

## Simrad EK80 Harbour Acceptance Test

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Requirements	Results
The welds and brackets that support the Power Supply Unit are strong enough to hold the unit securely in place under all operating conditions. The welds and brackets have been painted with the correct preservation medium to prevent corrosion.	<input checked="" type="checkbox"/>
The Power Supply Unit is properly grounded.	<input checked="" type="checkbox"/>
Date and signature:	 7/10/2021

### Related topics

Customer acceptance form, page 49

# Testing the EK80 operational functionality

The EK80 can be provided in several different hardware configurations. In this Harbour Acceptance Test, you only need to do the tests that apply to the specific configuration provided.

## Topics

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## Functional test of the EK80 Wide band scientific echo sounder

A brief functional test is used to verify that the EK80 is operational.

### Prerequisites

The EK80 is installed as specified in the EK80 *Installation manual*.

- The EK80 is turned off.
- All relevant channels (transceiver/transducer combinations) are installed in the user interface.
- All relevant external sensors are connected to the EK80. The sensors are turned on and operate normally.
- The vessel is berthed.

Neither tools nor instruments are required.

*Caution*

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*You must never set the EK80 to "ping" unless the transducer is submerged in water. The transducer may be damaged if it transmits in open air.*

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**Procedure**

- 1 Make sure that the EK80 units have been set up to operate with the supply voltage you have available.
- 2 Make sure that the transducer cables are not installed close to power cables.
- 3 Turn all EK80 system units on.
- 4 Make sure that the power LED on the Wide Band Transceiver (WBT) is lit.
- 5 On the Processor Unit desktop, double-click the EK80 icon to start the program.
- 6 Open the **About** dialog box.
- 7 Make sure that the latest software version is installed.
- 8 Start normal operation.
- 9 Make sure that the EK80 user interface is fully operational.
  - a Make sure that the EK80 visual presentation is shown with adequate quality.  
If necessary, adjust the display and/or the relevant properties in the Processor Unit operating system.
  - b Make sure that the menu system offered by the EK80 is operational.  
Make random selections, and make sure that the relevant sub-menus, functions or dialog boxes are activated.
  - c Make sure that the relevant views are operational.  
Move the cursor to the views in the main EK80 presentation. Click inside one of the views. Make sure that the view is activated, and that relevant changes are made in any dynamic menus.

- 10 Select the icon on the top bar to open the **Messages** dialog box.



- a Verify that no error messages are presented during normal operation.
- b Close the dialog box by selecting **Close** or [X] in its top right corner.

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

- a Make sure that the online help opens on its start page.
- b Close the online help.



- 12 On the **File Setup** page, define the recording parameters.

- 13 Make sure that the bottom detection parameters have been set correctly.

- 14 Make sure that the EK80 is fully operational

- 15 For each channel:

- a Make sure that you can detect the bottom.
- b Start raw data recording.
- c Allow the data recording to run approximately five minutes.
- d Stop raw data recording.
- e Use a file manager, and verify that the recorded file(s) have been saved on the chosen disk.
- f Verify that the playback is operational.

## Result

Requirements	Results
The correct AC or DC supply voltage is available.	OK
The transducer cables are installed with a safe distance to power cables.	OK
The latest software version is installed.	OK
The EK80 starts up in a controlled manner.	OK
The basic functionality of the EK80 is present.	OK
No error messages are presented.	OK
The context sensitive online help is functional.	OK
The bottom is successfully detected.	OK
Raw data can be recorded and played back.	OK
Date and signature:	 7/16/2024

### Related topics

[Customer acceptance form, page 49](#)  
[Secondary procedures, page 50](#)

## Functional test of the EK80 with EC150-3C

A brief functional test is used to verify that the EK80 is operational with the EC150-3C. The EC150-3C is a dual purpose unit. It can be used *either* as an acoustic Doppler current profiler (ADCP) instrument to measure water current *or* as a split-beam echo sounder. It can not operate these two functions simultaneously.

### Prerequisites

The EK80 is installed as specified in the EK80 and EC150-3C installation manuals.

- The EK80 is turned off.
- The EC150-3C is installed in the EK80 user interface.
- All relevant external sensors are connected to the EK80. The sensors are turned on and operate normally.
- The vessel is berthed.

Neither tools nor instruments are required.

### *Caution*

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*You must never set the EK80 to "ping" unless the transducer is submerged in water. The transducer may be damaged if it transmits in open air.*

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### Procedure

- 1 Make sure that the EK80 units have been set up to operate with the supply voltage you have available.
- 2 Make sure that the transducer cable is not installed close to power cables.
- 3 Turn all EK80 system units on.
- 4 On the Processor Unit desktop, double-click the EK80 icon to start the program.
- 5 Open the **About** dialog box.
- 6 Make sure that the latest software version is installed.
- 7 Select operating mode: *Echo sounder*
  - a Open the **Operation** menu.
  - b Select **Normal Operation**.

- c To activate echo sounder operation, click the small option button on the left side of the **ES** table.
  - d Select **OK** to save the selected setting and close the dialog box.
- 8 Start normal operation.
- 9 Make sure that the EK80 user interface is fully operational.
- a Make sure that the EK80 visual presentation is shown with adequate quality.  
If necessary, adjust the display and/or the relevant properties in the Processor Unit operating system.
  - b Make sure that the menu system offered by the EK80 is operational.  
Make random selections, and make sure that the relevant sub-menus, functions or dialog boxes are activated.
  - c Make sure that the relevant views are operational.  
Move the cursor to the views in the main EK80 presentation. Click inside one of the views. Make sure that the view is activated, and that relevant changes are made in any dynamic menus.
- 10 Select the icon on the top bar to open the **Messages** dialog box.
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- a Verify that no error messages are presented during normal operation.
  - b Close the dialog box by selecting **Close** or [X] in its top right corner.
- 11 Select **Help** on the top bar.
- a Make sure that the online help opens on its start page.
  - b Close the online help.
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- 12 On the **File Setup** page, define the recording parameters.
- 13 Start raw data recording.
- 14 Allow the data recording to run approximately five minutes.
- 15 Stop raw data recording.
- 16 Use a file manager, and verify that the recorded file(s) have been saved on the chosen disk.
- 17 Verify that the playback is operational.

## Result

Requirements	Results
The correct AC or DC supply voltage is available.	
The transducer cables are installed with a safe distance to power cables.	
The latest software version is installed.	
The EK80 starts up in a controlled manner.	
The basic functionality of the EK80 is present.	
No error messages are presented.	
The context sensitive online help is functional.	
Raw data can be recorded and played back.	
Date and signature:	<i>amr</i> 7/10/2024

## Measuring noise in passive operating mode

Low noise is a key factor for high quality and reliable measurements. The performance of the EK80 will always be limited by different noise sources. The noise is measured while the EK80 operates in *Passive* mode with the transmit pulses disabled.

### Prerequisites

The EK80 is installed as specified in the EK80 *Installation manual*.

- The EK80 system is turned on and operates normally.

#### *Caution*

*You must never set the EK80 to "ping" unless the transducer is submerged in water. The transducer may be damaged if it transmits in open air.*

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- All the relevant transceivers have been set up, and they are operational with their respective transducers.
  - All relevant channels (transceiver/transducer combinations) are installed in the user interface.
  - All relevant external sensors are connected to the EK80. The sensors are turned on and operate normally.
  - The vessel is berthed.

Note \_\_\_\_\_

*This test must be considered as indicative. With the vessel in port, the environmental conditions are not satisfactory. In the shallow waters of the port, noise from other vessels, dockyard workers or machinery will cause unreliable test results. If you do this tests in a busy harbour, or with noise sources present, the sensitive receivers will detect all the noise in the nearby waters. The test is therefore repeated during the Sea Acceptance Test.*

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Neither tools nor instruments are required.

**Context**

It is essential that the noise signature is as low as possible. Your EK80 must be set to *Passive* mode.

**Procedure**

- 1 To select *Passive* mode, use the **Normal Operation** dialog box.
  - a Open the **Operation** menu.
  - b Select **Normal Operation**.
  - c For the relevant transceiver channel, set **Mode** to *Passive*.
  - d Set **Pulse Duration** to 1.024 ms.
  - e Select **OK** to save the selected setting and close the dialog box.



Note \_\_\_\_\_

*If you set **Mode** to *Passive*, your EK80 will no longer provide any information in the echogram(s).*

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- 2 Enable the **Noise** tooltip.
  - a Open the **Display** menu.
  - b Select **Display Options** to open the dialog box.
  - c Select **Tooltip** to open the page.
  - d Select **Noise** to enable the tooltip.
  - e Select **OK** to save the selected setting and close the dialog box.
- 3 For each channel:
  - a Place the cursor in the approximate centre of the echogram, and observe the tooltip information.

- b Read the noise value.
- c Fill in the result table.

### Result

Frequency	Noise level	Frequency	Noise level
18 kHz	- 139,4	120 kHz	- 153,3
38 kHz	- 158,5	200 kHz	- 142,4
70 kHz	- 153,9	333 kHz	

Requirements	Results
The noise levels are recorded.	ok
Date and signature:	 7/10/2021

### Related topics

Customer acceptance form, page 49  
Secondary procedures, page 50

## Reading the transceiver hardware and software versions

The firmware and software versions in use by each Wide Band Transceiver (WBT) are required for a unique identification of the EK80 system at the time of the test. The **Transceiver Installation** page in the EK80 user interface contains all relevant information related to the hardware and software versions in the transceiver.

### Prerequisites

The EK80 is installed as specified in the EK80 *Installation manual*.

- The EK80 system is turned on and operates normally.

### Caution

*You must never set the EK80 to "ping" unless the transducer is submerged in water. The transducer may be damaged if it transmits in open air.*