 199.92.161.31
 255.255.255.0
 199.92.161.3

Document history

Document number: 308227		
AA	June 2015	New release of SIS. EM 122 can now use Seapath Binary 26 attitude velocity format..

Note

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Table of contents

INTRODUCTION	5
SOFTWARE RELEASE 2.0.3	7
Seafloor Information System (SIS)	7
Transceiver Unit Software	7
Changes since Release 2.0.0	7
Changes since Release 1.3.3	8
Changes since Release 1.3.2	8
Changes since Release 1.3.1	8
Software limitations	8
Known Issues	8
SOFTWARE INSTALLATION	9
Software upgrade for SIS	9
Software reinstallation/upgrade for EM 122	10
Software upgrade program	11
DOCUMENTATION	13
New features in SIS 4.1.5	15

Kongsberg EM 122

Introduction

This document presents the software release documentation for the Kongsberg EM 122 Multibeam echo sounder.

The software for the EM 122, version 2.0.3, is released for HWS Operator station with Seafloor Information System version 4.2.1.

See release note for Seafloor Information System (SIS) for information about this software.

Note

Note that some SIS features will require a hardware licence eToken.

Table 1 Modules comprised by this software release 2.0.3

Unit	Module	Version	Date	Remark
OS (HWS)	SIS	Release 4.2.1	June 2015	New release
CPU and RTOS	<i>With KONTRON</i>			
	CPU	1.3.4	Apr. 21. 2015	New version
	VxW	5.5.1	June 11. 2008	
CPU and RTOS	<i>With CON_TECH_CP_432_CPU</i>			
	CPU	1.3.4	Apr. 21. 2015	New version
	VxW	5.5.1	Oct. 8. 2009	
CPU and RTOS	<i>With CON_TECH_PP_833_SMP_BSP_CPU</i>			
	CPU	2.0.2	Apr. 21. 2015	New version
	VxW	6.9 SMP	Feb. 6. 2015	New version

Table 1 Modules comprised by this software release 2.0.3 (cont'd.)

Unit	Module	Version	Date	Remark
Common Transceiver Unit Part	<i>Common modules for CPU</i>			
	BSP Master	2.2.3	July 2. 2009	
	BSP Slave	2.2.3	July 2. 2009	
	FILTER (0.5-4)	1.0.2	Jan. 29. 2014	
	TX Firmware	1.07	Mar. 5. 2007	
	TX2_Firmware	1.14		
	TX Software	1.11	May. 7. 2013	
	RX Firmware	1.07	May 5. 2006	
	RX Software	1.11	Feb. 18. 2010	

The installation of operator software (SIS) should be done in accordance with the installation instructions.

Related topics

- *SIS Software Release Note Version 4.2.1 [881-164890].*
- *Seafloor Information System, Installation procedure [851-164891]*

Software Release 2.0.3

This software is for use with Kongsberg EM 122 system and a HWS Operator Station. The Installation Media contains the Seafloor Information System (SIS) software, the Transceiver Unit software and the user documentation.

The information in this release note describes changes in the Transceiver Unit software. For changes in the Operator station software (SIS), refer to the *SIS Software Release Note*.

What about our
reconfig to
turn off
shorted
channels -
might it be
affected?

Seafloor Information System (SIS)

This release includes SIS 4.2.1, for features and limitations, see release note for Seafloor Information System.

Transceiver Unit Software

Note _____

This release can only be upgraded from a HWS with Windows 7 64 Bit.

Changes since Release 2.0.0.

- Added decoding of Seapath Binary 26 format for attitude velocity.
- Fixed a network limitation on the ethernet interface port used for internal communication.
- Resynchronization of the internal TRU clock is done when setup datagram is received from the controlling host.

Changes since Release 1.3.3

- In the previous release the raw data logger option did not work properly. This has been fixed.
- For the Concurrent PP 833 CPU board the ethernet interface port used for internal communication with the TX and RX units has been changed from port 1 to port 2. See [CONCURRENT PP 833](#) for more information.
- Depth limits for changing source level on a 0.5 degree system has been modified to avoid saturating the receiver electronics.
- The PU ID output datagram is now logged together with the Installation datagram in the beginning of each *.all file.

Changes since Release 1.3.2

- This release is to support a new CPU board with new RIO board.

Changes since Release 1.3.1

- **Corrected TX channel BIST**

Incorrect timing in pulse measurements for 1 degree transmitter array caused incorrect impedance measurements. Configuration files for transducer element positions is updated in this version.



Software limitations

Note

SVP profile. There is a limitation on the size of the sound velocity profile. The file used by the PU must be maximum 30 kB and maximum 1000 depth points. The profile can be edited and decimated in the SIS SVP editor.

Known Issues

- **Importing PU parameters from file**

* When importing PU parameters from file after a new SIS version has been installed, Attitude velocity may also be lost:

The Attitude velocity can be reactivated using the Installation parameter -> PU Communication Setup -> Input Setup -> UDP5/6 menu (turning Attitude/Velocity off/on).

- **External sensor and startup problem**

External sensors using the highest baud rate (115200 baud), may not always connect at system power on. If this happens, press the OK in the **Installation and Test menu**, and the external sensor will connect.

Software installation

For a new EM 122 delivery, all necessary software is normally already installed on the Operator Station (HWS) and Transceiver Unit .

The software is installed from the supplied Installation Media (or from the ISO-file downloaded from the KONGSBERG Maritime ftp-server). In some cases, rebooting the TRU will be required during the installation process. After installing the new software, reboot the TRU and run the installation program again to confirm that all software is up and running with correct versions.

Note _____

In order to get the new installation program to work, the previous installation program has to be run first.

Software upgrade for SIS

For upgrade of SIS follow the installation menu found on the Installation Media, or follow the Software installation procedure.

Prep

Export pu parameters

export user settings

screen shot

Software reinstallation/upgrade for EM 122

Note _____

This release can only be upgraded from a HWS with Windows 7.

The Installation Media contains all software needed to upgrade the TRU software. The TRU needs to be connected to the network, and powered.

NOTE:

This EM 122 Software upgrade will only run on Windows 7.

[Click here for EM 122 Upgrade.](#)

If EM 122 does not show up, check this:

If you get a System Error about missing MSVCP120.dll.

-- You have to install/repair Microsoft dll\Visual C++2013 x86 Redistribution.

-- Please click [HERE](#) to fix that.

1. SIS must not be running during the upgrade, exit SIS.

2. EM 122 must be powered on.

3. The previous installation program has to be run.

A new installation program is available with SIS 4.0

If this is the first update with SIS 4.0 or later versions, [the previous installation program](#) has to be run first.

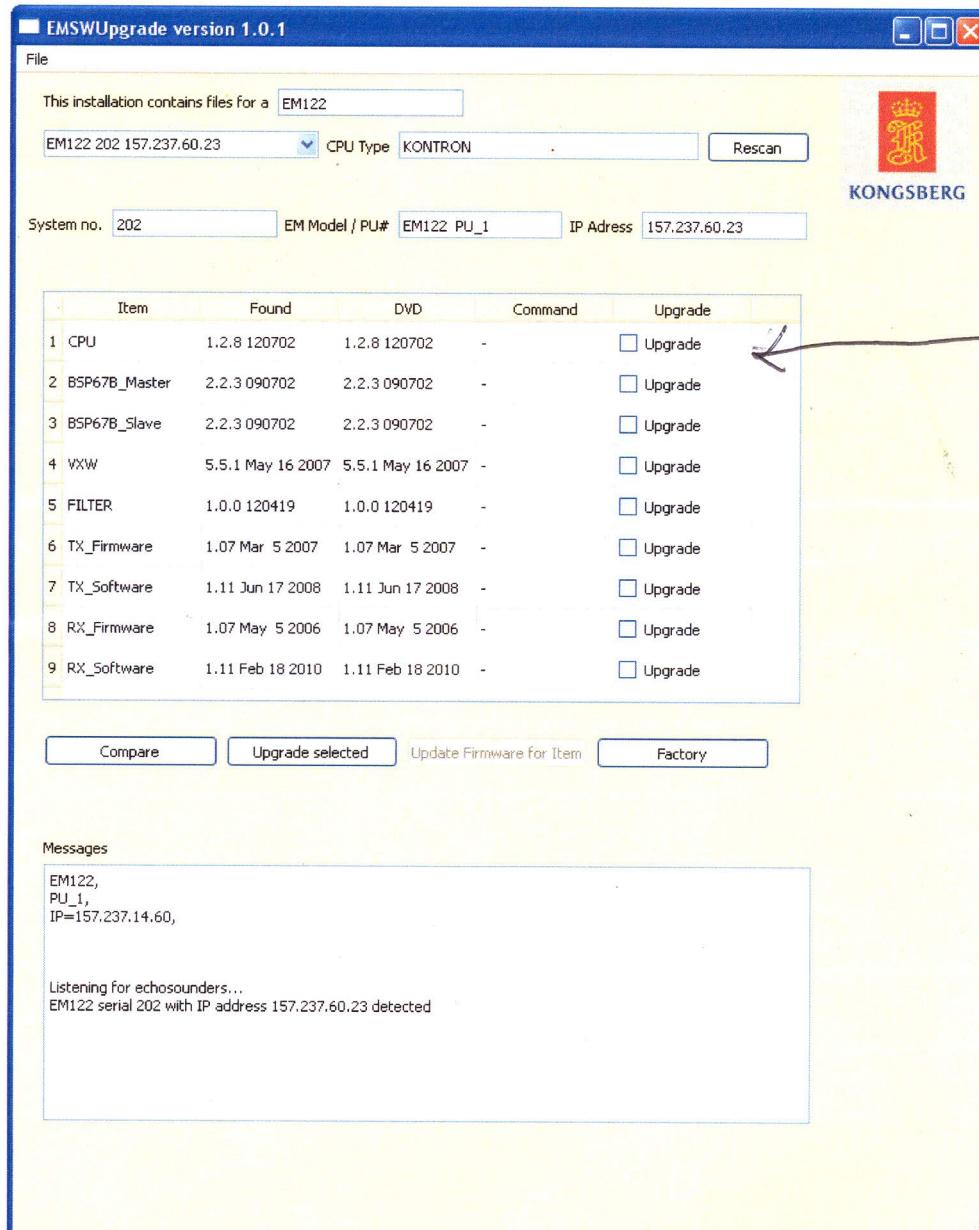
Note that this is not a full upgrade.

After reboot, the new installation program must be run to do the rest of the update or confirm that the EM 122 is upgraded.

Software upgrade program

- Start the Upgrade program from the Upgrade Media.

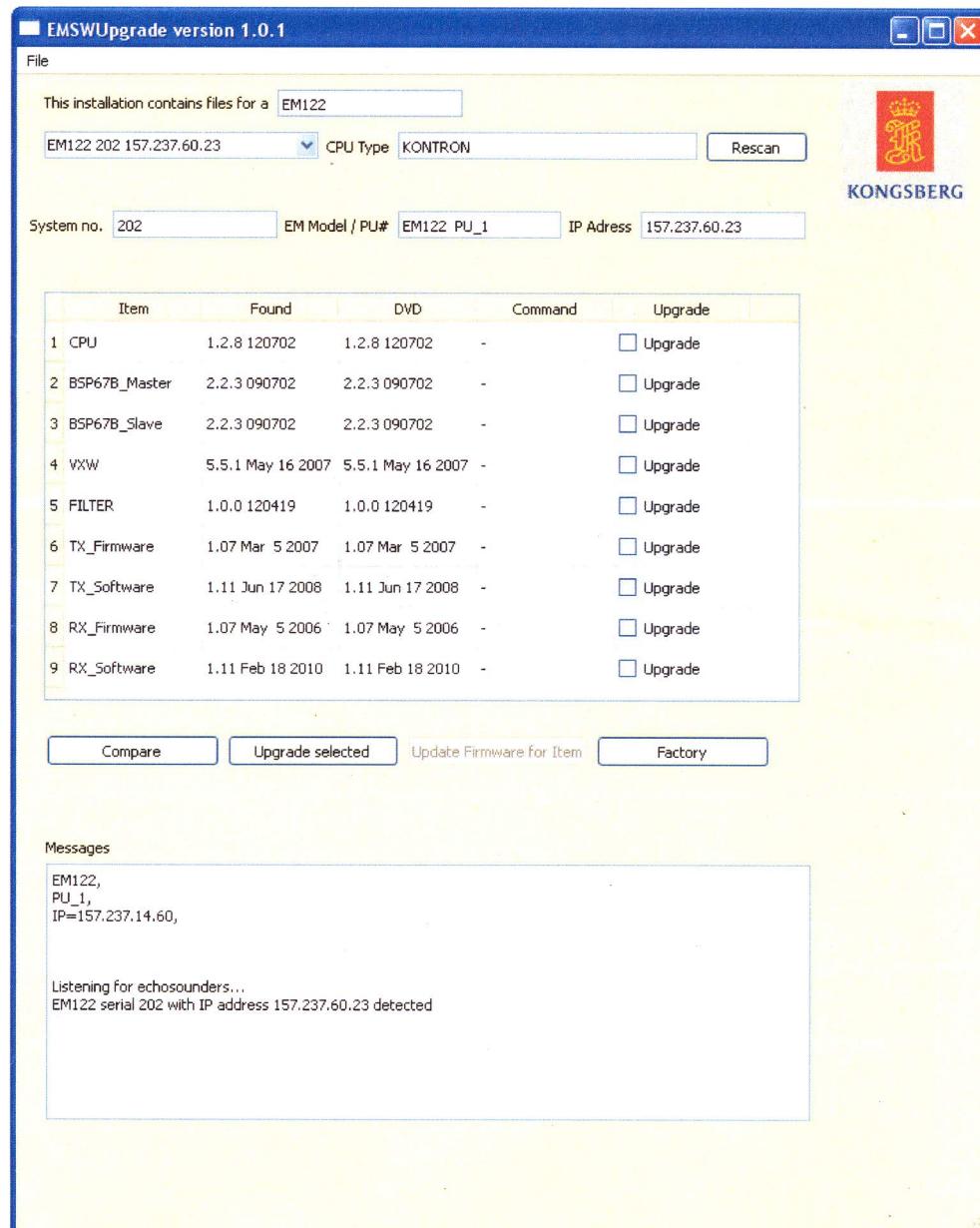
Wait for the program to recognise the EM 122, and press the Compare button.



- Files that needs to be installed for the upgrade will be marked, click the **Upgrade selected** button.

- 3 After the files have been installed in the TRU, it might be necessary to update firmware for some items.

Mark the items one at the time, by clicking in the items row, and then click the **Update Firmware for Item** button.

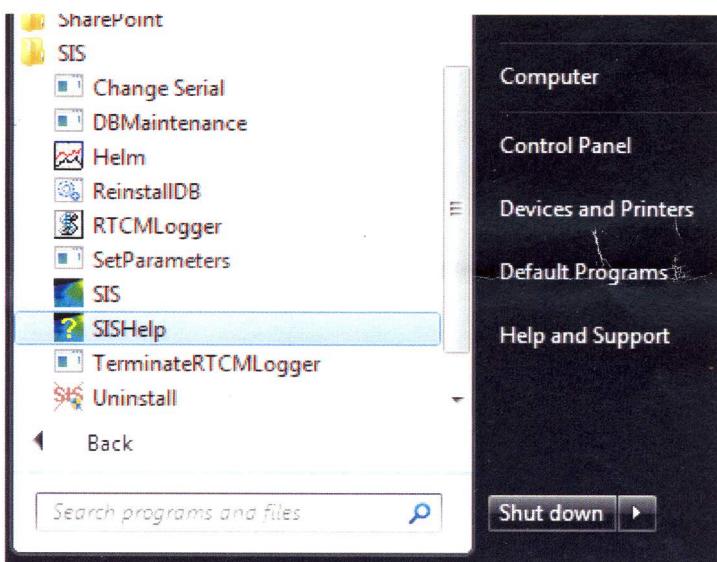


- 4 After all items have been updated, the Multibeam echo sounder has to be rebooted.

Documentation

Note _____

To locate the document, open the Start Menu in the lower left corner of the Windows Desktop and choose; All programs → SIS → SIS help.



Online help, SIS 4.0

New features is only documented in SIS 4.2.1 release note.
Document registration number: 164739 / J.

SIS Release note

Document registration number: 881–164890 / BJ.

SIS Software installation procedure

Document registration number: 851–164891 / N.

Operator manual, SIS 4.0

Document registration number: 164709 / L.

New features is only documented in SIS 4.2.1 release note.

EM series Datagram format.

NEW, updated revision.

Document registration number: 850-160692 / U.

Reference manual for EM 122

The reference manual is updated for SIS 4.0.

New feature introduced later is documented in the SIS release note.

Document registration number: 337679 / E

Maintenance manual for EM 122

Document registration number: 309059 / A.

Documentation of the new CPU board is not ready yet - preliminary version is available on request.

Installation manual for EM 122

Document registration number: 317669 / B.

Software history

Release notes for older releases of EM 122 can be found under
./SIS./doc/English/EM_doc/history/.

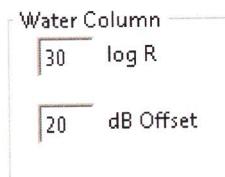
From Windows you can open the file: ../doc/EM_previous.html for easier view of the release notes.

DB Version 28.0 CD generated
Jun 24, 2015

New features in SIS 4.1.5

This section describes items added to SIS since Operator manual, SIS 4.0.

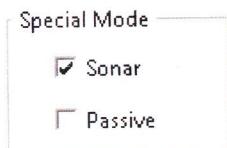
- Water column TVG function



The parameters for the water column TVG function can now be set from the **Runtime parameter** → **Filter and Gains** menu. The effect of the **log R** setting can be seen directly in the water column display. The effect of the **dB Offset** setting can usually not be seen, as it is automatically compensated for in the water column display. The **dB Offset** setting is used to adjust the dynamic range of the data stored in the water column datagrams. The dynamic range without offset is -64 to +64 dB. By setting the offset to 20 dB, the dynamic range becomes -84 to +44 dB.

Both settings are stored in the water column datagram.

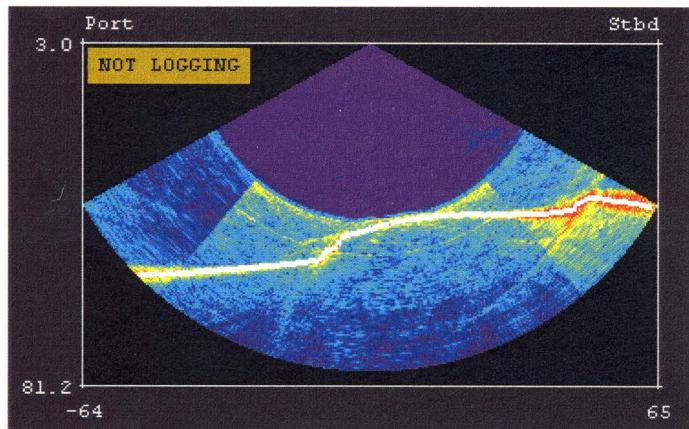
- Sonar mode



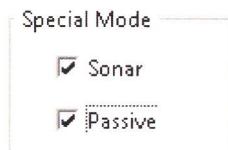
Sonar mode can be activated from the **Runtime parameters** → **Filter and Gains** menu. Sonar mode is mainly intended for displaying and logging water column data. Port and starboard angles and max range for the water column display are set using the **Max. angle** and **Max. Depth** settings in the **Runtime parameters** → **Sounder Main** menu.

Max. angle (deg.):	Port	Starboard
	<input type="text" value="60"/>	<input type="text" value="60"/>
Max. Depth (m):	<input type="text" value="75"/>	

These settings will be kept independently of bottom tracking. If **Ping Mode** is set to auto, used ping mode will be determined based on the **Max. Depth** setting. If this is not desirable, ping mode can be set manually.

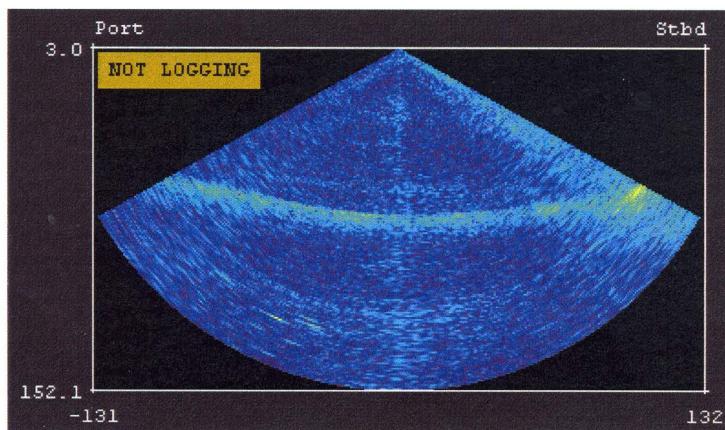


- **Passive mode**

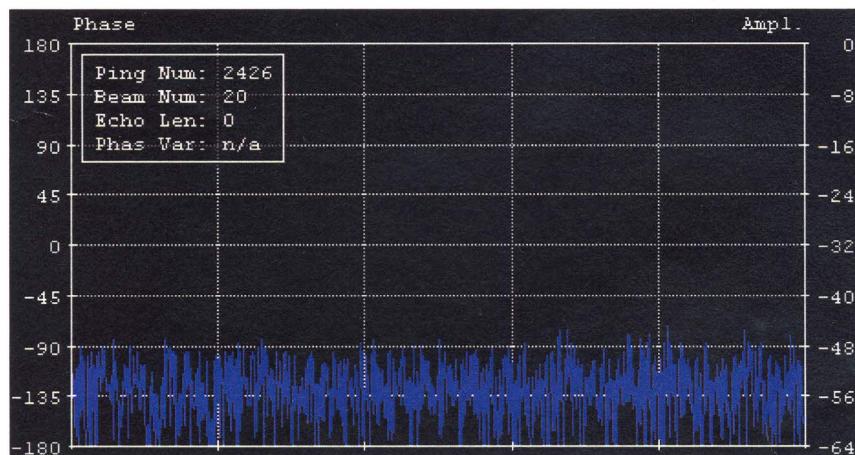


Passive mode can be used to identify sources of noise and interference. In passive mode, no TX pulses are transmitted. Passive mode can only be selected in combination with sonar mode. The levels shown in **Water Column** display, **Stave** display and **Scope** display are equivalent to the noise level, minus 100 dB. (I.e. a noise level of 45 dB will be shown as -55 dB in the displays.) Port and starboard angle, max range and ping mode are set as for sonar mode.

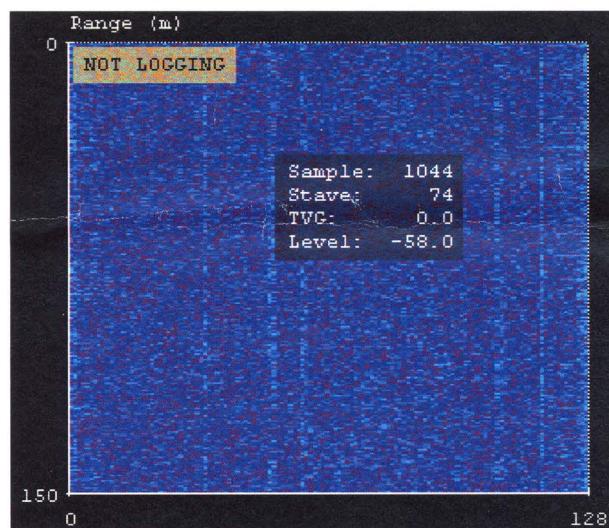
Water column display, showing bottom echo from interfering echo sounder.:



Scope display:



Stave display:



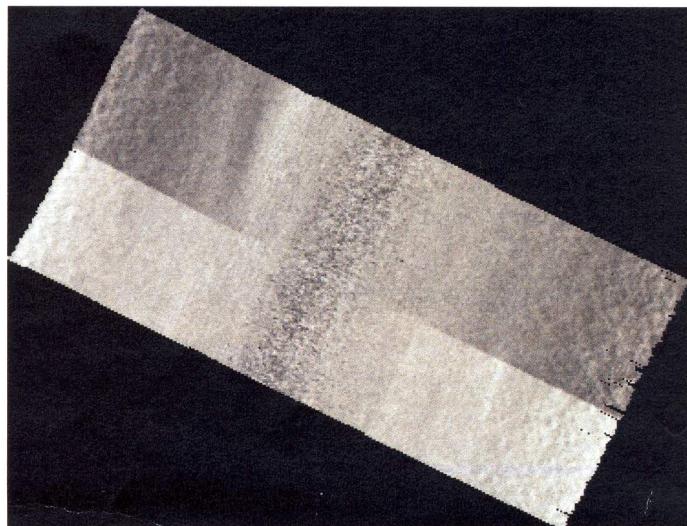
- **Beam intensity adjustment**

Backscatter Adjustment	
Normal incidence corr. (deg.):	<input type="text" value="15"/>
Beam Intensity:	<input checked="" type="checkbox"/> Use Lambert's law

It is now possible to apply Lambert's law to the data shown in the **Beam intensity** display. This is activated from the **Runtime parameters → Filter and Gains** menu. In addition to Lambert's law, the normal incidence beams (defined by the normal incidence angle) will also be corrected. By enabling this feature, the **Beam intensity** display will use the same corrections as the **Seabed image** display. It is possible to display gridded beam intensity data in the **Geographical** window.

Use of the feature is indicated in the **Raw range and angle 78** and **XYZ 88** datagrams by setting a bit in the **Detection information** parameter for each beam. Please refer to the **EM series Datagram format** document for further details.

Gridded beam intensity data is shown in the picture below. In the upper part, Lambert's law is turned off. In the lower part, Lambert's law is turned on.



back up computer

Version prior to upgrade

Version 4.1.3 Build 14

DB Version 24.0 CD generated

Dec 13 2013

created em122 rel 1.3.2 Jan-2014

loading

Version 4.2.1 Build 33

DB Version 28.0 CD generated Jun 24, 2015

IS SVP on Com3 on backup computer

yes it is !